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From Administrative Actors to Strategic Human Capital: Reconceptualizing Public Procurement Officers through a Human Capital Lens

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Abstract: Public procurement officers (PPOs) sit at the intersection of compliance, strategic sourcing, digital transformation, sustainability, and relational governance — a set of demands that, underneath the day-to-day language of procurement, are really human capital problems. Yet PPOs remain strikingly understudied as a professional and workforce development category. This study addresses that gap through a bibliometric-assisted review of 23 peer-reviewed articles (2016 to 2025), combining Bibliometrix R analysis, thematic mapping, and PRISMA-based screening. Six thematic domains emerged from the literature: professionalisation, institutional pressures, strategic capability, relational governance, digital transformation, and sustainability. Read together, they reconceptualize PPOs as hybrid professionals navigating multiple institutional logics at once, and as strategic human capital assets whose effectiveness depends on deliberate investment across five capability dimensions — technical procurement capital, adaptive and institutional capital, digital and AI capital, relational and social capital, and sustainability capital. The resulting Integrative Human Capital Framework offers a theoretically grounded, practically actionable foundation for procurement workforce strategy, professional certification reform, and human resource management development in digitally transforming public governance environments.

Keywords: public procurement officers; hybrid professionals; human capital; workforce capability; digital transformation; professionalisation; institutional logics

1. Introduction

Public procurement officers occupy a position inside government that is anything but peripheral. As the public managers accountable for spending public funds efficiently, transparently, and responsibly, they touch every stage of the procurement cycle — identifying what an organization needs, shaping contracting strategy, setting evaluation criteria, choosing suppliers, and following contracts through to completion so that public money translates into genuine public value (Changalima & Mdee, 2022). The scale involved is considerable. Across OECD member states, procurement absorbs an average of 12.9 per cent of GDP, placing it among the largest single categories of government spending anywhere in the world (Oecd, 2020) — which is precisely why the professional capability of the people running it matters so much. Well-equipped procurement officers deploy public resources efficiently and responsibly; officers who are not leave a trail that runs from simple waste through to systemic malpractice and eroded public trust (Ackah et al., 2025). Compounding this is the sheer speed at which the job itself is changing. Procurement professionals are no longer asked merely to run compliant purchasing processes; governments

now expect them to double as compliance guardians, strategic buyers, sustainability champions, digital system operators, and relationship managers, often switching between these roles within a single working week (Bauccio-Teschlog et al., 2025; Matthews, 2005; Nasim et al., 2026; Asya'bani et al., 2025; Schapper et al., 2017). None of this is administrative housekeeping. It is a genuine human capital problem — one that turns less on which systems and rules exist on paper and more on whether procurement professionals actually possess the competencies, adaptive capacity, and development opportunities the role now demands (Brown et al., 2022; Mappisabbi et al., 2025; Shava and Ndebele, 2024).

Seen through a human capital lens, public procurement officers look like one of the more strategically underinvested professional groups anywhere in the public sector. Human capital scholarship has long argued that organizational performance ultimately traces back to the accumulated knowledge, skills, experience, and adaptive capacity of the people involved (Jedwab et al., 2023; Ma et al., 2024). Procurement is no exception: sustainable improvement in procurement outcomes depends far more on purposeful investment in officers' professional development than on redesigning regulations or buying new digital systems (Altuntas et al., 2026; Lee et al., 2025; Faiz et al., 2024). Curiously, this insight is largely missing from the public procurement literature, which has tended to fix its gaze on systems, regulations, and institutional frameworks while paying comparatively little attention to the people who actually operate them (Abutabenjeh, 2020; Jaffu & Changalima, 2023).

This blind spot has real consequences for HRM scholarship and practice. Procurement officers make up a large, high-stakes occupational group in the public sector, and yet their workforce development needs have fallen into a gap between disciplines. Public administration treats them mainly as a governance and compliance category; mainstream HRM and HRD research on professional development has largely passed over procurement as an occupational context worth studying in its own right. One practical result is that competency framework design, training investment, and career pathways specific to procurement still lack solid evidence-based guidance, despite the scale of public money the role governs. Closing this gap is not simply an academic nicety. It is a precondition for the kind of targeted human capital investment that procurement systems actually need.

Digital tools have only added to this challenge. E-procurement platforms, AI-assisted evaluation systems, and real-time performance monitoring are changing how procurement decisions get made and how accountability is enforced, and with that comes fresh demand for digital literacy and algorithmic reasoning among practitioners (Shava and Ndebele, 2024; Zhang and Chen, 2024; Mahapa et al., 2024). But technology by itself builds nothing. A growing body of digital HRM scholarship shows that digital transformation pays off only when investment in the technology is matched by investment in the human capacity to use it well (Zhang and Chen, 2024; Lu and Said, 2025), and procurement is not alone in this. Working in higher education, Iskandar et al. (2026) find much the same pattern: digital literacy behaves like a human capital asset in its own right, tied to productivity gains only when it is deliberately cultivated rather than simply assumed to follow from exposure to technology. For procurement organizations the implication is blunt — digital reform without parallel investment in the workforce risks the one outcome they can least afford: sophisticated systems run by people who lack the competence to use them.

The scholarship mirrors the fragmentation of the job itself. Work on professionalisation, institutional pressures, digital transformation, sustainability,

relational governance, and strategic capability has largely grown up in separate lanes, with little cross-disciplinary conversation between them. That is a theoretical problem. No procurement officer actually experiences the job in these neat categories; all of these dimensions arrive at once, and every judgment call draws on some combination of technical knowledge, relational intelligence, institutional awareness, digital competence, and sustainability understanding. The idea of hybrid professionals — coined to describe people who operate across several institutional logics simultaneously (Belte, 2021; Liu and Zhang, 2022) — captures what procurement officers actually do far better than older vocabularies. And yet the human resource implications of that hybrid role have barely registered in the literature (Ren et al., 2025). This is not an isolated oversight. Emerging or non-traditional occupational categories tend to go under-mapped until someone undertakes a dedicated bibliometric effort. Kamarul Zaman et al. (2026) make the point well: the gig economy, itself fast-growing but conceptually scattered, only became legible as a coherent field once comprehensive bibliometric mapping was applied to it — a trajectory that closely parallels the fragmentation this study finds for procurement officers as a professional category.

This study takes up that challenge directly, reconceptualizing public procurement officers as hybrid professionals who are, simultaneously, strategic human capital assets in need of purposeful, sustained investment in their professional development. Through a bibliometric-assisted review paired with systematic thematic synthesis, the study maps the intellectual landscape of PPO research, pulls out the thematic streams that dominate scholarship on procurement professionalism, and builds an integrative conceptual framework drawing together human capital theory, professionalisation perspectives, institutional theory, and digital transformation scholarship. Three research questions guide the work:

RQ1: What are the dominant thematic streams in the scholarly literature on public procurement officers as a professional and human capital category?

RQ2: How do professionalisation, human capital development, institutional pressures, digital transformation, and sustainability interact in shaping the contemporary role of public procurement officers?

RQ3: How can public procurement officers be reconceptualized as hybrid professionals and as strategic human capital within contemporary public governance and human resource management scholarship?

The study makes three scholarly contributions. First, it provides a systematic map of PPO research repositioned as an emerging domain of public sector human capital and workforce development. Second, it develops an integrative framework reconceptualizing procurement officers as hybrid professionals whose effectiveness across five dimensions of human capital requires deliberate HRD investment. Third, it draws out practical implications for procurement workforce strategy, professional development systems, and digital governance capability building in contemporary public sector environments.

2. Theoretical Framework

Three interconnected theoretical perspectives anchor this study: human capital theory, professionalisation theory, and institutional theory. Each brings its own analytical lens. Taken together, they ground an understanding of the evolving PPO role as something more than a governance or compliance phenomenon — it is fundamentally a human resource development challenge that plays out within

complex, shifting institutional environments.

A. Human Capital Theory and Strategic Workforce Development

Human capital theory, as applied in contemporary organizational and public sector scholarship, holds that organizational performance reflects the accumulated knowledge, skills, experience, and adaptive capacity of the workforce (Hidayat & Widodo, 2022). In the public sector, this repositions professionals — not as cost items or compliance actors, but as strategic assets whose development counts as a long-term organizational investment with measurable returns (Mappisabbi et al., 2025; Antonio, 2024). The argument carries particular weight where digital transformation is moving fast, because human capital simply cannot stay static there. It needs continuous renewal through lifelong learning, reskilling, and professional development if it is to remain effective as institutional demands keep evolving (Lu and Said, 2025; Zhang and Chen, 2024; Lee et al., 2025).

The relevance of this perspective to public procurement officers is direct and well supported empirically. Altuntas et al. (2026), working through a competency-based training framework in a closely related professional domain, show that systematic HRD investment grounded in rigorous training needs analysis produces measurable gains in professional capability and organizational performance. Changelima and Mdee (2022) provide specific evidence that skills development positively influences procurement performance, mediated through enhanced planning capacity. Jaffu and Changelima & Mdee (2022) establish that HRD practices encompassing formal training, on-the-job development, and structured professional learning are significantly associated with procurement effectiveness in public organizations. Taken together, these findings position PPO human capital development not as a peripheral management concern but as a core driver of procurement system performance.

