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Trends, Frameworks, and Reference Models in Public Sector Enterprise Architecture: A Systematic Review

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Abstract: Global Trends and Reference Models in Public Sector Enterprise Architecture: A Systematic Review" examines enterprise architecture implementation in the public sector across countries. Enterprise architecture is increasingly used as a strategic instrument to support digital transformation and interoperability, yet existing studies remain fragmented and lack cross-country synthesis. This study aims to identify global trends, reference models, best practices, and challenges in public sector enterprise architecture implementation. The method used is a systematic literature review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses protocol, analyzing 23 peer-reviewed studies published between 2020 and 2025. The results show that The Open Group Architecture Framework (TOGAF) is the most frequently adopted framework and often becomes the basis for localized national models. This study identifies 15 reference models classified into national-level, domain-specific, regional government, and organizational agile models. Successful implementation is influenced by government commitment, inter-agency collaboration, and alignment with digital transformation strategies. The study concludes that enterprise architecture plays both strategic and technical roles in strengthening public governance. For public sector policymakers, the findings indicate that EA initiatives should be supported by clear governance mandates, cross-agency coordination mechanisms, and contextual adaptation of global frameworks to national priorities and institutional capacity.

Keyword: Enterprise Architecture, Public Sector, Systematic Literature Review, Trend.

INTRODUCTION

Enterprise Architecture (EA) has become increasingly important in supporting digital transformation initiatives within the public sector. Governments are required to deliver transparent, efficient, and interoperable public services, yet many still struggle with fragmented information systems and misaligned digital strategies. EA provides a structured mechanism to

integrate organizational strategy, business processes, information systems, and technological infrastructure into a unified framework, thereby supporting coordinated and sustainable digital governance (Ahmad, 2020; Ajer & Olsen, 2018).

The significance of EA implementation has grown globally, driven by increasing demands for efficiency, transparency, and responsiveness in public administration. Developed countries such as the United States, Denmark, and New Zealand have established national EA frameworks to promote standardization and interoperability across government agencies. By contrast, developing countries, including Malaysia and Indonesia, have begun to design EA models tailored to their specific administrative and institutional contexts. While widely adopted frameworks such as TOGAF and Zachman provide general methodological guidance, they are often considered insufficient to fully address the diverse governance structures, policy environments, and socio-political conditions faced by different nations (Agarwal et al., 2017; Dang & Pekkola, 2016; Darmawan et al., 2022; Janssen & Kuk, 2006; Othman et al., 2020; Seppänen et al., 2009; Thirasakthana & Kiattisin, 2021).

From an academic perspective, prior studies on EA in the public sector have provided meaningful insights into benefits, challenges, and implementation practices. However, the existing body of literature remains fragmented and is often limited to single-country analyses or case-specific examinations. Comparative studies that explore EA implementation across different national and institutional contexts are scarce. Furthermore, although various reference models and best practices have been proposed, they are frequently presented in isolation and lack systematic evaluation of their applicability across diverse governance settings.

The urgency of addressing this gap is reinforced by the increasing complexity of public administration, where governments must balance digital innovation with regulatory compliance, institutional constraints, and socio-political dynamics. Without a structured synthesis of existing knowledge, EA implementation risks becoming inconsistent, siloed, or misaligned with broader digital strategies.

This study therefore aims to provide a comprehensive overview of Enterprise Architecture implementation in the public sector through a Systematic Literature Review. Specifically, it seeks to answer the following research questions: (1) What are the prevailing trends in EA implementation across countries, institutions, and frameworks? and (2) What reference models and best practices can support effective EA adoption in the public sector? By applying a systematic review approach based on the PRISMA protocol, this research identifies, evaluates, and synthesizes relevant literature published between 2020 and 2025.

The novelty of this review lies in its integrative perspective. Rather than examining isolated case studies, this study classifies and compares reference models across multiple national and institutional contexts, providing a structured taxonomy of EA implementation approaches. Furthermore, it highlights key success factors and persistent challenges, offering a balanced understanding of both strategic and operational dimensions of EA.

The contributions of this research are twofold. Academically, it consolidates dispersed knowledge, identifies research patterns, and outlines directions for future investigation. Practically, it provides actionable insights for policymakers, public administrators, and EA practitioners in designing sustainable, interoperable, and context-sensitive EA initiatives. Through this systematic synthesis, the study seeks to strengthen the theoretical and practical foundations of EA implementation in the public sector.

METHOD

This study adopts the Systematic Literature Review (SLR) methodology, following the principles outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Originally introduced in 1999, PRISMA was developed as a structured approach to facilitate more efficient and accurate systematic reviews (Moher et al., 2009). Originally introduced in 1999, PRISMA was developed as a structured approach to facilitate

more efficient and accurate systematic reviews (Moher et al., 2009; Page et al., 2021). Since its inception, PRISMA has undergone several revisions and enhancements (Page et al., 2021). This study specifically follows the PRISMA 2020 guidelines, which consist of three main stages: identification, screening, and inclusion (Page et al., 2021). The detailed SLR process adopted in this study is illustrated in Figure 1.

