

D2.1 – Emerging Roles and Competences in Innovation Procurement in Intramural Healthcare

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As part of Task 2.1 of the InnoHSupport project, this study aims to encourage more research into healthcare procurement competences, which strongly needs more investigation.

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List of abbreviations

- AI Artificial Intelligence
- CBS Centraal Bureau voor de Statistiek
- CSR Corporate Social Responsibility
- D/AE Digital/Automation Expert
- EC European Commission
- EU European Union
- HCP Healthcare Professional
- HRM Human Resource Management
- 14.0 Industry 4.0
- OADR Old Age Dependency Ratio
- OECD Organisation for Economic Co-operation and Development
- PSM Purchasing & Supply Management
- SBP Strategic Business Partner
- SPP Sustainability in Public Procurement



Executive Summary

Purpose

This study identifies skill profiles for specific healthcare innovation procurement situations by uncovering emerging roles through expert interviews and mapping required competencies via the ProcurCompEU Framework. It contributes to procurement competency literature by applying this framework in a healthcare-specific academic context, paving the way for future research. The identified roles and competencies can support training future healthcare procurers and developing procurement departments.

Methodology

21 experts in the field of healthcare innovation procurement were interviewed, after which interview were transcribed and analysed. The study applied a combination of inductive thematic analysis for the identification of future roles and deductive analysis for investigating each role's associated ProcurComp^{EU} competences.

Most important findings

Six future roles and associated ProcurComp^{EU} competences were identified: Strategic Business Partner (SBP), Digital/Automation Expert (D/AE), Innovation Matchmaker, Sustainability Coordinator, Data Engineer, and Innovation Coordinator. Each role possesses distinct competency requirements, with four competences being identified as fundamental and necessary for all roles due to innovation procurement's explorative and uncertain nature.

Conclusions and main recommendations

Innovation sourcing in intramural healthcare requires strategically differentiated procurement roles with distinct competencies. Healthcare organisations are advised to adopt tailored versions of the six identified roles, adapted to their specific organisational objectives and context. The associated competency profiles offer practical guidance for role development, recruitment, and training to better support innovation efforts.



1. Introduction

Many advanced economies, like the Netherlands, are undergoing significant demographic changes, characterised by population ageing and persistently low birth rates (Eggink et al., 2017, p. 63; Kis et al., 2017). These shifts have led to a growing Old Age Dependency Ratio (OADR) – the proportion of individuals aged 65 and over relative to those aged 20-65 – which has reached 34.4% in 2023 and is projected to increase to 45.1% in 2040, according to the Dutch Central Bureau of Statistics (CBS, 2024). These demographic developments strain the public systems, particularly the healthcare system, which is experiencing increased demand.

Advances in healthcare (Mathers et al., 2015) and other life expectancy-extending factors, such as rising GDP per capita (Murthy et al., 2021) and reduced exposure to risk factors (Mathers et al., 2015), have led to a growing proportion of individuals aged 65 and over that is simultaneously more prone to chronic illnesses (Stephan et al., 2022) and suffers increasingly from multimorbidity (Souza et al., 2021). These are among the strongest predictors for increased healthcare needs, intensifying the demand for healthcare services (Maynou et al., 2023).

Concurrently, this escalating demand is met with critical shortages of Healthcare Professionals (HCPs) due to the increasing scarcity of labour (Haukipuro et al., 2016; Turner, 2018), further exacerbated by budgetary constraints (Raghupathi & Raghupathi, 2020). Increasing HCP pay to address workforce shortages is not feasible, as healthcare budgets are strained by the ageing population and growing prevalence of chronic illnesses (EC, 2024, p. 67). Despite rising European healthcare expenditures – from 8.4% to 9.9% of GDP between 2013 and 2019 (OECD & EU, 2022, pp. 130-131) – budgetary limitations remain a severe challenge (Martin et al., 2020). As such, alternative strategies for enhancing productivity must be explored and implemented to meet the challenge.

Leveraging technological innovation is recognised as a viable strategy to increase productivity in healthcare (Conceição & Heitor, 2003; Kraus et al., 2021). Improved technological artefacts are likened to improved tools, which make workers more productive (Conceição & Heitor, 2003). In healthcare, such innovations include digital innovations, such as telemedicine and digital patient records (Kraus et al., 2021). These increase operational efficiencies by automating manual tasks, Deliverable 2.1 - InnoHSupport



streamlining documentation, supporting clinical decision-making, and reducing physicians' time spent on administrative tasks, allowing them to see more patients per day (Flessa & Huebner, 2021; Furukawa, 2011). Innovation has long been an effective way to improve healthcare efficacy and efficiency, and is urgently needed to face everyday challenges (den Hertog et al., 2005).

However, innovation is complex and multi-dimensional (Omachonu & Einspruch, 2010). In the healthcare sector, it is particularly challenging due to unique characteristics like the complexity of needs, regulatory hurdles, stakeholder complexity, and restrictive mindsets (Thijssen et al., 2023; Zhang et al., 2024). Public procurement can help overcome these barriers by fostering an environment conducive to adopting new technologies and practices (Coderre-Ball et al., 2021). It can also help by engaging stakeholders to identify their requirements and address unmet needs (Fera et al., 2020). These social aspects of innovation emphasise the boundary-spanning role of the purchaser, which is necessary for success (Sivasubramaniam et al., 2012, p. 803).

Innovation sourcing is challenging for organisations; however, as opportunities often lie hidden in complex, opaque networks, the potential value of innovative solutions is usually tacit and complex to evaluate (Legenvre & Gualandris, 2018, p. 96). Innovation sourcing effectively increases an organisation's innovative performance (Schmelzle & Tate, 2017, p. 488) but differs from 'traditional' costfocused purchasing. As such, innovation purchasers require different skill sets to overcome obstacles effectively (Knight et al., 2014, p. 279).

Organisations' purchasing and supply management (PSM) function has evolved into a human-centric discipline, with human capital becoming strategically important (Stek & Schiele, 2021, p. 1). Personnel's skills, knowledge, and traits within the organisation are considered vital sources of competitive advantage, resulting in organisations becoming increasingly focused on creating, sharing, and applying knowledge (Grant, 1996). Research into PSM skills and competencies is growing, and research in the industrial sector has led to the identification of disparate traits, hard skills, and soft skills necessary for increased PSM performance, such as technical skills, interpersonal skills, enterprise skills, and strategic business skills (Delke, 2022, p. 9).

As the PSM function evolves and professionalises, it also differentiates (Stek & Schiele, 2021, p. 1). Depending on the organisation's strategies and goals, PSM professionals will have different goals, targets, focuses, or objectives (Stek &



Schiele, 2021, p. 1). Innovation-focused purchasing, for example, benefits from different skills than cost-focused purchasing, with little overlap in skillset profiles (Knight et al., 2014, p. 279). Differences in specific purchasing situations and internal cross-functional partners have led to the development of several roles for purchasers, each requiring a different skill set (Schiele, 2019, p. 53). These roles facilitate organisational development towards higher maturity levels (Delke, 2022, p. 126).

Although public procurement is widely recognised for incentivising supplying firms' innovative activities, research on the competencies and roles of innovation sourcing within the semi-public healthcare procurement context lags (Stek, 2021, p. 89). So far, most research on PSM innovation skills has been focused on industrial procurement. Data from public procurement has at times even been thrown out because it deviated significantly from private procurement (Stek & Schiele, 2021, p. 6). The roles and competencies that work in an industrial PSM setting might not transfer to the healthcare PSM setting, as the differences are significant, e.g., higher levels of regulations (Kubra Kaya, 2021), public scrutiny (Geropoulos et al., 2024), different objectives (Gavurová et al., 2021), and complex decision-making systems (Geropoulos et al., 2024).

There is little research on the skill requirements for innovation in public and healthcare PSM. This oversight has left a significant gap in the literature. Addressing this gap could enhance understanding of the skills required for innovation in procurement and their alignment with purchaser competencies. Such alignment is crucial for improving efficiency and innovation performance, which is essential to tackling the pressing challenges in the healthcare sector.