B. Strategic HRM and Procurement Workforce Development

Strategic human resource management (SHRM) scholarship extends human capital theory by specifying the organizational mechanisms through which human capital investment gets planned, deployed, and evaluated. In the public sector, SHRM research shows that treating employees as strategic assets, rather than as administrative or compliance staff, requires deliberate workforce planning tools: competency-based role design, structured career pathways, performance-linked development systems, and, increasingly, analytics-informed capability assessment (Mappisabbi et al., 2025; Antonio, 2024). These tools have already been applied extensively across public sector occupations. Procurement, despite its scale and strategic importance, is a conspicuous exception — the tools remain largely undeveloped there. Applying an SHRM lens to procurement, then, is not merely a conceptual relabeling exercise. Reconceptualizing PPOs as strategic human capital assets carries direct implications for how procurement workforce development should be planned and evaluated: through structured competency frameworks tied to the capability dimensions procurement work actually demands, career pathways that recognize procurement as a professional trajectory rather than a rotational administrative post, and capability analytics that let organizations track workforce readiness against the digital, relational, and sustainability-related demands documented in the sections that follow. This strategic HRM perspective supplies the organizational-level complement to the individual-level human capital theory outlined above, and it directly informs the Integrative Human Capital Framework developed later in this study.

C. Professionalisation Theory and the Hybrid Professional Role

Classical professionalisation theory treats the development of professions as a process of accumulating specialist knowledge, practitioner autonomy, and socially recognized legitimacy over time (Gorman and Vallas, 2020). Procurement professionals do not follow this relatively linear path. They operate within institutionalized environments that constrain their autonomy even as the scope of their responsibilities keeps expanding, expected to serve simultaneously as compliance guardians, strategic buyers, digital system users, sustainability agents, and innovation facilitators. The classical model — deepening expertise within a bounded domain — simply is not built to capture what contemporary procurement work demands.

Scholarship on hybrid organizations and hybrid professional roles offers a better-fitting vocabulary. Belte (2021) identifies three essential HRM roles within hybrid organizational contexts — hybrid strategist, capability adapter, and identification generator — each of which resonates with a dimension of procurement professional practice. Liu and Zhang (2022) show that professionals operating in hybrid institutional environments must develop structural adaptation capabilities that let them sustain performance coherence under uncertainty and competing demands. Mahapa et al. (2024) push this further into the Fourth Industrial Revolution context: effective HRM re-contextualization in digitally transforming environments requires digital competency development to be actively integrated with existing professional frameworks, rather than treated as a separate stream of development.

D. Institutional Theory and the Digital Transformation of Work

Institutional theory turns attention to how professionals and organizations are shaped by the normative, regulative, and cognitive pressures operating in their environments (Schapper et al., 2017). For procurement officers, these pressures come unusually layered: legal frameworks mandate compliance, market norms require efficiency, political expectations demand accountability, and digital transformation agendas add fresh imperatives for technological literacy and data-informed decision-making. Navigating this field of competing expectations takes more than technical expertise. It takes the kind of institutional intelligence that lets professionals move between different logics without losing their sense of purpose or professional integrity.

Digital transformation intensifies these pressures in specific and consequential ways. Shava and Ndebele (2024) show that the digital transformation of public sector human resource management reshapes the nature of professional work in governance contexts — not merely its tools or workflows. Zhang and Chen (2024) and Lu and Said (2025), meanwhile, establish that the value of digital tools in professional practice depends critically on the prior formation of digital human capital through structured capability development. Technology, in other words, amplifies the capability of professionals already equipped to use it purposefully; for those who are not, it simply creates new institutional pressure without providing the means to meet it.

Bringing these three theoretical perspectives together, this study positions public procurement officers as hybrid professionals whose effectiveness is simultaneously a function of their accumulated human capital across multiple dimensions, their capacity to navigate competing institutional logics with adaptive intelligence, and their ability to build and apply the digital capabilities that digitally transforming governance environments increasingly demand. This integrated theoretical position grounds the framework developed in the sections that follow.

3. Materials and Methods

To map the intellectual structure of PPO research and build toward an integrative conceptual framework, this study combines bibliometric analysis with systematic thematic synthesis (Szrajber & Alon, 2025). Combining quantitative bibliometric tools with structured thematic interpretation, rather than leaning on either approach alone, has proven valuable in other rapidly consolidating research domains — Marlina et al. (2026), for instance, integrate Biblioshiny and VOSviewer within a single analytical framework to map the halal industry literature, and find that combined bibliometric-tool approaches sharpen both the validity and the interpretive depth of thematic mapping in emerging, fragmented fields. The design here draws on established bibliometric methodologies and unfolds across four sequential stages: database selection and search strategy development, systematic screening and data extraction, bibliometric analysis, and thematic synthesis (Sharma & Sengar, 2024). This combination lets the study quantify publication patterns while also interpreting the conceptual structures underneath them.

a. Database Selection and Search Strategy

Scopus served as the primary database, chosen for its extensive peer-reviewed coverage, rigorous indexing, and established track record in bibliometric work. The search strategy was built deliberately to keep procurement officers themselves — the professional actors — in focus, rather than sweeping in literature centred on procurement systems or regulatory frameworks more broadly.

Search string: TITLE-ABS-KEY("public procurement officer*" OR "government procurement officer*" OR "public purchasing officer*" OR "public sector buyer*" OR "public procurement professional*" OR "government buyer*").

Conducted in January 2026, the search generated an initial dataset of 100 documents. Study selection followed PRISMA guidelines throughout to keep the process transparent and reproducible, with records filtered sequentially by publication year (2016–2025), document type (journal articles), publication stage (final published versions), and open-access availability. That screening narrowed the dataset from 100 initial records down to the 23 peer-reviewed journal articles that met the inclusion criteria.

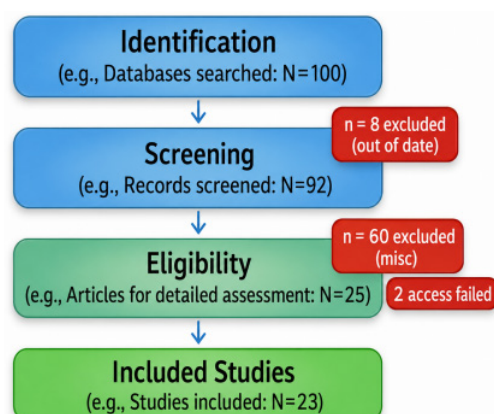


Figure 1. PRISMA flow diagram for study selection (Authors)

b. Data Extraction and Analysis Procedure

Bibliographic metadata — authors, affiliations, publication year, journal sources, abstracts, keywords, citations, and references — was extracted and exported in

BibTeX format for analysis. The bibliometric analysis itself ran through Bibliometrix R and Biblioshiny, combining performance analysis, network analysis, thematic mapping, and thematic synthesis; multiple analytical approaches were deliberately combined to strengthen validity through analytical triangulation and cross-validation.

Prior to co-occurrence network and thematic mapping analysis, the full set of Author Keywords and Index Keywords drawn from the 23-article corpus (153 unique terms) was screened for normalization. Plural and singular variations were already handled at the search stage through wildcard truncation in the Scopus search string (e.g., “officer*”). Beyond that, a thesaurus file was built in Biblioshiny to consolidate terms that were semantically identical but differed in notation or grammatical form (e.g., “maturity model”/“maturity models”, “public tender”/“public tenders”, “electronicgovernment (e-government)”/“e-government”), yielding three merged term pairs. A further fourteen non-substantive terms, carrying no topical meaning, were removed prior to network construction — generic disciplinary tags inherited from the Scopus Index Keywords classification (e.g., “business”, “economics”, “law”, “psychology”, “sociology”), generic methodological boilerplate, and residual indexing noise. Terms that are conceptually related but carry distinct scope, such as “procurement” and “public procurement”, were deliberately kept separate so as to preserve meaningful conceptual distinctions in the thematic mapping. The complete thesaurus mapping and list of removed terms appear in Supplementary File S1.