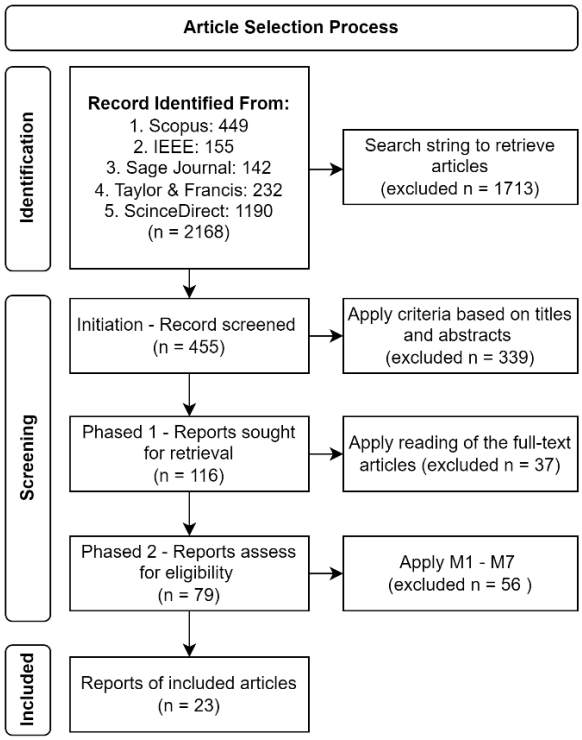

Figure 1. Conducting Review

a) Identification Phase

At the identification stage, the author conducted an initial process to find literature relevant to the research topic. This stage aimed to ensure that the data sources used were from credible, current articles that were relevant to the focus of the study on EA implementation in the public sector. The identification process was carried out systematically by determining the databases to be used, setting the publication time frame, and compiling search keywords tailored to the research questions.

1. Database

   In this phase, the author searched for relevant literature from five reputable databases, namely Scopus, IEEE, Sage Journals, Taylor & Francis, and ScienceDirect, covering a period of the last five years (from January 2020 to July 2025). This approach was intended to ensure the inclusion of high-quality articles, thereby enabling a more comprehensive analysis.

2. Keyword

   In conducting the search article, the author employed a Boolean search strategy using the query: ("Enterprise Architecture" AND ("implementation" OR "adoption" OR "framework" OR "reference model" OR "reference architecture")) AND ("public sector" OR "government" OR "digital government"). This query was designed to retrieve articles that focus on the application of case-based reasoning within the context of government or public services.

b) Screening Phase

During the screening stage, the author conducted an initial screening of articles obtained from database searches. This process involved applying inclusion and exclusion criteria to ensure that only articles that were relevant, of high quality, and in line with the research focus were included in the study.

1. Screening Initiation

   Initially, based on the results of the Boolean search, the author identified a total of 2,168 records from five reputable databases covering the last five years. After applying the search string and removing records that were outside the research scope, 1,713 records were excluded, leaving 455 records for initial screening. The inclusion criteria were as follows: articles published within the last five years (January 2020 to July 2025), article types limited to journal and conference papers, and papers written in English. The exclusion criteria included articles written in non-English languages, inaccessible articles, and duplicate entries. At the end of this initiation phase, a total of 214 articles were obtained.
2. Screening Phase 1

   In the first phase, the author began selecting articles by reviewing their titles and abstracts. The inclusion criteria at this stage required that the titles and abstracts contain information related to implementation trends, identify reference models, and highlight best practices in the public sector. Based on this screening process, 339 records were excluded and 116 reports were sought for retrieval.
3. Screening Phase 2

   In the second phase, the author conducted a full-text review of the selected articles and identified relevant factors based on the research questions. After applying full-text reading, 37 articles were excluded because they did not sufficiently address EA implementation, adoption, reference models, or public sector relevance. Following this process, 79 reports were assessed for eligibility.

c) Inclusion Phase

In the included phase, the author assessed the quality of 79 eligible reports using seven criteria. After applying the M1-M7 quality assessment criteria, 56 reports were excluded. As a result, 23 articles were included as the final corpus for the SLR analysis. These criteria are presented in Table 1.

Table 1. Checklist Criteria

Checklist Criteria	Checklist Statement
M1	Is there a clearly stated research question?
M2	Are the objectives and scope of the research clearly stated?
M3	Is there an identification of EA frameworks, domains, countries, and institutions?
M4	Is there an application of EA reference models that can be utilized?
M5	Are the research findings clearly described?
M6	Are the presented results unambiguous?
M7	Do the conclusions in the article answer the research question?