This study, as part of Task 2.1. of the InnoHSupport project, investigates the future roles and competencies needed for procurement professionals to source and implement innovations effectively in intramural healthcare. It uses the ProcurComp^{EU} framework developed by the European Commission (EC) (EC, 2020) to study the associated competencies and is one of the first to apply this framework for academic purposes. This framework offers a generalised reference framework of public procurement competencies, intending to professionalise public procurement by standardising skillsets and making it easier for organisations to align procurement practices with organisational objectives. This makes the framework fit well in this research, due to its semi-public procurement context. It offers a structured yet concise overview of relevant procurement



competences across multiple proficiency levels, enhancing practicality compared to other frameworks and facilitating the future use of the research outcomes in the development of training programs.

This study focuses on intramural healthcare. This describes those organisations where care and cure are delivered within the walls of these specific healthcare organisations, as opposed to extramural healthcare that is more focused on athome or hospital-at-home situations. Intramural organisations, most typically hospitals, are seen as prototypical due to their relative organisational and operational complexity (Adler et al., 2003), and insights derived from such environments hold broader relevance across the sector. As such, the developments that take place in such organisations merit considerable interest. This study, therefore, seeks to answer the following research question:

"Which future roles and associated competencies will emerge within the procurement of innovations in intramural healthcare?"

To better understand the main research question, two sub-questions have been formulated, which will facilitate providing a comprehensive answer:

Sub RQ1: What new roles will emerge in the procurement of innovations in intramural healthcare?

Sub RQ2: *Which competencies are required for innovation sourcing in intramural healthcare?*

A literature review was conducted to explore topics related to the research question and gather relevant insights. It covers several areas that help build the framework, including healthcare innovation and sourcing, procurement competencies and roles, and evolving requirements for innovation sourcing. Next, the paper outlines the research methodologies, presenting the design and justifying the chosen data collection and analysis approaches. Following this, the results and findings will provide a clearer understanding of the skills needed for innovation sourcing and the emerging new roles.



2. Literature Review

2.1 Healthcare innovation and innovation sourcing

Innovation has been described as the primary driver of progress, having significant relevance for each economic system level, ranging from single business units to entire economies (Schumpeter, 1934). Schumpeter (1934) described innovation as any change in the mode of production, manufacturing of new products, company structures, or entry into a new market and as the 'creative destruction' that underlies all advances. A generally agreed-upon definition of innovation does not exist, however, and different fields of research use different variations (Flessa & Huebner, 2021). Likewise, different sectors of the economy also warrant different definitions. Manufacturing sectors take a different approach to innovation than service sectors, such as healthcare, do (Rajapathirana & Hui, 2018).

According to Rajapathirana and Hui (2018) manufacturing knows product and process innovations; however, in the service sector, the distinction between product and process often becomes ambiguous, thus warranting a different definition. Specifically for the healthcare sector, Thakur et al. (2012) formulated innovation as "Those transformative changes that enable healthcare practitioners to centre their attention on the patient, enhancing the efficiency, speed, quality, and cost-effectiveness of healthcare professionals". Such innovations include new and improved health policies, practices, systems, products and technologies, services, and delivery methods that result in improved healthcare (Kimble & Massoud, 2017).

The literature has long discussed comparisons between public and private procurement (Stek, 2021, p. 93). Despite apparent differences, scholars have explained that public procurement can learn from private procurement practices (Stentoft Arlbjørn & Vagn Freytag, 2012; Thomas, 1919). According to Stek (2021, p. 93), a first lesson that might be learnt from private procurement for innovation sourcing in public procurement is to search for completely new technologies and sources of knowledge outside of the existing supply network (Johnsen et al., 2012, p. 12) and to look beyond immediate requirements (Legenvre & Gualandris, 2018, p. 97). PSM teams should explore external opportunities beyond first-tier suppliers to access or co-develop innovative solutions and benefit from more radical innovation (Legenvre & Gualandris, 2018, p. 97 & 101). Radical or discontinuous Deliverable 2.1 - InnoHSupport



innovation – as the terms are found to overlap significantly (Kovacs et al., 2019) – is urgently needed due to the complexity of problems the healthcare sector faces (Berry, 2019). Therefore, this research focuses on radical or discontinuous innovations. Discontinuous innovations are *"the regenerative capability that allows firms to move away from previous change practices towards new dynamic capabilities"* (Picaud-Bello et al., 2019, p. 9).

The process of innovation is a lengthy and complex interactive process that combines resources, people's talent, skills, and knowledge (Akenroye, 2012). Many frameworks have been proposed to describe the general innovation process, such as by Varkey et al. (2008) who described six stages of innovation: problem identification & idea generation, idea evaluation, development, first use, commercialisation, and diffusion. For healthcare organisations, Fleuren et al. (2004) describe four consecutive main stages: dissemination, adoption, implementation, and continuation. Critical are the adoption and implementation stages. In the adoption stage, the potential user initially acquires and processes information about the innovation and decides whether to accept and use the innovation (Fleuren et al., 2004). Afterwards comes the implementation stage, in which the innovation is put into daily practice by the (healthcare) professional (Fleuren et al., 2004). Positively influencing the transition from stage to stage is imperative for an innovation to be successful (Fleuren et al., 2014).

In the last decades, the innovation process has gone through significant changes. The 'internal' innovation process of corporate R&D in a vertically integrated commercialisation structure (West & Bogers, 2014) has shifted towards a more 'external' innovation process, where an organisation relies heavily on outside sources for ideas and technologies, such as suppliers, start-ups, customers, competitors, universities, or other public research centres (Lee & Schmidt, 2017; Roper et al., 2008, p. 962). In healthcare, most innovations originate from suppliers, who are widely recognised as key sources of innovation due to their in-depth understanding of buyers' needs and their established systems for knowledge transfer (Henke Jr & Zhang, 2010). Suppliers possess a set of clustered skills, technologies, ideas, and capabilities that an organisation can learn from to improve their innovative performance and become more successful (Yang et al., 2023). As such, accessing and acquiring innovations from suppliers has become a main focus of organisations in most industries (Yang et al., 2023).



The increasingly outward focus of organisations on innovation has led to the advancement of a new paradigm, which Chesbrough (2003) called open innovation. Open innovation is defined as "(...) encouraging and exploring a wide range of internal and external sources for innovation opportunities, consciously integrating that exploration with firm capabilities and resources, and broadly exploiting those opportunities through multiple channels" (West & Gallagher, 2006, p. 320). It is a broad concept, with an emphasis on co-creation and co-development activities with external market participants such as suppliers and end-users (Schmelzle & Tate, 2017, p. 479).

Related to open innovation is a phenomenon called *'innovation sourcing'*, which is a more narrow topic, focusing specifically on the upstream acquisition of knowledge and its subsequent integration (Schmelzle & Tate, 2017, p. 479). With innovation sourcing, organisations aim to acquire critical knowledge from external (upstream) partners and incorporate it into their product or service offerings to enhance value for the customer and improve organisational performance (Schmelzle & Tate, 2017, p. 478). Innovation sourcing is defined as the acquisition and integration of beneficial knowledge from the supply base to enhance the organisation's innovation performance (Schmelzle & Tate, 2017, p. 479). R&D activities are increasingly being shared among supply networks, similar to the global division of labour in manufacturing and logistics (Chesbrough & Crowther, 2006, p. 229; Schmelzle & Tate, 2017, p. 480). This joint innovation collaboration has become vitally important due to the increasing complexity of products, services, and processes (Schmelzle & Tate, 2017, p. 480).

Schmelzle and Tate (2017, p. 488) propose a conceptual framework for innovation sourcing in which innovation sourcing is shown to influence the firm's innovation performance positively. This model has three dimensions of innovation sourcing, all of which show a positive influence on an organisation's innovation performance: external knowledge integration, internal knowledge integration, and innovation propensity.

The External Knowledge Integration dimension refers to the effective utilisation and leveraging of externally provided ideas and solutions to improve the product, service, or process and can be categorised into three areas (Schmelzle & Tate, 2017, p. 488). The first area, concerning searching, scouting, and planning, focuses on establishing fresh new ties with organisations outside the established supply base (Schmelzle & Tate, 2017, p. 489). The second area, concerning external



collaboration and knowledge exchange, focuses on developing collaborative ties with existing suppliers, mainly the most innovative organisations (Schmelzle & Tate, 2017, p. 489). The third area relates to interactive learning processes and the ability of the organisation to integrate external knowledge into the focal organisation (Schmelzle & Tate, 2017, p. 488).