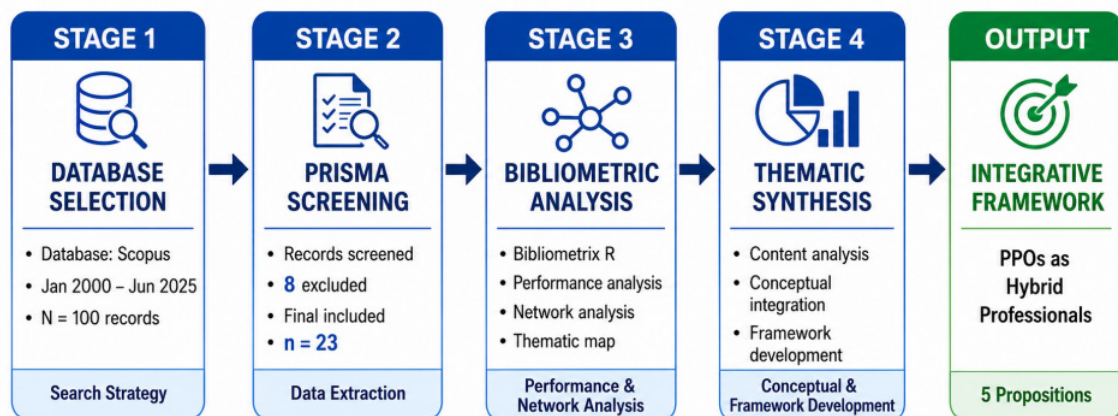


Figure 2. Research methodology flowchart—four-stage bibliometric research process
Database: Scopus | Tool: Bibliometrix R & Biblioshiny | PRISMA 2020 protocol applied

Figure 2. Research methodology flowchart (Authors)

4. Results and discussion

This section lays out the findings of the bibliometric analysis and thematic synthesis, bringing together the quantitative patterns in PPO scholarship with a systematic interpretive reading of the themes those patterns reflect. The analysis proceeds through three levels: first, the overall bibliometric landscape of the field; second, a human capital reinterpretation of its six thematic domains; and third, an integrative reconceptualization of procurement officers as hybrid professionals and strategic human capital assets.

A. Bibliometric Performance: A Growing Field with an Underexplored Human Capital Dimension

The final dataset comprised 23 peer-reviewed articles published between 2016 and 2025, produced by 72 authors across 21 different journal sources. **Table**

1 summarizes the key bibliometric performance indicators; **Figure 3** presents the annual production trajectory across the full decade of the study period.

Table 1. Bibliometric Performance Summary of PPO Research (2016-2025) with Human Capital Interpretation

Bibliometric Indicator	Value	Human Capital Interpretation
Total documents analyzed	23 articles (2016–2025)	Emergent field; HRD research gap remains open
Annual growth rate	16.65%	Accelerating scholarly interest in PPO as workforce asset
Average citations per document	11.3	Moderate impact; human capital perspectives underrepresented
Number of contributing authors	72 authors	Fragmented scholarly community; limited HRD researchers
Journal sources	21 journals	Dispersed across procurement, governance, and management
International collaboration rate	30.4% of publications	Cross-national workforce dynamics largely understudied
Contributing countries	54 countries	Global relevance; context-sensitive HRD approaches needed
Acceleration point	Post-2021	Digital transformation intensifying PPO capability demands

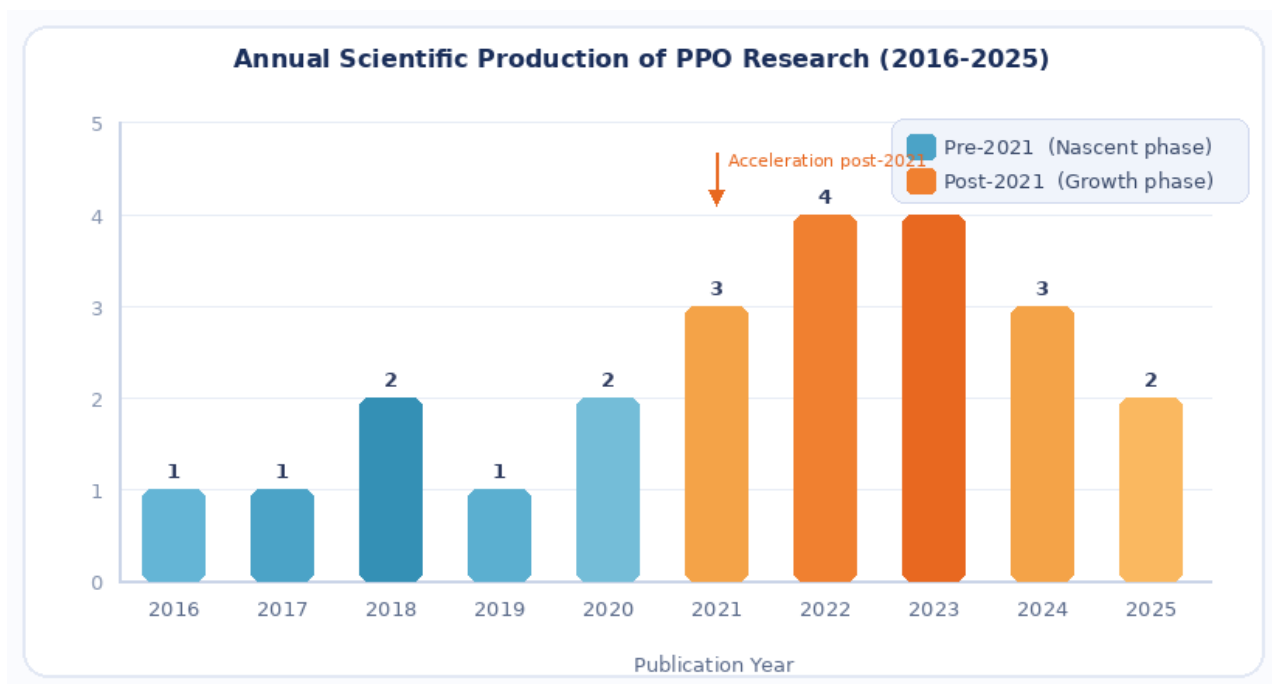


Figure 3. Annual scientific production of PPO research, 2016-2025. The shift from lighter to darker bars reflects the post-2021 acceleration phase coinciding with intensified digital transformation pressures in public procurement (Authors).

Two features of this bibliometric portrait stand out clearly. The first is the field's growth trajectory: an annual growth rate of 16.65 per cent marks a substantial, sustained rise in scholarly attention, with production accelerating noticeably after 2021. The timing matters — it coincides with intensifying digital transformation pressures across public governance systems worldwide, and with growing institutional recognition that procurement is a strategic professional function requiring dedicated

development, not a routine administrative process managed through compliance alone (Szrajber and Alon, 2025; Sharma and Sengar, 2024).

The second notable feature is the field's structural fragmentation. With 72 contributing authors spread across 21 journal sources, and international collaboration accounting for just 30.4 per cent of publications, this is a research community that has not yet coalesced around shared theoretical frameworks or programmatic research agendas. This fragmentation in the literature mirrors a fragmentation in the profession itself: just as procurement officers lack integrated professional development systems spanning the full range of capabilities their hybrid role demands, the scholarly community likewise lacks integrative frameworks bringing together the human resource dimensions of procurement work with the governance, digital, and sustainability streams of scholarship that have developed in relative isolation (Jaffu and Changalima, 2023; Altuntas et al., 2026).

B. Six Thematic Domains: A Human Capital Reinterpretation

Thematic synthesis identified six interconnected domains that together shape the intellectual landscape of PPO scholarship. Read through a human capital lens, each turns out to be more than a governance or system-level concern — each is a dimension of professional capability requiring deliberate investment and development. **Figure 4** maps the relational structure of these themes; **Table 2** presents each domain's systematic reinterpretation from a human capital and HRM perspective.

Thematic Structure of PPO Research: Human Capital Perspective

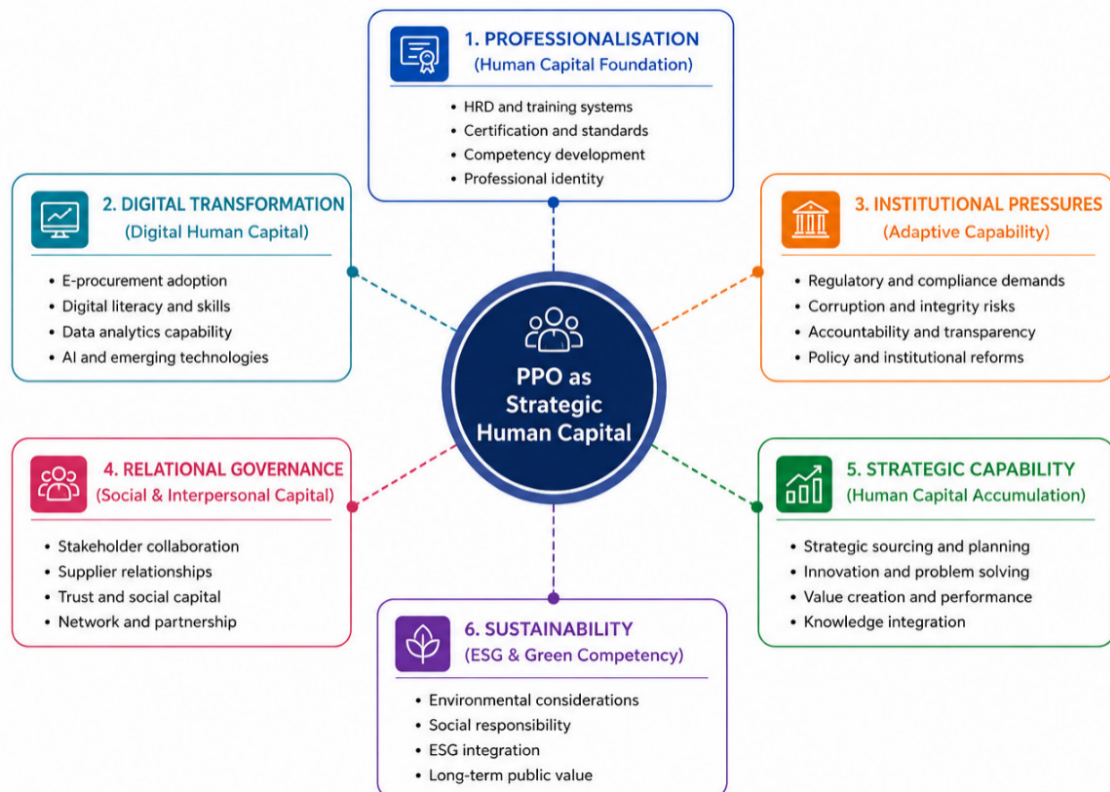


Figure 4. Thematic structure of PPO research reinterpreted through a human capital perspective. Six domains converge on the reconceptualization of PPOs as strategic human capital at the center of the field (Authors).