Based on the quality testing results, the final number of articles used in the SLR was 23 articles. The composition consists of 10 articles from IEEE, 4 articles from Scopus, 2 articles from Taylor & Francis, 1 article from Sage Journal and 6 articles from ScienceDirect.

RESULTS AND DISCUSSION

From the 23 articles that have been selected through the SLR method, the author visualizes the distribution of these articles in the form of a graph, as shown in Figure 2.

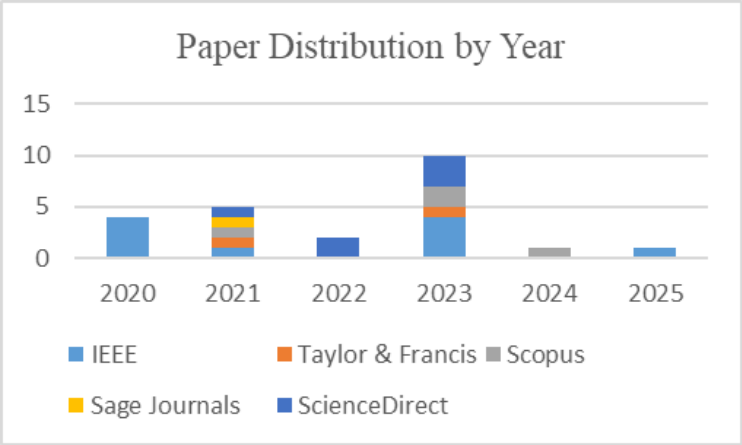

Figure 2. Publication Year Distribution of Reviewed Articles

Figure 2 presents the distribution of publications by year and database. The earliest contributions appeared in 2020 with four articles; all indexed in IEEE. In 2021, the number of publications slightly increased to five, distributed across IEEE, Taylor & Francis, Scopus, Sage Journals, and ScienceDirect. A decline occurred in 2022 with only two publications, both from ScienceDirect. The highest output was recorded in 2023 with ten publications, dominated by IEEE, followed by ScienceDirect, Scopus, and Taylor & Francis. In the subsequent years, the volume decreased significantly, with only one publication in 2024 (Scopus) and one in 2025 (IEEE). Overall, IEEE contributed the largest share with ten articles, followed by ScienceDirect (six), Scopus (four), Taylor & Francis (two), and Sage Journals (one). These findings indicate that research activity peaked in 2023, while earlier years showed moderate but more diverse contributions.

Table 2. Summary of EA Framework Adoption in the Public Sector

Country	Institution	Framework	Adopted from	Reference
Australia	Australian digital government	Australian Government Architecture	-	(Gill & Hansnata, 2024)
Netherlands	The three service organizations in the private sector	Agile EA Sweet Spot	Agile Scaling Framework (ASF)	(Van Wessel et al., 2023)
Brazil	Science & Technology Parks, Parana State of Brazil	Process Based Management Model	Design Science Research (DSR)	(Correia et al., 2021)
Chile	Chilean municipalities	TOGAF	-	(Gallegos-Baeza et al., 2023)
Egypt	The Ministry of Health	LADM (Legal-ADM)	TOGAF	(Mohamed et al., 2021)
India	Government of India	IndEA (India Enterprise Architecture)	Global best practices	(Bhatia et al., 2023)
Indonesia	Government of Indonesia	SPBE	TOGAF and FEAF	(Trimanadi & Indra Sensuse, 2025)
Indonesia	Department of Communication and Informatics (Diskominfo) of Bandung City	TOGAF	-	(Fahlevi et al., 2023)
Iran	Ministry of Culture and Islamic Guidance	Single Window Reference Architecture (SW-RA)	Global e-Government practices	(Ahmadi & Taheri, 2021)