The Internal Knowledge Integration dimension refers to an organisation's ability to adapt technologies to local markets, supply chains, and firm-specific factors and to adjust its technological base to integrate external knowledge effectively (Schmelzle & Tate, 2017, p. 491). It involves two main categories, the first being the Internal Knowledge Absorption Process, which includes routines and administrative processes that enable knowledge integration and use (Roper et al., 2008; Schmelzle & Tate, 2017, p. 491). The second category is Knowledge Resource Management and Cross-Functional Integration, which is about having adequate knowledge management policies and governance structures in place to facilitate effective internal knowledge sharing and providing sufficient resources for coordination and innovation sharing (Cuijpers et al., 2011; Schmelzle & Tate, 2017; Song et al., 2010; Van De Vrande et al., 2006).

The third and final dimension is Innovation Propensity, which refers to the organisational inclination to actively seek, acquire, and exploit new ideas from external entities to bolster internal innovation processes (Schmelzle & Tate, 2017, p. 493). One of two central aspects of this dimension is the organisation's culture, specifically the cultural dimension related to the openness to innovation sourcing (de Brentani & Kleinschmidt, 2004). The second central aspect refers to a shared understanding of the innovative value of external ideas and embracing external knowledge (Schmelzle & Tate, 2017, p. 494). In conclusion, these 3 dimensions contribute to improved innovation performance and ultimately enhance organisational performance (Schmelzle & Tate, 2017, p. 496).

There are several challenges that healthcare procurement professionals face that inhibit the implementation of innovation sourcing, however. Healthcare procurement makes up a sizeable component of healthcare expenditure, often accounting for as much as 30-40% of a hospital's budget (Miller & Lehoux, 2020, p. 5). Pressure from various stakeholders presents a challenge, as each seeks to increase the allocation of procurement resources to achieve their objectives (Miller & Lehoux, 2020, p. 5). Furthermore, concerns have been raised that the rigidity of public procurement rules, along with the pressure to cut costs and



prioritise volume aggregation—such as through Group Purchasing Organisations (GPOs) or Centralised Purchasing Bodies (CPBs)—disadvantages innovative products (Miller & Lehoux, 2020, p. 5).

Another challenge is "endogenous institutions," which influence the procurement and use of new or existing technology (Rolfstam et al., 2011, p. 309). In the healthcare context, critical actors are physicians, who are key internal clients in hospitals. Especially for expensive, high-tech products, physicians have preferences and may dispute the potential for consolidating spend within an organisation, significantly impacting product and service choices (Rolfstam et al., 2011). Moreover, not all innovative products procured by healthcare professionals achieve widespread use due to the challenges of the highly complex innovation adoption and implementation process (Flessa & Huebner, 2021, p. 2; Moullin et al., 2015, p. 2). For these reasons, among others, innovative procurement, as well as collaborative innovation, including all relevant stakeholder groups, are still the exception, not the norm (Andrews et al., 2023, p. 3).

2.2 Changing requirements for innovation sourcing

The field of PSM research is evolving, professionalising, and differentiating (Stek & Schiele, 2021, p. 1). The research on competencies, skills, and knowledge in PSM research also knows a robust trajectory (Bals et al., 2019, p. 1). At the same time, some developments require taking stock of current and future PSM competency requirements (Bals et al., 2019, p. 1). With the growing empirical and conceptual importance of the PSM field, the amount of PSM objectives has grown, leading to a shift from operational towards strategic activities (Stek & Schiele, 2021, p. 5). The increased focus on strategic activities such as innovation sourcing (Schiele, 2012), handling supplier disruptions (Wieland et al., 2016), sustainability (Schulze & Bals, 2020), and technological workplace changes such as digitalisation and more broadly, the advent of 14.0 (Delke et al., 2023) are all challenging previous assumptions about what competencies and roles PSM functions require (Bals et al., 2019, p. 1).

The transition from 'clerical' to strategic purchasing has led to changes in skill requirements (Stek & Schiele, 2021, pp. 3-5). Procurement was traditionally expected to deliver the right product, at the right time, with adequate quality, and at the lowest possible cost. The earlier PSM research stream thus suggested that competencies such as contracting and order placing were most important for PSM Deliverable 2.1 - InnoHSupport



performance. However, PSM evolved to include other, more strategic objectives that purchasers must fulfil. The more recent literature resultingly emphasises the importance of supplier management, SCM, and strategic decision-making competencies (Stek & Schiele, 2021, pp. 3-5).

Similarly, public and healthcare procurement are moving beyond their traditional focus on cost containment and volume-based transactions toward a more strategic role. Public procurement professionals and researchers currently prioritise topics such as sustainable practices, efficiency, value for money, compliance, and innovation (Walker, 2015, p. 142). Furthermore, chief trends include centralisation and unification of requests launched by contracting authorities, increased focus on sustainability in public procurement (SPP), and usage of emerging technologies to modernise public procurement (Mircea et al., 2022, p. 63355). Within healthcare procurement specifically, current research themes include supply certainty & disruption (Enayati & Ozaltın, 2024; Flynn et al., 2024; Zhou et al., 2023), procurement centralisation (Ferraresi et al., 2021; Ke et al., 2024), SPP & Corporate Social Responsibility (CSR) (Chiarini et al., 2017; Torkki et al., 2024), Value-Based Procurement (Meehan et al., 2017), and innovation (Haukipuro et al., 2016; Miller & Lehoux, 2020). In practice, these developments pose challenges to the organisation of healthcare procurement (Beske-Janssen et al., 2023, p. 1).

Innovation sourcing is one of these developments that are increasingly important in healthcare procurement. It differs from traditional procurement, however, and its implementation is fraught with challenges resultingly (Selviaridis et al., 2023, p. 2). Where necessary, organisational characteristics and architecture need to change in order to implement it effectively (Selviaridis et al., 2023, p. 2). Furthermore, PSM professionals who engage in innovation sourcing require different skill sets, leading to the emergence of new PSM roles (Edler & Yeow, 2016). Such changes have been observed already in industrial purchasing, and the research stream to identify emerging innovation skills and roles has started to develop (Stek & Schiele, 2021). Research on those emerging innovation procurement skills and roles in public & healthcare contexts is currently lacking, however. Therefore, further studies are needed to explore the skills required for innovation sourcing in healthcare procurement and whether new roles emerge.



2.3 Procurement competencies & roles

2.3.1 Healthcare PSM competencies

Competence is recognised as a key factor in achieving superior performance and competitive advantage (Derwik & Hellström, 2017, p. 200). Personnel's skills, knowledge, and traits within an organisation are vital sources of competitive advantage, resulting in organisations becoming increasingly focused on creating, sharing, and applying knowledge (Grant, 1996). Procurement has become more technical and specialised, requiring certain competencies (Pettersen et al., 2020).

The terms "skills," "competencies," and "knowledge" are often ambiguously defined (Bals et al., 2019, p. 2). Le Deist and Winterton (2005, p. 29) highlight this conceptual confusion, stating that the concept of 'competence' engenders such confusion and debate that it is impossible to come to a definition that reconciles all the varying ways in which the term is used. For this research, the terms 'competency' (single) and 'competencies' (plural) are adopted in a similar vein to Bals et al. (2019) to ensure consistency. These terms encompass the broad spectrum of PSM job requirements, including knowledge and skills (Bals et al., 2019, p. 2), and build upon similar studies in the fields of PSM, Supply Chain Management (SCM) and Human Resource Management (HRM) (Derwik & Hellström, 2017). Consequently, to obtain a broad view of competencies, this research takes the same holistic approach as Bals et al. (2019, p. 2), which is that competency models refer to collections of knowledge, skills, abilities, and other characteristics needed for effective performance in the jobs in question, in this case, healthcare PSM jobs.