Table 2. Six Thematic Domains of PPO Research: Human Capital and HRM Reinterpretation (Authors)

Theme	Original Focus in Literature	Human Capital Reinterpretation	Key Capability Implication for PPOs	Supporting References
1. Professionalisation	Competency frameworks, certification systems, professional standards	Professionalisation as the primary mechanism of intentional human capital formation through structured HRD pathways	Lifelong learning, formal certification, on-the-job development, professional identity formation	Jaffu and Changelima (2023); Lee et al. (2025); Altuntas et al. (2026)
2. Institutional Pressures	Legal compliance, regulatory frameworks, accountability structures	Competing institutional logics create hybrid professional demands that require adaptive workforce capability rather than compliance alone	Adaptive capacity, boundary-spanning competencies, institutional navigation intelligence	Belte (2021); Liu and Zhang (2022); Mahapa et al. (2024)
3. Strategic Capability	Procurement performance, value for money, strategic sourcing outcomes	Strategic procurement capability as accumulated human capital; performance depends on the quality of investment in professional development	Strategic procurement skills, analytical competency, decision-making under complexity and uncertainty	Mappisabbi et al. (2025); Altuntas et al. (2026); Ma et al. (2024)
4. Relational Governance	Supplier relationships, stakeholder management, trust-based contracting	Relational governance depends on social and interpersonal human capital that formal technical training alone cannot develop	Relational intelligence, negotiation competency, stakeholder engagement, intercultural communication capacity	Glas et al. (2017); Ren et al. (2025); Ibrahim and Jantan (2024)
5. Digital Transformation	E-procurement systems, AI-assisted decision tools, digital governance infrastructure	Digital technology adoption without parallel workforce capability investment consistently underperforms; digital value requires digital human capital formation	Digital literacy, AI readiness, algorithmic reasoning, data governance competency	Mahapa et al. (2024); Zhang and Chen (2024); Lu and Said (2025)
6. Sustainability	Green procurement, sustainable supply chains, ESG policy mandates	Sustainability mandates constitute a new and distinct competency domain that existing procurement training curricula have not yet adequately incorporated	Sustainability literacy, circular economy knowledge, green evaluation criteria design, ESG competency	Andhov et al. (2025); Antonio (2024); Lee et al. (2025)

1) Professionalisation as Human Capital Formation

Professionalisation has emerged as the most consistently prominent theme across the PPO literature, encompassing competency frameworks, professional certification systems, and formal training infrastructure. Read through a human capital lens, professionalisation turns out to run deeper than quality assurance or corruption prevention. It is the primary institutional mechanism through which procurement human capital gets deliberately formed, accumulated, and socially recognized. Jaffu and Changelima (2023) establish that HRD practices, including formal training, professional certification, and structured workplace learning, are significantly associated with procurement effectiveness in public organizations. Changelima and Mdee (2022) demonstrate that procurement skills development directly and positively influences performance outcomes, mediated through improved planning capacity. Lee et al. (2025) reinforce these findings from a broader HRD perspective, showing that programs explicitly designed around human capital development principles produce measurable improvements in professional capability and organizational outcomes. Altuntas et al. (2026) provide complementary evidence from logistics, demonstrating that systematic, evidence-based HRD investment yields gains in strategic professional capability that general training programs do not reliably achieve.

2) Institutional Pressures as Adaptive Capability Demands

The institutional pressures theme captures the complex regulatory, political, and normative environments within which procurement officers work day to day. From a governance perspective, these pressures are typically analyzed as constraints on system design. From a human capital perspective, they read better as adaptive capability demands placed on the professionals themselves — procurement officers who can navigate competing institutional logics without losing their professional integrity or their commitment to public value are not simply rule-followers; they possess a form of adaptive and institutional capital that matters as strategically as their technical procurement knowledge. Belte (2021) offers the most directly relevant theoretical account here, identifying the hybrid strategist, capability adapter, and identification generator as essential professional roles in organizations operating across multiple institutional logics. Liu and Zhang (2022) push the point empirically, showing that hybrid environments require professionals to develop structural adaptation capabilities that allow performance coherence under uncertainty. Mahapa et al. (2024) extend the analysis into the Fourth Industrial Revolution context, where effective professional development in digitally transforming environments turns out to require the active integration of digital competency with existing institutional navigation capacity.

3) Strategic Capability as Accumulated Human Capital

Research on strategic procurement capability has tended to treat it as a property of procurement systems or organizational processes. A human capital reinterpretation challenges this framing directly. Strategic procurement capability is not something organizations have; it is something experienced, well-developed procurement professionals exercise. It emerges from the accumulation of knowledge, skills, judgment, and domain experience over time. Altuntas et al. (2026) demonstrate that the capability gains produced by evidence-based HRD investment are both substantial and durable, supporting the argument that procurement strategic capability is fundamentally a workforce development outcome. Ma et al. (2024) establish that professional certification, as one form of human capital investment, is significantly

associated with performance quality and career capability in professional roles. Mappisabbi et al. (2025) confirm that strategic HRM practices in public sector organizations generate measurable performance improvements precisely because they treat human capital development as an organizational priority rather than an administrative expense.

4) Relational Governance as Social and Interpersonal Human Capital

The relational governance theme highlights how central supplier relationships, cross-organizational collaboration, and trust-based contracting are to effective procurement outcomes (Ibrahim & Jantan, 2024). What the literature has been slower to recognize is that these relational capabilities amount to a distinct form of human capital, one that classroom training or certification alone cannot produce. Social and interpersonal capital builds up differently — through professional experience, through mentoring relationships, through repeated exposure to high-stakes relational contexts over a career. Ren et al. (2025) find that professional identity, shaped significantly by relational and institutional experiences, meaningfully predicts public sector professional performance and organizational commitment. Procurement officers who have built strong relational capital are simply better positioned to manage the complex supplier and stakeholder relationships that effective public contracting demands. Organizations that invest only in technical skills training while neglecting relational development leave this dimension of professional capability systematically underdeveloped.

5) Digital Transformation as Digital Human Capital Formation

Digital transformation stands out as the most rapidly expanding thematic domain in the PPO literature, with the post-2021 acceleration in publication rates closely tracking the intensification of digital procurement agendas across OECD and non-OECD member states alike (Volkova et al., 2022; Shava and Ndebele, 2024). The dominant framing in this literature has treated digital transformation primarily as a technology adoption and system implementation challenge. This study challenges that framing on the basis of substantial evidence from digital HRM scholarship. Zhang and Chen (2024) demonstrate that the digital transformation of human resource management is fundamentally a process of human capital reconfiguration, not primarily a technology deployment exercise. Lu and Said (2025) establish that the effective integration of AI tools into professional practice depends on the prior formation of digital human capital through structured and deliberate capability development processes. Mahapa et al. (2024) confirm that Fourth Industrial Revolution HRM transformation requires proactive investment in digital competency development as a core strategic priority rather than a supplementary training activity. This pattern is corroborated by recent bibliometric mapping of the wider digital HRM literature: Damayanti et al. (2026) show that research on digital human resource management, workflow automation, and e-HRM has grown at an annual rate exceeding 20 per cent since 2020, with capability-oriented themes, digital literacy, workforce analytics, and technology-enabled workforce management, occupying the field's conceptual core rather than its periphery. This human-capital reading of digital transformation extends to other domains too: Iskandar et al. (2026) similarly find, in a higher-education setting, that digital literacy predicts productivity outcomes only when it is cultivated as a distinct competency rather than assumed as a by-product of routine technology exposure, reinforcing that digital capability formation is a general precondition for digital transformation payoff across professional domains, not a

procurement-specific phenomenon. Together, these findings converge on a single and consequential implication for procurement organizations: digital systems create digital capability demands, and those demands are not met by technology deployment alone.

6) Sustainability as an Emerging and Underinvested Competency Domain

Sustainability ranks among the fastest-growing thematic areas in procurement scholarship, reflecting a decade of policy pressure to use public purchasing power as a lever for advancing environmental, social, and governance objectives (Andhov et al., 2025; Aydın & Baykal, 2023). From a human capital perspective, sustainability's emergence as a procurement imperative creates a specific and urgent workforce development challenge. Sustainability competency covers a distinct body of knowledge and practice — designing and applying green evaluation criteria, conducting ESG assessments of suppliers, navigating circular economy procurement requirements, integrating long-term environmental and social value considerations into procurement decisions. None of this is simply an extension of existing technical procurement knowledge; it constitutes a new competency domain that classical procurement certification programs, built largely around legal, financial, and commercial expertise, have not yet systematically incorporated. Antonio (2024) argues that public sector human capital management must evolve in response to changing governance mandates, so that professional development systems equip employees with the knowledge, skills, and values alignment needed to deliver on new public objectives. Lee et al. (2025) reach a similar conclusion from a different angle, showing that HRD programs explicitly designed around emerging organizational demands produce measurably stronger human capital outcomes than programs that treat new requirements as add-ons to established curricula.

C. Reconceptualizing PPOs as Hybrid Professionals and Strategic Human Capital

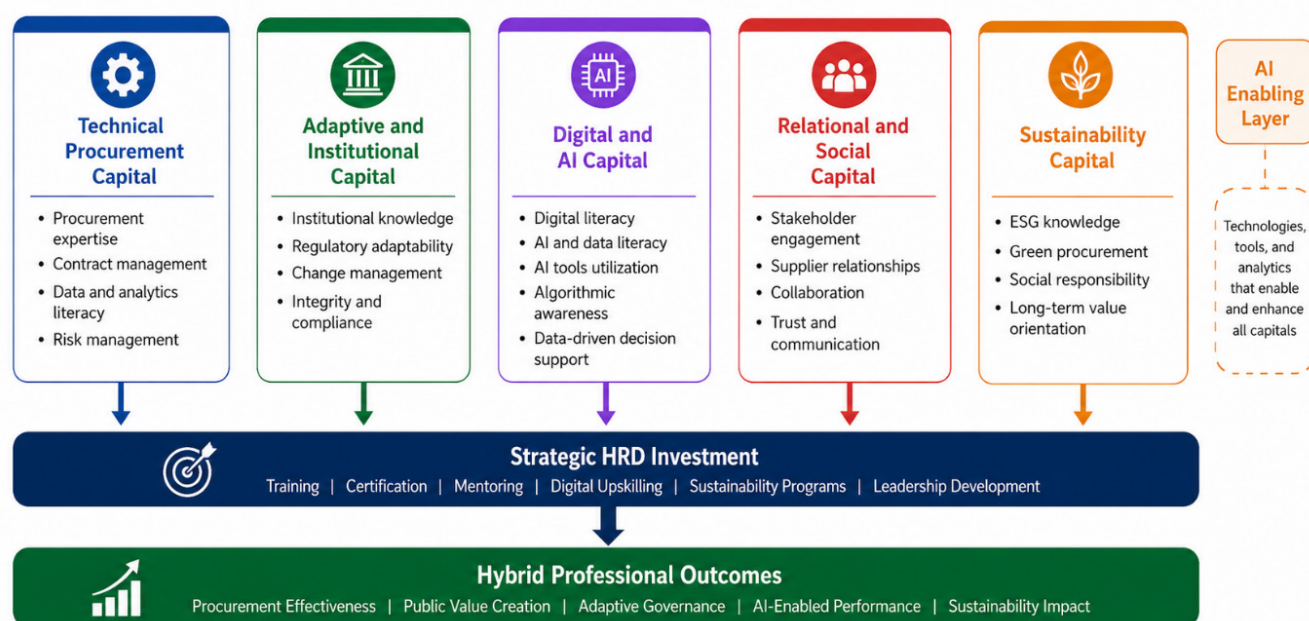
Reading the six thematic domains together produces a finding that is both clear and significant: no single professional lens can adequately capture public procurement officers. Within a single role and a single working week, they may be expected to navigate legal compliance requirements, assess supplier capabilities strategically, operate digital evaluation platforms, apply sustainability criteria, manage sensitive stakeholder relationships, and exercise institutional judgment under conditions of competing demands and limited guidance. This is the profile of a hybrid professional, as Belte (2021) uses the term — an individual whose professional effectiveness depends on the capacity to operate across multiple institutional logics at once, managing tensions between competing demands without losing coherence, purpose, or integrity.

It is worth being explicit about the epistemic status of what follows. The six thematic domains reported above come from the bibliometric evidence and the accompanying content analysis of the 23-article corpus; they describe patterns in the published literature, nothing more. The Integrative Human Capital Framework presented next is not a direct statistical output of that bibliometric analysis. It is a theoretically informed synthesis built by the authors, drawing on the identified thematic domains together with established human capital, HRD, and institutional theory, to propose a coherent account of PPO capability formation. This distinction matters: the bibliometric findings motivate and constrain the framework, but the conceptual integration itself is an interpretive contribution of this study, not an emergent statistical property of the dataset.

Table 3. Integrative Human Capital Framework for Public Procurement Officers (Authors)

Human Capital Dimension	Core Competencies Required	HRD Investment Pathway	Performance Outcome
Technical Procurement Capital	Needs assessment, contract strategy development, evaluation criteria design, supplier analysis and selection	Formal procurement education, professional certification such as CIPS, structured on-the-job training programs	Procurement efficiency, value for money achievement, reduced malpractice and error rates
Adaptive and Institutional Capital	Boundary-spanning, institutional navigation, managing competing logics, conflict resolution across contexts	Experiential learning programs, structured mentoring, cross-functional rotation assignments, leadership development	Resilient public governance, adaptive procurement performance under uncertainty and institutional change
Digital and AI Capital	Digital literacy, e-procurement system proficiency, AI-assisted decision interpretation, data analytics for procurement	Structured digital upskilling programs, AI literacy training, continuous learning platforms integrated into professional development	Strategic deployment of digital procurement tools, enhanced transparency, real-time performance management
Relational and Social Capital	Supplier relationship management, stakeholder communication, negotiation, trust-building and collaborative contracting	Interpersonal skills development programs, stakeholder management workshops, intercultural competency training	Collaborative governance, effective contract administration, creation of sustained public value
Sustainability Capital	Green evaluation criteria design, ESG assessment, circular economy procurement, sustainable supplier development	Sustainability-focused professional development modules, green procurement certification, policy literacy programs	Sustainable procurement outcomes, ESG policy compliance, contribution to long-term public value creation

Integrative Human Capital Framework for AI-Enabled PPOs

**Figure 5.** Integrative Human Capital Framework for AI-Enabled Public Procurement Officers. Five human capital dimensions, a strategic HRD investment layer, and the hybrid professional outcomes they collectively produce (Authors).

This study proposes that the hybrid professional reconceptualization, while theoretically well-grounded, remains incomplete without a human capital dimension. The capacity to navigate institutional complexity, to deploy digital tools purposefully, to build effective supplier relationships, and to apply sustainability criteria with genuine competence — none of it emerges from the procurement role itself. It has to be cultivated, through sustained, deliberate investment in professional development across the full range of human capital dimensions that hybrid professional effectiveness requires. **Table 3** and **Figure 5** present the Integrative Human Capital Framework for PPOs that emerges from this analysis.

The framework advances the existing literature in three concrete ways. First, it reorients the unit of analysis from the procurement system to the procurement professional, positioning PPO human capital as the primary driver of procurement performance rather than a secondary concern behind regulatory design and digital infrastructure. Second, it integrates five distinct human capital dimensions — technical procurement capital, adaptive and institutional capital, digital and AI capital, relational and social capital, and sustainability capital — into a coherent framework that reflects the actual complexity of what hybrid procurement professionals are expected to do. Third, it connects each dimension directly to specific HRD investment pathways and measurable performance outcomes, providing a foundation that is both theoretically grounded and practically actionable for procurement workforce strategy in public sector organizations (Mappisabbi et al., 2025; Altuntas et al., 2026; Lee et al., 2025).

Each of the five human capital dimensions is grounded in an established stream of HRM or HRD theory rather than functioning as an ad hoc descriptive category. Technical procurement capital draws on competency-based HRD theory, which links formal training and certification to measurable performance gains (Jaffu and Changelima, 2023; Ma et al., 2024). Adaptive and institutional capital is grounded in the hybrid-professional and institutional-logics literature, which explains how professionals sustain performance while navigating competing organizational demands (Belte, 2021; Liu and Zhang, 2022). Digital and AI capital sits within digital HRM theory, where technology value is treated as contingent on prior human capital formation rather than on system deployment alone (Zhang and Chen, 2024; Lu and Said, 2025; Damayanti et al., 2026). Relational and social capital draws on social capital theory as applied within HRM, treating interpersonal and network-based competencies as a distinct, experientially accumulated form of capital (Ren et al., 2025). And sustainability capital is grounded in sustainable HRM scholarship, which argues that environmental and social mandates constitute a competency domain requiring dedicated professional development rather than incidental awareness (Antonio, 2024; Lee et al., 2025). Taken together, this theoretical grounding gives an explicit rationale for treating the five dimensions as jointly constituting strategic human capital, rather than as an unlinked descriptive list.