In public procurement, a lack of purchasing competencies is noted at the operational level, and questions are raised about purchaser competence at the senior level, implying a need for a deeper understanding of public procurement competencies (Pettersen et al., 2020). This is evident in the literature, where research on public procurement competencies remains underdeveloped. Most research focuses on private procurement, giving the public sector minimal attention (McKevitt et al., 2012). Despite similarities in supply demands, public and healthcare procurement deviate from private procurement as they are subject to unique complexities. While some authors cautiously state that public and private procurement competencies might be more similar than expected (for example Stek (2021, p. 108)), insufficient research has been done to affirm these statements and more studies are required.



Public procurement is widely recognised as a powerful tool for incentivising innovation, particularly in sectors like Healthcare. Procurement decisions significantly impact healthcare service delivery, patient outcomes, and system efficiency. Innovation procurement, through mechanisms like PCP and PPI, effectively drives market-driven solutions to key healthcare challenges (Edquist & Zabala-Iturriagagoitia, 2020, p. 600). However, healthcare procurement faces unique challenges due to the complexity of needs, regulatory hurdles, stakeholder complexity, and resistance to change (Thijssen et al., 2023; Zhang et al., 2024). Healthcare procurement professionals must, therefore, possess a specific set of innovation competencies to perform effectively.

Among the first to research public procurement competencies for innovation is Stek (2021), who states the need for public innovation purchasers to act as strategic business partners and finds several current and future competencies that purchasers require. The public innovation purchaser should be persuasive, visible to internal clients, able to find the 'real need', able to manage change processes, advocate and create commitment for innovation, and be proficient in communication, networking, and presentation skills (Stek, 2021, p. 103). Furthermore, a central part of innovation buying success lies in the purchaser's entrepreneurial behaviour, who must be courageous, proactive, persistent, creative, and think outside the box (Stek, 2021, p. 103). Future purchasers should also know about digitisation and sustainability, be able to conceptualise a clear vision, and translate it into practice (Stek, 2021, p. 103).

The healthcare sector is one of the most regulated sectors, with strict requirements regarding procuring and using medical devices, medication, and other technologies. Regulatory expertise is critical to ensure compliance and foster innovation through enabling collaboration with innovative suppliers, many of whom may lack the expertise needed to adhere to healthcare-specific regulations (Uyarra et al., 2014, p. 634). Additionally, the ability to foster innovation through developing performance-based specifications is particularly important in resource-constrained healthcare systems (Edler & Yeow, 2016).

Healthcare procurement involves engaging with various stakeholders, including suppliers, patients, physicians, and policymakers. To do so effectively, procurers require negotiation, co-creation, and conflict resolution competences to align interests and achieve shared goals (Miller & Lehoux, 2020, p. 8). Furthermore, understanding the market and engaging with suppliers is imperative to foster



innovation in healthcare procurement. Certain innovative suppliers, SME's and other non-traditional suppliers can enhance the diversity and inclusivity of procurement, but can be difficult to engage. Healthcare procurers therefore must assess market readiness, identify opportunities for supplier partnerships, and use tools such as Open Market Consultations to source innovative solutions (Edquist & Zabala-Iturriagagoitia, 2020).

2.3.2 ProcurComp^{EU} framework

PSM competencies can be classified in varying ways, and several frameworks have been developed (Beske-Janssen et al., 2023, p. 3). These frameworks can be applied in competence analysis and profiling, for example, when designing job descriptions for recruitment or when seeking out training opportunities for PSM professionals (Beske-Janssen et al., 2023, p. 3; Stek, 2021, p. 90). Schulze et al. (2019, p. 296), for example, propose a model of sustainable procurement competencies based on the work of Le Deist and Winterton (2005). This model has 4 dimensions: 1) cognition-oriented competencies, 2) social-orientated competencies (Schulze et al., 2019, p. 296). Another example is the taxonomy of PSM skills by Stek and Schiele (2021), which categorises PSM skills into 15 factors and provides skillsets and training recommendations for PSM professionals based on purchasing objectives (Stek & Schiele, 2021, p. 11).

A widely cited taxonomy by Tassabehji and Moorhouse (2008) identifies five key procurement competencies: technical skills (TS), interpersonal skills (IS), internal enterprise skills (IE), external enterprise skills (EE), and strategic business skills (SB). These competencies are often grouped into PSM-specific, general management, and inter- & intrapersonal categories (Bals et al., 2019, p. 3). Bals et al. (2019, p. 7) further refine this taxonomy by incorporating additional competencies and forecasting future requirements.

In addition to academic literature, grey sources of information also offer valuable insights. The EC developed ProcurComp^{EU} (see Figure 1), a comprehensive framework, to enhance public purchasing practices (EC, 2020). This framework is aimed at all public procurement practitioners and managers, offering a generalised reference framework of public procurement competencies that professionals can use (EC, 2020, p. 13). It aims to professionalise procurement by standardising skill sets, making it easier for organisations to align procurement

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practices with organisational objectives. The ProcurComp^{EU} Competency Matrix outlines 30 core competencies that public purchasers should demonstrate to perform their jobs effectively, and it divides them into several categories and clusters.



Figure 1: ProcurCompEU Cluster of Competences (EC, 2020, p. 28)

In essence, ProcurComp^{EU} consists of two primary categories: procurementspecific competencies and Soft competencies. The Procurement Specific category addresses the technical and procedural dimensions of procurement across the Pre-Award, Horizontal, and Post-Award competency clusters. The Soft Competence category consists of the Personal, People, and Performance competence clusters, which are essential for collaboration, leadership, and strategic decision-making. The framework details all 30 competencies per cluster (see Table 1) and defines these competencies across four proficiency levels: Basic, Intermediate, Advanced, and Expert, providing a pathway for growth depending on diverse roles, situations and contexts. As such, the ProcurComp^{EU} framework offers a structured model and provides other tools that allow it to help identify and structure various procurement roles and related tasks that are needed in a procurement team (EC, 2020).



Category of competence	Cluster of competences	Competence
Procurement specific competences	Horizontal	 Planning Life-cycle Legislation e-Procurement and other IT tools Sustainable procurement Innovation procurement Category specific Supplier management Negotiations
	Pre-award	 Needs assessment Market analysis and engagement Procurement strategy Technical specifications Tender documentation Tender evaluation
	Post-award	16. Contract management17. Certification and payment18. Reporting and evaluation19. Conflict resolution and mediation
Soft competences	Personal	20. Adaptability and modernisation21. Analytical and critical thinking22. Communication23. Ethics and compliance
	People	24. Collaboration 25. Stakeholder relationship management 26. Team management and Leadership
	Performance	27. Organisational awareness28. Project management29. Business and performance orientation30. Risk management and internal control

Table 1: Overview of the 30 competences contained in the ProcurCompEU Competency Matrix (European Commission, 2020, p. 29)

The ProcurComp^{EU} framework is not a one-size-fits-all framework. It is meant to be adapted to the various environments, contexts, and organisational structures in which procurers operate (EC, 2020). For the healthcare sector, a specialised adaptation is required due to the unique complexities relating to regulatory hurdles, stakeholder complexity, and the need to balance several objectives such as cost efficiency, sustainability, innovation, and patient-centred outcomes. Research is ongoing to adapt the framework for various purchasing situations. For instance, the InnoHSupport project uses it to examine healthcare innovation



sourcing competencies, creating a version tailored for healthcare buyers of innovation.

The ProcurComp^{EU} framework offers several advantages over academic competency frameworks. Its competency matrix, consisting of 30 competencies, provides a structured yet concise overview of required competencies across various proficiency levels. Additionally, it allows for adaptation to different purchasing roles and contexts, and provides pathways for professional growth. The framework has already been implemented in several EU member states, such as Estonia, Malta, Romania, and Slovenia, where it has proven effective in helping contracting authorities identify competency gaps and prioritize impactful training, demonstrating its practical utility. For these reasons, the ProcurComp^{EU} is chosen as the foundation for competency research in this study.

2.3.3 Roles

Individual competencies can be categorised using different frameworks, such as those described previously (Le Deist & Winterton, 2005; Schulze et al., 2019; Stek & Schiele, 2021; Tassabehji & Moorhouse, 2008). These frameworks can be abstract, however, and applying these in practice could be somewhat challenging, as required skills and competencies can vary according to purchasing situation (Knight et al., 2014, p. 279), and according to prevailing organisational objectives (Stek & Schiele, 2021). Stek and Schiele (2021) investigated which skillsets PSM professionals required depending on the prevailing objectives of their organisation. It tested 7 different organisational objectives, for example, cost reduction, quality, and innovation objectives, and has shown that for each objective a different, adjusted skillset is necessary (Stek & Schiele, 2021, p. 2). This feeds into the further differentiation taking place in the PSM field.