D. AI-Enabled Procurement and the Formation of Digital Human Capital

The emergence of AI tools in procurement — automated tender evaluation, predictive supplier risk assessment, algorithmic contract management, natural language processing for procurement documentation — represents the sharpest frontier of the digital transformation theme and deserves dedicated attention as a human capital development challenge. The evidence from the thematic synthesis is clear on this point: the organizational value of AI in procurement is determined not primarily by the sophistication of the tools themselves, but by the digital human

capital of the professionals who work with them (Andhov et al., 2025; Mikalef et al., 2022; Wirtz and Muller, 2023).

Lu and Said (2025) offer the most comprehensive account of what digital human capital formation requires in AI-enabled professional contexts, pointing to three interdependent capabilities. AI literacy lets professionals understand what AI tools actually do and, critically, what they do not do — where their outputs should not be accepted uncritically. Algorithmic governance awareness allows professionals to grasp the institutional and accountability implications of decisions made with or through algorithmic support. Critical data interpretation equips professionals to interrogate digital outputs rather than defer to them, preserving the kind of professional judgment effective public procurement governance ultimately depends on. Mahapa et al. (2024) reinforce the organizational side of this argument: Fourth Industrial Revolution HRM transformation requires active, proactive integration of digital competency development into professional frameworks, rather than treating digital literacy as an incidental or self-developing capability. For procurement organizations, the practical implication is direct — every investment in AI procurement infrastructure should come paired with a structured investment in the digital human capital of the professionals who will use it.

E. Practical Implications

The findings carry substantive, actionable implications for the range of stakeholders involved in developing, managing, and governing public procurement workforces. What sets these implications apart from the governance-centric recommendations that dominate existing procurement literature is their orientation: they take the procurement professional, not the procurement system, as their primary point of reference. **Table 4** summarizes the key recommendations across five stakeholder groups, each elaborated in the discussion that follows.

Table 4. Practical Implications for Key Stakeholders: HRM-Oriented Recommendations (Authors)

Stakeholder Group	Core Recommendation	HRD Action Required	Expected Outcome
Policymakers and Government	Reframe procurement reform as a workforce development investment, not only a regulatory or technological initiative	Mandate integrated HRD components in all national procurement reform programs; fund professional certification systems comprehensively	Procurement professionals equipped with hybrid capabilities; reduced malpractice; improved public value creation
Procurement Organizations	Invest deliberately in professional development systems that cultivate boundary-spanning competencies across all five human capital dimensions	Establish internal mentoring programs, cross-functional rotation assignments, and formal career development pathways for procurement staff	Adaptive procurement workforce; stronger strategic sourcing outcomes; higher professional retention and engagement
Digital Transformation Leaders	Treat every digital procurement initiative as a human capital development program, not only a system implementation project	Budget for AI literacy training, digital upskilling, and algorithmic governance awareness as standard components of every technology deployment	Digital procurement tools deployed strategically; AI-enabled performance improvements; sustainable digital transformation returns

Continuation Table:

Stakeholder Group	Core Recommendation	HRD Action Required	Expected Outcome
Professional Development and Training Bodies	Redesign procurement certification curricula to encompass all five human capital dimensions, including sustainability literacy and AI competency	Develop competency-based training needs analysis frameworks aligned with evidence-based workforce planning approaches (Altuntas et al., 2026)	Future-ready procurement professionals with integrated competencies across technical, adaptive, digital, relational, and sustainability dimensions
HR Managers in Public Sector Organizations	Apply strategic HRM principles to the procurement function; treat procurement officers as strategic human capital assets whose development warrants sustained investment	Implement talent management systems, career pathway planning, performance development frameworks, and succession planning for procurement professionals	High-capability, engaged procurement workforce contributing meaningfully to organizational performance and the quality of public governance

The most consequential shift this study recommends for national and subnational policymakers is, at bottom, a conceptual one. Procurement reform needs reframing — moving from a primarily regulatory and technological enterprise toward a human capital investment program in which workforce development receives the same strategic priority as regulatory architecture and digital infrastructure. The consistent finding across the empirical literature is that procurement outcomes hinge less on the quality of the rules surrounding procurement than on the professional capability of the people working within those rules (Jaffu and Changalima, 2023; Changalima and Mdee, 2022; Mappisabbi et al., 2025). Rules create the conditions for good procurement. Human capital creates the actual performance.

This reframing carries three specific implications for policy design. Procurement reform programs should mandate integrated HRD components alongside any regulatory redesign or digital infrastructure investment, treating workforce development as a core element rather than a supplementary activity. National procurement professional certification systems should be expanded and strengthened to address the full five-dimensional human capital profile identified in this study, spanning technical, adaptive, digital, relational, and sustainability competencies. And procurement reform financing should set aside explicit, ring-fenced resources for workforce capability formation — applying the same evidence-based investment logic that Altuntas et al. (2026) demonstrate in the logistics domain to the procurement workforce.

For public procurement organizations, the primary practical recommendation is to invest systematically in professional development systems that cultivate boundary-spanning competencies across all five dimensions of the human capital framework developed in this study. The hybrid professional profile of contemporary procurement officers requires HRD systems that go well beyond narrow technical training — adaptive capability development, digital upskilling, relational skills cultivation, and sustainability literacy all belong on the list of integrated professional development priorities (Belte, 2021; Liu and Zhang, 2022; Mahapa et al., 2024).

In concrete terms, that starts with internal mentoring programs that pair experienced procurement professionals with newer colleagues, building the institutional navigation skills and relational capital that no classroom can teach

(Ren et al., 2025). It continues with cross-functional rotation programs that expose procurement officers to legal, finance, sustainability, technology, and stakeholder relations contexts, cultivating the boundary-spanning competencies that hybrid professional effectiveness demands. And it requires structured career development and succession planning systems for procurement staff, treating procurement capability as an organizational asset that warrants long-term investment rather than one-off training (Mappisabbi et al., 2025; Antonio, 2024).

For those leading digital procurement transformation, the central implication of this study is clear: every digital procurement initiative must be treated simultaneously as a human capital development program. The evidence from digital HRM scholarship is unambiguous — the value of digital tools depends on the capability of the professionals who use them, and that capability does not develop automatically in response to technology deployment (Zhang and Chen, 2024; Mahapa et al., 2024; Lu and Said, 2025). Digital procurement reform without commensurate human capital investment does not solve the capability gap. It just relocates it.

Concretely, every deployment of an e-procurement platform, AI-assisted evaluation system, or procurement analytics tool should be paired with a structured digital human capital development program covering the three components Lu and Said (2025) identify: AI literacy, algorithmic governance awareness, and critical data interpretation capacity. Organizations that budget generously for the technology while treating these human capital components as optional extras are making a structurally incomplete investment — one that is likely to disappoint over time.

Professional development institutions, certification bodies, and training providers in the procurement space face a clear curricular challenge from these findings. Existing procurement certification programs, typically built around technical, legal, and commercial competencies, do not adequately reflect the full human capital profile of contemporary hybrid procurement professionals (Gorman and Vallas, 2020; Altuntas et al., 2026). The Integrative Human Capital Framework developed here, presented in **Table 3** and **Figure 5**, offers a direct template for curricular redesign, mapping the competencies, HRD investment pathways, and performance outcomes associated with each of the five human capital dimensions.

The competency-based training needs analysis methodology demonstrated by Altuntas et al. (2026) offers a rigorous, practically tested model for how these curricula can be designed and validated in ways grounded in evidence and aligned with strategic workforce planning. Lee et al. (2025) add complementary evidence from a different angle: HRD-aligned educational programs explicitly oriented toward future-ready competency development produce substantially stronger professional outcomes than programs that simply bolt new capability requirements onto established technical syllabi.

For HR managers working within public sector organizations, the recommendations of this study are among the most directly actionable. The central argument is straightforward: the procurement function warrants the same quality of strategic HRM attention typically reserved for technical, specialist, or leadership roles in public organizations. Treating procurement officers as strategic human capital assets — whose professional development represents a long-term organizational investment with measurable returns in procurement performance and public value — is not a theoretical aspiration. It is a practical workforce management priority with an evidential basis (Mappisabbi et al., 2025; Antonio, 2024).

In operational practice, that translates into performance development

frameworks for procurement staff that assess and support growth across all five human capital dimensions, not technical procurement knowledge alone. It calls for career pathway structures with clear, incentivized progression routes tied to capability development, and for talent management practices — structured succession planning, high-potential identification, leadership development investment — applied to procurement professionals with the same intentionality HR managers already bring to other strategic organizational functions. And it calls for digital capability development to be treated as a strategic HR intervention in its own right: forming the digital human capital that AI-enabled procurement requires is a workforce strategy priority that belongs squarely within human resource management (Zhang and Chen, 2024; Mahapa et al., 2024; Lu and Said, 2025).

5. Conclusion

This study set out to map the intellectual landscape of public procurement officer research and to develop an integrative framework positioning procurement professional development as a human capital challenge at the heart of contemporary public governance. It was motivated by a simple recognition: procurement officers, despite the growing strategic significance of their role, have been systematically understudied as professional actors and as human capital assets. Addressing that gap required bringing together scholarly streams that have typically developed without much dialogue — human resource development, procurement studies, public administration, and digital transformation scholarship.

The bibliometric analysis confirms that PPO scholarship is a field in genuine motion — growing at 16.65 per cent annually, accelerating noticeably after 2021, drawing contributions from researchers across 54 countries. Yet it remains structurally fragmented, with publications dispersed across 21 journal sources and a scholarly community organized largely around bilateral partnerships and small research clusters rather than programmatic, integrative research agendas. This fragmentation is itself a finding worth taking seriously. It mirrors the fragmentation of the professional development landscape for procurement officers, where capabilities are developed in disciplinary silos that rarely communicate across the full range of what hybrid procurement professionals actually need.

The thematic synthesis reveals six interconnected domains shaping contemporary PPO scholarship: professionalisation, institutional pressures, strategic capability, relational governance, digital transformation, and sustainability. Reread through a human capital lens, each of these domains turns out to be a dimension of professional capability requiring deliberate investment. The central conclusion of the study follows from that: public procurement officers are not, and cannot meaningfully be understood as, administrative actors managing procedural compliance. They are hybrid professionals operating simultaneously across multiple institutional logics, and they are strategic human capital assets whose effectiveness in those complex professional roles depends on sustained, evidence-based investment in human resource development across five distinct capability dimensions.

A. Theoretical Contributions

This study makes three theoretical contributions at the intersection of procurement scholarship, human capital theory, and human resource management research. The first is a systematic map of PPO research repositioned as an emerging domain of public sector human capital and workforce development. By bringing bibliometric methods and thematic synthesis to bear on 23 peer-reviewed studies

spanning a decade of PPO scholarship, the study provides a consolidated empirical foundation for future HRM-oriented procurement research and identifies the integrative frameworks the field currently lacks.

The second contribution is the Integrative Human Capital Framework for PPOs, presented in **Table 3** and **Figure 5**. It advances existing scholarship in two respects. It extends the hybrid professional concept introduced by Belte (2021) by grounding it in human capital theory, showing that hybrid professional effectiveness is not simply a function of role breadth or institutional exposure but of deliberate capability formation across five dimensions — technical procurement capital, adaptive and institutional capital, digital and AI capital, relational and social capital, and sustainability capital. And it connects each of these dimensions to specific HRD investment pathways and performance outcomes, bridging the gap between conceptual frameworks and practical workforce strategy in ways accessible to practitioners, policymakers, and HR managers alike (Altuntas et al., 2026; Lee et al., 2025).

The third contribution extends digital HRM scholarship into the procurement domain. The argument that digital tool value is contingent on prior digital human capital formation (Lu and Said, 2025; Zhang and Chen, 2024; Mahapa et al., 2024) has already been established in organizational and educational contexts; this study demonstrates its specific relevance to procurement. It does so by developing the AI-enabled procurement dimension of the framework, and by positioning digital capability formation — AI literacy, algorithmic governance awareness, critical data interpretation — as an urgent and underinvested HRD priority for public procurement organizations at the frontier of digital governance transformation.

B. Limitations

Several limitations deserve acknowledgment here in the interest of scholarly transparency. Relying on Scopus as the sole database means that relevant work published in Web of Science, regional databases, practitioner outlets, government research repositories, or grey literature may not be captured by the analysis. This limitation is particularly consequential for developing country contexts, where procurement human capital challenges are often most acute but scholarly contribution to globally indexed journals remains relatively limited. Future reviews of this literature would benefit from a multi-database search strategy that also incorporates grey literature, to capture practice-relevant knowledge on procurement workforce development that may circulate outside indexed academic journals.

The bibliometric dataset of 23 articles reflects the formative stage of PPO scholarship as a distinct research domain. Given this modest sample size, the co-occurrence network and thematic map developed here are best interpreted as an indicative structural overview of an emerging field, not a statistically stable representation — and claims about the six thematic domains identified here should accordingly be read as provisional. These thematic patterns and conceptual structures are emerging configurations, not consolidated scholarly positions. They represent the current state of a field still finding its disciplinary identity, and are likely to evolve significantly as more studies accumulate and the research community develops greater theoretical coherence. Correspondingly, the Integrative Human Capital Framework proposed here should be understood as a theoretically informed synthesis appropriate to this formative stage of the literature — intended to guide future empirical validation and framework refinement as the evidence base grows, rather than as an already-validated model. Finally, bibliometric analysis captures patterns of scholarly production, not the lived realities of procurement professional practice.

The conceptual frameworks developed here are analytical and generative tools for understanding the field and guiding research and practice development, not direct prescriptions for specific operational contexts; practitioners and policymakers are encouraged to interpret the findings in light of their own institutional environments and workforce conditions.

C. Directions for Future Research

Future research should build on the foundations established here, in several directions that emerge organically from the human capital framework developed in this study. Empirical investigations into the relationships between specific HRD investments and procurement performance outcomes would provide the evidence base policymakers and HR managers need to make defensible, effective workforce investment decisions. The methodological approaches demonstrated by Altuntas et al. (2026) and Jaffu and Changelima (2023) offer practical starting points for such investigations, in both OECD and developing country contexts.

Comparative studies across national and institutional environments would help determine how governance conditions, public sector HR systems, and the strength or weakness of existing professional certification infrastructure shape the hybrid professional role — and which forms of HRD investment work best in supporting it. Longitudinal and mixed-method research designs would illuminate how procurement professionals actually develop, adapt, and sustain capability across their careers, a dimension of procurement human capital formation that remains entirely unexplored empirically.

The AI-enabled procurement dimension of the framework points to a set of research questions that are both pressing and largely unaddressed. What specific digital competencies predict effective professional deployment of AI-assisted procurement tools? How do different governance environments shape the institutional uptake of algorithmic decision support in public contracting? What organizational conditions best support the formation of digital human capital among procurement professionals at different stages of their professional development? And how do sustainability competency demands and digital capability requirements interact in shaping the capability profile of the procurement professionals who will navigate the governance environments of the next decade?

More broadly, the field would benefit from greater theoretical integration across its currently fragmented scholarly streams. A more unified research community around procurement professionals as strategic human capital — one that draws productively on human resource development scholarship, public administration, procurement studies, institutional theory, and digital governance research — would provide more coherent guidance for the institutional reforms and professional development investments these findings so clearly call for. It is this kind of integrative, people-centred scholarship that the next generation of public procurement research most needs.

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References

1. Abutabenjeh, S. (2020). Strategic Management in State Government Two Servants of the Same Master: Procurement and Finance. *International Journal of Public Administration*, 44(7), 607–621. <https://doi.org/10.1080/01900692.2020.1742158>
2. Ackah, D., Issah, O., & Richard, A. (2025). Resource Capabilities as a Moderator: Impact of Procurement Practices on Project Performance and Competitive Advantage. *Project Management and Scientific Journal*, 8(1), 158–188. <https://doi.org/10.4314/pmsj.v8i1.6>
3. Altuntas, G., Inanc, Y., Bolelli, M., and Boz, C. (2026). Strategic human capital development in logistics: A competency-based training framework using fuzzy best-worst method for evidence-based workforce planning. *Human Resources Management and Services*, 8(2). <https://doi.org/10.18282/hrms.v8i2>
4. Andhov, M., Darnall, N., and Andhov, A. (2025). Leveraging AI for sustainable public procurement: Opportunities and challenges. *Frontiers in Sustainability*, 6. <https://doi.org/10.3389/frsus.2025.1603214>
5. Antonio, A. (2024). Unlocking potential: Human capital management in the public sector. *Journal of Research in International Business and Management*, 11(1). <https://doi.org/10.14303/jribm.2024.005>
6. Asya'bani, N., Susanto, A. A., Choris, L. H. I. P., Indirwan, S. K., & Robani, A. B. (2025). *Navigating the future: The impact of AI on Islamic economic policy in the digital age. Review of Islamic Economics and Finance*, 8(1). <https://ejournal.upi.edu/index.php/rief/article/view/80936>
7. Aydin, A. G., and Baykal, E. (2023). The impact of organizational strategic trends on individual-based resilience with a digital transformation perspective. *Human Resources Management and Services*, 5(1). <https://doi.org/10.18282/hrms.v5i1.3359>
8. Bauccio-Teschlog, T. R. M., King, R. L., and Tommie Jr, W. J. (2025). *Introduction to procurement in the public sector*. Routledge. <https://doi.org/10.4324/9781003566564>
9. Belte, A. (2021). New avenues for HRM roles: A systematic literature review on HRM in hybrid organizations. *German Journal of Human Resource Management: Zeitschrift Für Personalforschung*, 36(2), 148–179. <https://doi.org/10.1177/23970022211049533>
10. Brown, M., Harper, M., Vitasek, K., & Keith, B. (2022). Preparing procurement professionals: Your organisation's competitive advantage. *Journal of Supply Chain Management, Logistics and Procurement*, 4(3), 269. <https://doi.org/10.69554/ztlx6141>
11. Chagalima, I. A., & Mdee, A. E. (2022). Procurement skills and procurement performance in public organizations: The mediating role of procurement planning. *Cogent Business & Management*, 10(1). <https://doi.org/10.1080/23311975.2022.2163562>
12. Damayanti, A., Miftahuddin, A., Rofaida, R., Perdana, Y., Husna, R. A., and Juliana, J. (2026). Two decades in five years: Mapping digital HR, workflow automation, and innovation ecosystem research (2020–2025). *Daengku: Journal of Humanities and Social Sciences Innovation*, 6(2), 259–275. <https://doi.org/10.35877/454RI.daengku4894>
13. Faiz, I., Taib, F., Harwood, J., & Triono, D. (2024). A Review of Central Bank Digital Currency Application in Indonesia. *Jurnal Kajian Peradaban Islam*, 7(2), 161–177. <https://doi.org/https://doi.org/10.47076/jkpis.v7i2.316>
14. Glas, A. H., Schaupp, M., and Essig, M. (2017). An organizational perspective on the implementation of strategic goals in public procurement. *Journal of Public Procurement*, 17(4), 572–605. <https://doi.org/10.1108/JOPP-17-04-2017-B003>
15. Gorman, E. H., and Vallas, S. P. (2020). Introduction: Expertise and the changing structure of professional work (pp. 1–8). Emerald. <https://doi.org/10.1108/s0277-283320200000034004>
16. Iskandar, I., Juliana, J., Miftahuddin, A., Marlina, L., Ridlwan, A. A., Marlina, R., and Inomjon, Q. (2026). Digital literacy and academic productivity: A human capital perspective in higher education. *Human Resources Management and Services*, 8(1), 5793. <https://doi.org/10.18282/hrms5793>
17. Hidayat, M. T., & Widodo, A. P. (2022). The Influence of Human Capital on Organizational Performance. *Die*, 13(2), 195–205. <https://doi.org/10.30996/die.v13i2.7301>
18. Ibrahim, F. B., & Jantan, A. H. B. (2024). CHALLENGES, BARRIERS, AND SOLUTIONS IN PUBLIC-PRIVATE PARTNERSHIPS (PPP): A COMPREHENSIVE REVIEW. *International Journal of Professional Business Review*, 9(10),