Specific skillsets being required for specific PSM objectives implies that a general type of purchaser might not exist, but that there are multiple differentiated types of purchasers (Stek & Schiele, 2021, p. 2), or in other words, multiple roles. Multiple terms are used in the PSM literature to describe a role (Delke, 2022, p. 118), such as profiles of buyers (Faes et al., 2001), job profiles (Mulder et al., 2005), or purchasing roles (Schiele, 2019). From a sociological perspective, a role is defined as the sum of expectations of a person's social behaviour, a socially provided pattern of



behaviour that can or must be performed in certain situations¹ (Goldberg & Schiele, 2021, p. 183). From an organisational perspective, a role is an informal set of expectations for the actions an employee takes to perform various functions (Goldberg & Schiele, 2021, p. 183). It is different from a 'function', which is more formal and is defined as the responsibilities of an employee, as listed in the job description (Goldberg & Schiele, 2021, p. 183).

Roles are concepts that allow for organisational developments towards higher maturity levels (Delke, 2022, p. 126). They can be used as a mechanism to define and group related responsibilities within a function and allocate specific skills within a structured framework, with each role requiring a specific skillset to carry out assigned tasks (Delke, 2022, p. 118). Important to note is that individual employees can have multiple roles and that one role can be divided among multiple employees (Delke, 2022, p. 118). Larger organisations will likely allocate one role to specialised employees, whereas smaller organisations will likely allocate individual employees to multiple roles (Delke, 2022, p. 126).

The usage of organisational roles has been criticised for potentially leading to higher levels of bureaucracy in organisations (Krantz & Maltz, 1997). Identifying new roles can lead to potentially unmanageable role inflation within departments; therefore, it is important to see role development as dynamic (Delke, 2022, pp. 117-118). This means that existing roles will either be discarded, or the task or skill requirements might change when new roles are implemented based on organisational needs and available technology (Delke, 2022, p. 118; 126). Such developments have been noted in other areas, such as information and communications technology, HRM, and SCM (Delke, 2022, p. 118).

PSM jobs are generally hierarchically organised, with jobs being differentiated by levels of responsibility, e.g., purchasing manager, buyer, assistant buyer, senior buyer (Mulder et al., 2005, p. 192). Additionally, various PSM roles exist as they relate to specific purchasing tasks, for example, roles related to information and communication, management, initial purchasing, and operational purchasing (Mulder et al., 2005, p. 192). The PSM-related research stream has started to define roles more precisely, as the role of purchasers is professionalising and becoming increasingly strategic (Delke, 2022, p. 119). Schiele (2019) identifies 7 purchasing

¹ Translated from German to English by Goldberg & Schiele (2021) from original source Meyer (1998).



roles that form a basis for PSM role research (Delke, 2022, p. 119). These are general PSM roles and include 1) operational procurement, 2) purchaser of direct material/serial purchaser, 3) purchaser of indirect material, 4) public procurement, 5) purchasing engineer, 6) Chief Purchasing Officer (CPO), and 7) other specialised roles such as purchasing controller, supply risk manager, and purchasing human resources agent (Schiele, 2019). This has been expanded upon by several authors, describing additional roles that emerge out of changing objectives of organisations or the introduction of novel technologies (Delke, 2022, p. 119). Goldberg and Schiele (2021) have introduced the Innovation Promoter role, which aims to improve innovation sourcing activities; Schulze and Bals (2020) identify the sustainability officer; and Wehrle et al. (2022) identify the need for the data scientist, especially concerning PSM involvement in new product development (NPD).

Future PSM roles have also been the subject of research. Delke et al. (2023), for example, identify six new roles that will either probably or possibly emerge as the 4th Industrial Revolution (I4.0) unfolds. Similar to Schulze and Bals (2020), they have found that the data scientist is the most likely role to find broad adoption in the future (Delke et al., 2023, p. 11). Two other probable roles in the I4.0 paradigm are the Master Data Manager and the Process Automation Manager (Delke et al., 2023, pp. 11-12). Furthermore, three less likely though possible roles identified in the study are the Supplier Onboarding Manager, System Innovation Scout, and Legislation Specialist (Delke et al., 2023, p. 12). However, further research is required to match specific purchasing competencies, such as those identified by Bals et al. (2019), to these newly identified roles (Delke et al., 2023).

Like the research stream on public PSM competencies, there is an apparent lack of research on public and healthcare PSM roles. Explorative research by Stek (2021) identifies competencies for public procurers of innovation but does not specify competence profiles that can be seen in isolation from the paper's context (Stek, 2021, p. 111). More research on public procurement competency profiles and roles is needed, including within specific contexts, such as innovation and sustainability.



3. Methodology

3.1 Research design: Exploratory research using a qualitative method

This exploratory research employed a qualitative approach, combining inductive and deductive analyses to assess future roles and associated competency requirements for innovation purchasers in the intramural healthcare sector. Given the underexplored nature of role differentiation and skill requirements in healthcare innovation procurement, combining inductive and deductive approaches was most suitable to uncover nuanced professional insights, capture lived experience, inductively build new conceptual categories, and deductively align them with an established competency framework. The inductive thematic analysis is used to identify future roles emerging from practice, as conceptual categories in the form of roles are yet to be built due to the underexplored nature of the research stream. The deductive analysis is used to map the required competencies of these roles to the categories and descriptions of the ProcurComp^{EU} framework, extending and specifying its relevance to the healthcare innovation context (EC, 2020).

It will use semi-structured interviews to collect data from participants who are experts in the field of innovation sourcing in healthcare. Using semi-structured interviews is typical as the first phase of research (Schiele et al., 2022, p. 281). This research uses a different method than most other studies in the PSM roles & competency literature stream, where methods such as the Delphi study (Delke et al., 2023) and the Research World Café (Goldberg & Schiele, 2021) are more commonly used. Semi-structured interviews offer increased scheduling flexibility, enabling more potential participants to participate in the research.

The results of this exploratory research can serve as input for future research in the field of PSM roles and competencies, paving the way for quantitative testing and validation of the findings in further steps (Schiele et al., 2022, p. 286). For this research, a grounded theory approach will be used. In grounded theory, data collection and analysis are iterative in that early data analysis informs later data collection (Adeoye-Olatunde & Olenik, 2021, p. 1362). The interview transcripts will be coded and analysed using Atlas.Ti. The competencies found in the data will be critically analysed and attached to competence descriptions given by the



ProcurComp^{EU} framework, giving the discovered roles and attached competencies a practical foundation.

3.1.1 Semi-structured interview

The semi-structured interview is an in-depth interviewing technique where the respondents answer open-ended questions (Jamshed, 2014, p. 87). The method permits interviews to be focused while still allowing the researcher to explore emerging and pertinent themes that may come up during the interview (Adeoye-Olatunde & Olenik, 2021, p. 1358). It is a preferred method of research when the goal is to understand the participant's unique perspective better (Adeoye-Olatunde & Olenik, 2021, p. 1361). This method is appropriate for addressing more complex social-behavioural research questions (Adeoye-Olatunde & Olenik, 2021, p. 1361).

A semi-structured interview often entails an interview guide with open-ended questions aimed at addressing the research objective (Adeoye-Olatunde & Olenik, 2021, p. 1362). These main questions are supported by follow-up probe questions for the interviewer to refer to during the interview (Adeoye-Olatunde & Olenik, 2021, p. 1362). The interview guide is not to be read verbatim in the same order with each interview but is meant to provide structure and focus with each interview's unique natural flow, allowing for flexibility and adaptation (Adeoye-Olatunde & Olenik, 2021, p. 1362). Nevertheless, an interview guide is essential for ensuring reliable and comprehensive data collection (Maxwell, 2008, p. 336).