- e04830. <https://doi.org/10.26668/businessreview/2024.v9i10.4830>
19. Jaffu, R., & Changalima, I. A. (2023). Human resource development practices and procurement effectiveness: implications from public procurement professionals in Tanzania. *European Journal of Management Studies*, 28(2), 149–169. <https://doi.org/10.1108/ejms-04-2022-0030>
 20. Kamarul Zaman, N. J. F., Ahmi, A., Ismail, S., Abd Samad, K., and Juliana, J. (2026). Gig economy insights: key trends, influencers and research directions. *Global Knowledge, Memory and Communication*. <https://doi.org/10.1108/GKMC-07-2024-0456>
 21. Jedwab, R., Vollmer, S., and Wane, W. (2023). Human capital investment and development: The role of on-the-job training. *Journal of Development Economics*, 162, 103025. <https://doi.org/10.1016/j.jdeveco.2023.103025>
 22. Lee, H.-W., Jang, S.-H., and Jeong, J.-S. (2025). A literature review on university student entrepreneurship from a Human Resource Development perspective. *Human Resources Management and Services*, 7(3), 4900. <https://doi.org/10.18282/hrms4900>
 23. Liu, L., and Zhang, C. (2022). Organizational structure change and hybridity: Enhancing uncertainty as a response to competing and changing institutional logics. *Frontiers in Psychology*, 13, 854319. <https://doi.org/10.3389/fpsyg.2022.854319>
 24. Lu, Y., & Said, M. N. H. M. (2025). Developing digital human capital: Formation mechanism and human resource development framework of pre-service teachers AI integration competence. *Human Resources Management and Services*, 7(4), 5561. <https://doi.org/10.18282/hrms5561>
 25. Ma, Q., Li, H., and Gurtu, A. (2024). Human capital accumulation and career advancement: Evidence from professional certifications. *International Journal of Human Resource Management*, 35(4), 712-738. <https://doi.org/10.1080/09585192.2023.2238451>
 26. Mahapa, M., Mahao, M. E., and Sesinyi, L. (2024). Re-contextualising human resource management in the 4IR: Lessons for Lesotho. *Human Resources Management and Services*, 6(3), 3397. <https://doi.org/10.18282/hrms.v6i3.3397>
 27. Mappisabbi, A., Suharno, and Akib, H. (2025). Enhancing organizational performance through strategic human resource management in public sector organizations. *International Journal of Economics, Management and Accounting*, 3(1), 229-236.
 28. Marlina, L., Juliana, J., Ismail, S., and Dewi, S. V. (2026). Halal industry development strategy: a bibliometric analysis. *Journal of Islamic Marketing*, 17(1), 324–348. <https://doi.org/10.1108/JIMA-12-2024-0591>
 29. Matthews, D. (2005). Strategic procurement in the public sector: A mask for financial and administrative policy. *Journal of Public Procurement*, 5(3), 388-399. <https://doi.org/10.1108/jopp-05-03-2005-b005>
 30. Mikalef, P., Gupta, M., Pappas, I. O., and Krogstie, J. (2022). Artificial intelligence capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance. *Information and Management*, 59(3), 103434. <https://doi.org/10.1016/j.im.2021.103434>
 31. Nasim, A., Asbaruna, E. Q. B., Juliana, J., Purnomo, B. S., Marlina, R., Sholahudin, M. A., Rusydiana, A.S., and Qudratov, I. (2026). Driving Maqāṣid al-Shari'ah Performance in Islamic Banks: The Roles of Islamic Social Reporting, Intellectual Capital, and Sharia Governance. *Al-Muamalat*, 13(1), 102–118. <https://doi.org/10.15575/am.v13i1.54396>
 32. Oecd, O. (2020). OECD Public Governance Policy Papers. *Public Governance Policy Papers*. <https://doi.org/10.1787/14e1c5e8-en-fr>
 33. OECD. (2019). Public procurement in Chile: Policy options for efficient and inclusive framework agreements. *OECD Public Governance Reviews*. <https://doi.org/10.1787/1de35b01-en>
 34. OECD. (2021). Government at a glance 2021. OECD Publishing. <https://doi.org/10.1787/1c258f55-en>
 35. Patrucco, A. S., Luzzini, D., and Ronchi, S. (2019). Measuring the effectiveness of public procurement: An empirical investigation across organizations. *Journal of Public Procurement*, 19(2), 106-127. <https://doi.org/10.1108/JOPP-07-2018-0024>
 36. Ren, X., Zhu, A., Yu, J., and Guo, C. (2025). Enhancing public sector employees professional identity: A study using China Labor Force Survey data. *PLOS ONE*, 20(1), e0313603. <https://doi.org/10.1371/journal.pone.0313603>
 37. Schapper, P. R., Malta, J. N. V., and Gilbert, D. L. (2017). Analytical framework for the management and reform of public procurement (pp. 87-104). Routledge. <https://doi.org/10.4324/9781315092539-5>
 38. Schotanus, F., and Grandia, J. (2023). Public procurement policy and purchasing strategy. In J. Grandia and L. Volker (Eds.), *Public procurement* (pp. 85-108). Palgrave Macmillan. https://doi.org/10.1007/978-3-031-18490-1_5
 39. Sharma, P., and Sengar, A. (2024). Trends and insights in renewable energy research: A comprehensive bibliometric

- analysis (2000-2023). *International Journal of Energy Sector Management*, 19(4), 751-771. <https://doi.org/10.1108/ijesm-05-2024-0020>
40. Shava, E., and Ndebele, N. (Eds.). (2024). *Digital transformation in public sector human resource management*. IGI Global. <https://doi.org/10.4018/979-8-3693-2889-7>
41. Szrajber, B. E., and Alon, I. (2025). Reconciling qualitative and quantitative approaches within bibliometrics. *Multinational Business Review*, 1-20. <https://doi.org/10.1108/mbr-02-2025-0043>
42. Thoti, K. K. (2024). Exploring the employees behavioral intention towards disruptive technologies: A study in Malaysia. *Human Resources Management and Services*, 6(1), 3399. <https://doi.org/10.18282/hrms.v6i1.3399>
43. Vial, G. (2021). Understanding digital transformation: A review and a research agenda. *Managing Digital Transformation*, 13-66. <https://doi.org/10.4324/9781003008637-2>
44. Volkova, A. A., Nikitin, Y. A., and Plotnikov, V. A. (2022). Digital transformation of procurement logistics. *Economics and Management*, 28(8), 778-785. <https://doi.org/10.35854/1998-1627-2022-8-778-785>
45. Wang, H. (2025). A study on the impact of digital transformation on employee relations in listed companies. *Human Resources Management and Services*, 7(4), 5403. <https://doi.org/10.18282/hrms5403>
46. Wirtz, B. W., and Muller, W. M. (2023). An integrated artificial intelligence framework for public management. *Public Management Review*, 25(6), 1074-1105. <https://doi.org/10.1080/14719037.2021.1928473>
47. Zhang, J., and Chen, Z. (2024). Exploring human resource management digital transformation in the digital age. *Journal of Knowledge Economy*, 15(1), 1482-1498. <https://doi.org/10.1007/s13132-023-01214-y>