The interview guide serves as the foundation for the interview protocol. The protocol serves as the roadmap for the interviewer, describing the entire interview process from initial greeting to final farewell (Castillo-Montoya, 2016). According to Rabionet (2011, p. 564), crafting an interview protocol has two important components. The first is how the interviewer introduces oneself, establishes rapport, creates an adequate environment, and elicits reflection and truthful comments from the interviewee. The introduction should include statements of confidentiality, consent, options to withdraw, and use & scope of the results. The second component is the development of main and follow-up probe questions, for which a thorough grasp of the subject matter is pertinent. Appendix A displays the interview protocol.

3.1.2 Interview guide development

It is pertinent to develop carefully considered questions for the interview guide based on the extant literature by applying and adapting previously published Deliverable 2.1 - InnoHSupport



questions that investigate the same construct that is subject to evaluation (Adeoye-Olatunde & Olenik, 2021, p. 1362). The interview guide is divided into two sections. The first section covers general information about the participants, i.e., age, gender, level of education, organisation type, job title, years of PSM experience, innovation sourcing experience, and span of control. These first questions are based on the ProcurComp^{EU} framework and its related tools (EC, 2020). The second section is structured similarly to the literature review, with questions subdivided into three categories. The three categories cover the extent to which innovation sourcing is applied in practice, what challenges lie ahead, and what roles and associated competencies the participants foresee in ten years. The questions are based on existing literature on roles and competencies in other fields, e.g., education, and adapted where necessary.

The first category of questions relates to healthcare purchasers' application of innovation sourcing. This will explore how innovation sourcing is understood by experts, to what extent innovation sourcing is applied in practice by hospitals, and how that process is organised. This is to ensure intersubjectivity, or a shared understanding of the concept, which is critical for qualitative research to be up to academic standards (Malterud, 1993).

The second category of questions relates to innovation sourcing trends and future challenges. These questions are based on the futures research stream, applying a critical, realistic lens. Critical realism assumes that the future, though not yet comprises multiple possibilities and actualises manifested. through transformative events, meaning that actors can influence the future (Melnikovas, 2018). Social reality consists of observable and non-observable components, making precise scientific prediction impossible (Melnikovas, 2018). Anticipation of the future can still take place, however, based on observation of generative mechanisms, i.e., the underlying forces that drive change (Melnikovas, 2018). Therefore, it is important to understand the drivers of change, such as the challenges faced by innovation purchasers, to anticipate future roles and competencies effectively.

The third category of questions investigates the current and emerging healthcare innovation sourcing roles and associated competencies. These questions aim to address the primary research question. The questions are based on studies in the educator roles and competencies field, as this field has a history of investigating (future) roles and competencies using interviews. Questions from educator



research by Ally (2019) & Oonk et al. (2020), along with inspiration from PSM research by Delke et al. (2023) & Bals et al. (2019), were adapted to align with the goals of this research. The questions will explore the existing roles in innovation sourcing within healthcare procurement, the emergence of new future roles and their associated competencies, as well as the continued relevance of current roles, focusing on how these may need to evolve to remain effective.

3.2 Empirical Research: unit of analysis, data collection, data analysis

3.2.1 Sampling and participant selection

The target group of this research consists of those involved in and orbiting the innovation sourcing process within intramural healthcare organisations and possessing knowledge about purchasing roles and competencies, healthcare innovation sourcing, and future developments in the healthcare sector. In hospitals, such activities are typically carried out by purchasers at the level of strategic purchaser or higher, or by specialised innovation advisers. Therefore, eligible participants must hold at least a strategic purchaser or equivalent innovation adviser position, with a preference for those in senior roles. Additionally, participants should have a minimum of two years of experience in a strategic purchaser or equivalent position to ensure sufficient expertise in innovation sourcing.

A purposive sampling strategy was used to ensure a diverse, information-dense set of professionals with significant experience in healthcare innovation sourcing contexts. Individuals were recruited from hospitals, central purchasing bodies, healthcare networks and innovation partnerships in Western Europe, more specifically The Netherlands, Belgium, Denmark, Spain and Germany. These countries have more advanced healthcare systems, mature procurement processes, and innovation policies, making them more suited to identify future roles and competencies.



Respondent ID	Function	Organisation type	Country	Gender	Education	Innovation experience (years)
R1	Strategic buyer	Hospital	Netherlands	Male	Bachelor	2-5
R2	Director	СРВ	Netherlands	Male	Master	2-5
R3	Strategic buyer	Hospital	Netherlands	Male	Master	2-5
R4	Purchasing adviser	Caregiving organisation	Netherlands	Female	Bachelor	2-5
R5	Strategic buyer	Hospital	Netherlands	Male	Master	2-5
R6	Senior buyer	University hospital	Netherlands	Male	Bachelor	>10
R7	CEO	СРВ	Belgium	Male	Master	>10
R8	Procurement manager	University hospital	Netherlands	Male	Bachelor	6-10
R9	Innovation advisor	Caregiving organisation	Netherlands	Female	HBO Master	2-5
R10	Policy advisor	Caregiving organisation	Netherlands	Female	Master	6-10
R11	Strategic buyer	University hospital	Netherlands	Female	Master	>10
R12	Procurement manager	Hospital	Netherlands	Female	Master	6-10
R13	Supply chain manager	University hospital	Netherlands	Male	Master	>10
R14	Strategic buyer	University hospital	Netherlands	Male	Master	6-10
R15	Regional head of health innovation	Ministry of health	Spain	Female	Medical Doctorate	6-10
R16	Director of construction & facilities	University hospital	Netherlands	Male	Bachelor	6-10
R17	Director of projects	Innovation association	Spain	Female	Master	>10
R18	Senior buyer	University hospital	Spain	Male	Master	6-10
R19	CEO	Innovation association	Germany	Female	Master	6-10
R20	Purchasing adviser	СРВ	Netherlands	Male	Master	2-5
R21	CEO	Healthcare consultancy	Denmark	Male	Associate	>10

Table 2: Overview of respondent background

A total of 21 experts were recruited, as shown in Table 2. Innovation sourcing experience was the precondition for an interview. Respondents are categorised into three sections of innovation sourcing experience: 2-5 years (7 respondents), 6-10 years (8 respondents), and >10 years (6 respondents) of experience. Each

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category consists of roughly a third of all respondents. The respondents' job titles included chief procurement officers, innovation leads, contract managers, and digital procurement experts.

3.2.2 Data collection

Data was collected through semi-structured interviews. All interviews were recorded and transcribed. Preceding the data collection, all participants filled out the consent form to ensure their awareness of the conversations' recording and storage, sharing, and usage. The recordings and related data were shared only with other researchers involved in this research. Data was anonymised to ensure the privacy of the participants. The research team ensured safe storage of the data and discarded transcripts and recordings upon completion of the research project.

Data collection started in February 2025 and finalised in May 2025 when maturity was reached, as no significant new concept categories, i.e. roles, were identified in several sequential interviews. In this period, 21 interviews were conducted, in line with expectations of saturation set out by Hennink and Kaiser (2022). To ensure credibility, triangulation was applied by comparing insights across functions, roles, and organisation types. Role definitions and competency mappings were validated using member checking. Each interview lasted between 45 to 75 minutes, were recorded through secure video-conferencing software (with consent) and transcribed verbatim for the data analysis.

3.2.3 Data analysis

Data analysis took place in two stages: Inductive thematic analysis to identify future roles, and deductive analysis to map competences onto the roles.

Thematic analysis was used to examine emerging innovation procurement roles, as no predefined framework guided respondents' answers. Thematic analysis offers the flexibility to explore emerging themes—future roles in this case—making it well-suited for complex exploratory research (Braun & Clarke, 2006). To ensure rigour, guidelines for thematic analysis developed by Nowell et al. (2017) were followed. Responses were analysed for overlapping descriptions of tasks, responsibilities, expertise, and role names. The researcher assessed these overlaps to group consistent descriptions under a single role or distinguish new roles where divergences occurred. This iterative process refined emerging themes into coherent role profiles.



A deductive approach was used to analyse role-related competencies based on the ProcurComp^{EU} framework. Each of the framework's 30 competencies was converted into a code. As respondents described envisioned roles, they were asked to specify the required skills, abilities, and attitudes. These descriptions were interpreted in the context of their broader responses and mapped to the ProcurComp^{EU} competencies. Mapping was done through researcher interpretation and supported by the Al tool ChatGPT to emulate team analysis (Fife & Gossner, 2024). This enhances accuracy and dampens the effect of confirmation bias (Fife & Gossner, 2024).

4. Findings

The findings of this research are currently confidential due to an ongoing publication process.

Feel free to contact the author to obtain a copy of the Findings chapter. Contact through LinkedIn or directly via E-mail (<u>luclefers00@gmail.com</u>) is preferred. Thanks for your understanding.

5. Discussion

This chapter discusses the findings of this study and their theoretical and practical implications, as well as limitations of the study and potential avenues for further research.

5.1 Theoretical implications

This study set out to answer the research question: "Which future roles and associated competencies will emerge within the procurement of innovations in intramural healthcare?". To do so, the question was subdivided into two subquestions that investigated emerging future healthcare innovation procurement roles (SRQ1) and these roles' associated ProcurComp^{EU} competences (SRQ2). It did so through semi-structured interviews with 21 experts in healthcare innovation, at which point saturation was reached. The interviews were transcribed and analysed inductively using thematic analysis to investigate Deliverable 2.1 - InnoHSupport



overarching themes and identify future roles. Furthermore, deductive analysis was done to identify a set of associated ProcurComp^{EU} competences for each Future role, showing how each role is distinct.

In investigating SRQ1, this study has added to the literature by reaffirming findings from the extant procurement roles and competency research stream, expanding it to include the healthcare sector. it identified 6 distinct future roles for innovation procurement in the intramural Healthcare sector and 3 potential roles, being one of the first to identify specific and distinct innovation procurement-related roles in the healthcare sector. It has strengthened the findings of Knight et al. (2014) regarding different purchasing situations requiring different, distinct skillsets and expanded it to include the healthcare sector. The study has identified several purchasing situations that procurers of innovation face and developed corresponding profiles or role descriptions for procurers who aim to be competent in these situations. Six of these roles will either probably or possibly emerge as innovation in healthcare gains momentum and procurement departments in intramural healthcare organisations professionalise and mature, a process that is still ongoing and much needed in the lagging field of healthcare procurement.

The Strategic Business Partner (SBP) emerged as the most clearly defined role in this study. Its identification builds on the assertion by Stek (2021, p. 103) that innovation purchasers should act as strategic business partners within healthcare. In line with the description of Stek (2021), the SBP excels at relationship-building with internal stakeholders, particularly physicians, who often serve as gatekeepers for introducing innovations. Establishing rapport enables early procurement involvement, which is crucial for navigating the complexities of innovation projects. To secure this early role consistently, the SBP must demonstrate procurement's added value by acting as a proactive facilitator and identifying opportunities and barriers throughout the process. The consistent identification and detailed descriptions of this role by most respondents suggest it is the most likely to emerge and gain traction.

The same applies to the Digital/Automation Expert (D/AE), which was mentioned by over half of the respondents. The identification of this role aligns in part with the expectation set out by Delke et al. (2023) regarding the emergence of an automation manager in procurement, further extending it to the intramural healthcare procurement context. The ongoing digitisation and the introduction of more technological innovations in the healthcare sector will necessitate



specialised procurers intrinsically motivated by and interested in emerging technologies, possessing the knowledge and skills needed to identify and procure solutions that seamlessly integrate into the existing IT systems. This procurer advances digitisation and automates operational processes, creating space for procurers to pursue other strategic objectives, such as sustainability (Schulze & Bals, 2020) and innovation sourcing (Schiele, 2012).

An important support for the D/AE is the Data Engineer, who is the department's expert in adapting data for use in procurement. This role similarly expands the finding by Delke et al. (2023) of the emergence of a Data scientist in procurement to the healthcare sector, and shows the importance of data for innovation. Where the D/AE possesses a basic knowledge of the principles of data, the Data engineer goes beyond and masters the competences of data collection, handling, safe storage, and the laws and regulations surrounding it, including the sharing of sensitive data with suppliers. Effective management and presentation of data facilitates enhanced procurement decision-making. The emergence of this role reflects procurers' expectations of data becoming increasingly vital in procurement and highlights procurement's current lack of expertise in this area. Some respondents suggest this role could emerge outside of procurement, inside the dedicated data department as a procurement liaison, however, this claim cannot be confirmed within the scope of this study.

This study has also reaffirmed the importance of sustainability in conjunction with innovation, as the identified Sustainability Coordinator role operates at the intersection of these two objectives. Building on the work of Picaud-Bello et al. (2024), this role shows procurers' recognition of the growing importance of innovation in increasing sustainability, and of using sustainability principles to stimulate market innovation. The Sustainability Coordinator effectively leverages the power of procurement to achieve sustainability goals by translating sustainability goals into contract award criteria, broadening the scope beyond service level and financial criteria.

Another finding of this study is reflected in the identification of the Innovation Coordinator, who is involved in furthering the implementation and adoption of procured innovations. The adoption and implementation phases of innovations are highly complex and challenging (Flessa & Huebner, 2021; Moullin et al., 2015), but are imperative for an innovation to become widespread in an organisation. The identification of this role indicates that overcoming barriers to adoption and



implementation demands greater effort, likely in the form of a dedicated role. Furthermore, its emergence in a procurement context could indicate that procurers may need to become more involved in these phases of the process. Similar to the Data Engineer, however, respondents suggest that this role could potentially be located in a dedicated innovation department, similar to the way it is organised in several Dutch elderly care institutions.

In identifying the Innovation Matchmaker, the study reaffirms the boundaryspanning role of procurers in Healthcare (Sivasubramaniam et al., 2012). The Innovation Matchmaker engages internal clients to uncover underlying and unmet needs, and can identify opportunities in the market to meet these needs. Such opportunities can often be obscure and hard to identify, since innovation opportunities tend to lie hidden in complex, opaque networks (Legenvre & Gualandris, 2018, p. 96). Using their extensive knowledge of market players' solutions, their capabilities, and other market developments, the Innovation Matchmaker is exceptionally well equipped to overcome this challenge. The description of the Innovation Matchmaker seems closely aligned with the description of the Customer Promoter by Goldberg and Schiele (2021), but adapted to a healthcare procurement perspective. The Innovation Matchmaker is the interface through which internal customers, in this case HCPs, convey their underlying and unmet needs to the market to fill this need with an existing product or to explore codevelopment opportunities.

In answering SRQ2, this study adds to the literature by being one of the first to apply the ProcurComp^{EU} framework to academic study. In applying the framework, different roles were shown to have distinct, albeit rudimentary, competence profiles according to the ProcurComp^{EU} framework. This carefully shows an initial usefulness of the framework for further development of role descriptions and competency profiles. Additionally, it has been shown that the framework, which is meant for public procurement, is also applicable in the Healthcare sector, which in many countries is considered semi-public procurement. Furthermore, competency analysis reinforces the identified roles, as clear differences in required competencies support their distinction. Although the number of identified competencies per role is limited, the minimal overlap between them strengthens the validity of the role differentiation.



5.2 Practical implications

As an exploratory study, this research provides a first step toward the development of a practicable model for healthcare innovation procurement roles. By identifying six future roles and their associated competencies, this study offers a preliminary framework that can guide healthcare organisations in structuring their procurement functions to better support innovation. While the findings do not yet constitute a definitive role model, they offer valuable insights into how procurement departments may begin to differentiate their internal structures and skill sets in response to the increasing demand for innovation.

Healthcare organisations can use these initial role descriptions to reflect on their current capabilities and assess which roles may be relevant to their strategic objectives. For example, appointing or developing individuals in roles such as the Strategic Business Partner or Innovation Coordinator can help secure early procurement involvement, improve internal alignment, and facilitate the adoption of new technologies. Similarly, roles like the Data Engineer or Digital/Automation Expert indicate a need for greater integration of digital tools and data in procurement decision-making.

The competency profiles mapped to the ProcurComp^{EU} framework further enhance the practical usability of the findings. Procurement and HR managers can use these profiles as a starting point for identifying capability gaps, prioritising training needs, and designing future job descriptions. Given the varied levels of maturity across healthcare organisations, these profiles can also support differentiated implementation, ranging from full role adoption in larger organisations to combined or hybrid roles in smaller ones.

Importantly, the findings underscore the need for flexibility. The emergence of roles will depend on contextual factors such as organisational size, innovation ambition, and internal resource availability. The exploratory nature of this research invites further testing and refinement of these roles across diverse healthcare contexts.

In conclusion, this study contributes to the ongoing professionalisation of healthcare procurement by initiating a structured conversation around innovation-oriented roles and competencies. It lays the groundwork for more targeted organisational development and capacity-building efforts aimed at enhancing the role of procurement in driving innovation performance.

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5.3 Limitations and future research

The study identified various roles which could be useful for intramural healthcare organisations that aim to enhance innovation sourcing performance. The large number of identified roles could, however, mean that the outcomes might be more useful for larger purchasing departments than smaller ones, similar to findings by Delke (2022, p. 126).

Furthermore, due to the chosen method of interviews, there were no group dynamics at play during the development of roles, and no consensus was tested. While the methodological choice does not diminish the quality of the findings, some form of quantitative testing of the roles' expected occurrence and expected impact could give them more strength and allow healthcare organisations to prepare their procurement departments more effectively. Additionally, despite efforts to prevent it, researcher bias might have influenced the identification of roles as a result of the inductive nature of this part of the analysis.

Respondents were not asked to familiarise themselves deeply with the ProcurComp^{EU} framework prior to the interview due to practical constraints. Instead, respondents were asked to describe skills, attitudes, and competences required for the identified roles, after which these descriptions were translated into the best-fitting ProcurComp^{EU} competences by the researcher. For further study of the identified roles, a survey among procurers familiar with the framework can be done to assess more accurately and elaborately what the different competence for all future roles. This tests the usability of the ProcurComp^{EU} framework for average professionals, which further helps in evaluating the framework's academic applicability. It also supplies more in-depth skill profiles for each role will for training purposes.

Finally, all respondents in this study are based in EU member states. While this ensures alignment with EU-specific procurement policies and frameworks, such as ProcurComp^{EU}, it limits the generalisability of findings to non-EU contexts where healthcare systems and procurement environments might be less mature. Even among EU members differences in health systems are significant, which could limit applicability in specific cases. Further research should examine innovation procurement roles in non-EU regions to assess global applicability of



the identified roles, and to test the relevance of the ProcurComp^{EU} framework in other settings. Additionally, further research should investigate the emerging model's impact on country-by-country basis, as differences in healthcare systems across countries might affect the impact and occurrence of certain roles, e.g., differences in tender obligation, focus on innovation, and procurement maturity.

For these reasons, future researchers that wish to build upon this research could consider the following avenues, in no specific order: (1) Quantitative testing of the identified future and potential roles to assess expected occurence and impact, (2) assessing impact of identified future roles in specific EU country contexts to assess generalisability across EU, e.g., in Eastern and Southern European nations, (3) in-depth analysis of required proficiency level of all competences for every future role, and (4) assessment of emerging roles in non-Western contexts, with a special focus on emerging economies, to assess necessary innovation procurement roles for different stages of health system maturity.

6. Conclusion

This study set out to explore which future roles and associated competencies will emerge within the procurement of innovations in intramural healthcare. Responding to a growing need for innovation in the healthcare sector, particularly in response to demographic pressures and workforce constraints, the research addressed a notable gap in the literature by focusing specifically on the semipublic procurement context. Through qualitative inquiry involving 21 expert interviews, this study identified six distinct future roles and mapped their associated competencies using the ProcurComp^{EU} framework.

The findings reveal a trend towards increased role differentiation within procurement departments. Roles such as the Strategic Business Partner, Digital/Automation Expert, and Innovation Matchmaker illustrate how procurement professionals are expected to take on more strategic, crossfunctional, and innovation-oriented responsibilities. Each role reflects the evolving demands of healthcare organisations as they seek to integrate



innovation into daily operations while maintaining compliance, costeffectiveness, and stakeholder alignment.

By linking each role to specific ProcurComp^{EU} competencies, this study also provides a foundation for future competency development initiatives. The results underline the importance of soft skills, adaptability, and internal collaboration, as well as technical competencies related to sustainability, digitalisation, and stakeholder engagement.

While exploratory in nature, the study represents a first step towards the development of a structured role model for innovation procurement in healthcare. It encourages both practitioners and scholars to further investigate how such roles can be formalised, developed, and integrated into practice. In doing so, healthcare organisations can strengthen their procurement functions to better support innovation, thereby improving efficiency, service delivery, and long-term resilience in an increasingly complex healthcare landscape.



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Appendix A – interview guide

General information

Based on (EC, 2020)

- 1. What is your age?
- 2. What is your gender?
- 3. What is your level of education?
- 4. Can you describe your organisation and your current function within that organisation?

(Type of hospital/organisation; formal job title)

- 5. How many years of experience in your current job or similar/related jobs do you have? (years of PSM Experience)
- 6. How many years of experience do you have with innovation sourcing? (innovation sourcing experience)
- 7. How many people in your organisation directly report to you/are under your wing? (span of control)

Research questions

Innovation Sourcing process (Malterud, 1993)

- Can you describe what innovation sourcing is? (if not, give them a definition)
- 2. To what extent does your organisation engage in innovation sourcing? (how often; part of organisational objectives; etc.)
- What does the innovation sourcing process look like in your organisation? (Different phases/stages; activities; who is involved; team or individual effort; specific innovation teams/individuals)

Innovation sourcing challenges (Melnikovas, 2018)

- 4. What major challenges do you encounter in innovation sourcing today?
 i. (current challenges)
- 5. Considering future trends, what new challenges do you anticipate?
 - i. (future challenges; considering technological, social, political, organisational, etc. trends)
 - ii. Provide interviewee with examples of trends if necessary, try to be as non-selective as possible



Roles and Competences (Ally, 2019; Bals et al., 2019; Delke et al., 2023; Oonk et al., 2020)

- 6. Do you use the concept of purchasing roles within your organisation? Can you give some general examples?
 - i. (PSM roles, not innovation sourcing-specific)
- 7. What purchasing roles relating to healthcare innovation sourcing can you currently describe?
 - i. (asks about current situation regarding innovation sourcing roles)
- 8. What new future roles might emerge in healthcare innovation sourcing that are currently not used?
 - i. (Considering trends, challenges, etc.)
- 9. What competences should purchasers in these new roles have to be effective?
 - i. (Technical skills, soft skills, procurement specific skills, personality traits, etc.)
 - ii. (Go through each mentioned role)
- 10. What current roles will need to adapt, or should become more mature in the future considering HC innovation sourcing?
 - i. (investigate which roles will change or become more prominent)
- 11. What competences should purchasers in these roles have, or what competences should they gain?
 - i. (Technical skills, soft skills, procurement specific skills, personality traits, etc.)
 - ii. (Go through each mentioned role)

Debriefing

12. As a final question, is there anything that you would like to say, share, or add that has not yet been mentioned?

Appendix B – Consentform

By signing this consent form, I acknowledge the following:

- 1. I have been sufficiently informed about the research through a separate information sheet. I have read the information sheet and have had the opportunity to ask questions. These questions have been adequately answered.
- 2. I am voluntarily participating in this research. There is no explicit or implicit pressure for me to participate in this study. I understand that I can withdraw from the research at any time without providing a reason. I am not obligated to answer any questions I do not wish to answer.



In addition to the above, it is possible to provide specific consent for different parts of the research below.

You may choose to give or withhold consent for each specific part. If you wish to provide consent for everything, you can do so by checking the box at the bottom of the statements.

3. I consent to the processing of the data collected from me during the research as outlined in the attached information sheet.	YES	NO
This consent also includes the processing of data related to my gender, age, membership in organizations, role, and experience.		
4. I consent to audio and/or video recordings being made during the interview and to my responses being transcribed.		
6. I consent to my responses being used as quotes in the research publications (anonymized).		
8. I consent to the research data collected from me being stored and used for future research and educational purposes.		
I consent to everything described above.		

Name Participant:

Name Researcher:

Signature:

Signature:

Date:

Date:

♣ InnoHSupport

Deliverable 2.1 - InnoHSupport