Country	Institution	Framework	Adopted from	Reference
Ireland	the Country of Limerick	Limerick Enterprise Architecture (LEA)	TOGAF	(Bastidas, Bezbradica, et al., 2023)
Luxembourg	Telecommunications Service Providers (TSPs) and the National Regulatory Authority (NRA)	Enterprise Architecture Management and Information System Security Risk Management (EAM-ISSRM)	-	(Mayer & Aubert, 2021)
Malaysia	MAMPU (Malaysian Administrative Modernisation and Management Planning Unit)	MyGovEA	TOGAF and Zachman	(Ahmad et al., 2020)
Malaysia	Accountant General's Department of Malaysia (AGD), Ministry of Finance	MyGovEA	TOGAF and Zachman	(Othman et al., 2020)
Malaysia	Malaysian Public Sector (MPS) – level Federal, State, Local Authority (255 organisasi publik)	MyGovEA	TOGAF and Zachman	(Ahmad, 2020)
Morocco	Moroccan National Public Administration	M-NEA (Moroccan National Enterprise Architecture)	Zachman	(Barramouel et al., 2020)
Uganda	Ministry of ICT in Uganda	e-government enterprise architecture framework (EGEAF)	TOGAF	(Namagembe et al., 2023)
United Kingdom	Healthcare Facility	Integrated Socio-Technical Enterprise Model	Socio-Technical Systems (STS) Theory and Practices	(Fayoumi & Williams, 2021)
Germany	Procurement Agency	FISAD (Framework for Interoperable Service Architecture Development)	TOGAF, Design Science Research Methodology (DSRM), and European Interoperability Framework (EIF)	(Schmitz & Wimmer, 2023)
Japan	Cabinet Office of the Japanese Government	SCRACO	TOGAF	(Yamamoto, 2022)
Ireland	City	SCEA	-	(Bastidas, Reychav, et al., 2023)
Germany	BASt (Federal Highway Research Institute)	Tailored Enterprise Architecture Management (EAM)	TOGAF and COBIT	(Werner & Lehan, 2023)
United States	US state governments	Diffusion of EA promoted by National Association of State CIOs (NASCIO)	TOGAF and EA from DoD	(Bui & Lyytinen, 2022)

Table 2 shows the distribution of studies on Enterprise Architecture (EA) in the public sector across various countries. The findings indicate that Indonesia and Malaysia are the most frequently studied contexts, with four research cases each focusing on different government

institutions and frameworks. Other countries, including Australia, Brazil, Chile, Egypt, India, Iran, Ireland, Luxembourg, Morocco, Germany, the Netherlands, Japan, Uganda, United Kingdom and United States , are represented by a single case study. This distribution suggests that research on EA in the public sector has attracted global attention, with Southeast Asia, particularly Indonesia and Malaysia, suggesting that Indonesia and Malaysia are increasingly recognized as important cases in the discourse on EA in the public sector.

In order to answer the first research question (RQ1), which concerns the trends in Enterprise Architecture (EA) implementation in the public sector, an analysis of the identified literature was conducted. The results of the analysis are presented in Table 2, which summarizes the distribution of studies by country, government institution, EA framework, and reference model.

The analysis shows that studies on EA in the public sector are geographically diverse but unevenly distributed across countries. Indonesia and Malaysia appear most frequently, with four studies each, while other countries,such as Australia, Brazil, Chile, Egypt, India, Iran, Ireland, Luxembourg, Morocco, the Netherlands, and Uganda, are represented by a single study. Indonesia and Malaysia appear prominently because both countries have national digital government agendas that require stronger interoperability, cross-agency coordination, and standardization of information systems. This finding indicates that EA research is particularly relevant in countries where public sector digital transformation is moving from isolated agency-level initiatives toward integrated national platforms.

In terms of frameworks, TOGAF emerges as the most prominent, either applied directly or serving as the foundation for localized models such as Indonesia's SPBE, Malaysia's MyGovEA, and Ireland's Limerick Enterprise Architecture (LEA). The dominance of TOGAF can be explained by its structured Architecture Development Method (ADM), broad documentation, technology-neutral orientation, and flexibility to be adapted to different organizational contexts. Other frameworks identified include Zachman, Design Science Research (DSR), Agile Scaling Framework (ASF), LADM, and national initiatives such as India's IndEA and Morocco's M-NEA. These findings indicate that while TOGAF functions as a global reference point, governments often adapt or extend it to suit institutional and national contexts.

At the institutional level, the studies encompass a broad spectrum of public organizations, ranging from national ministries (e.g., Ministry of Health in Egypt, Ministry of ICT in Uganda) to sector-specific agencies (e.g., Luxembourg's NRA, Malaysia's Ministry of Finance) and regional administrations (e.g., County of Limerick in Ireland). This demonstrates that EA implementation in the public sector extends beyond national-level entities and is also relevant for regional and domain-specific governance.

Overall, the findings suggest that EA research in the public sector is characterized by geographical diversity with strong representation from Southeast Asia, the predominance of TOGAF as a guiding framework, and the tendency to develop localized reference models. The dominance of TOGAF can be understood from its structured methodology, flexible architecture development process, and broad applicability across different organizational contexts. However, the reviewed studies also indicate that global frameworks are rarely adopted directly in the public sector. In countries such as Indonesia and Malaysia, EA implementation is shaped by fragmented legacy systems, overlapping institutional mandates, different levels of digital maturity, limited architectural capability, and bureaucratic coordination challenges. This explains why models such as SPBE and MyGovEA adapt global EA principles into more localized governance instruments that are aligned with national regulations, administrative structures, and public service priorities. Therefore, the trend in public sector EA is not only the adoption of global frameworks, but also their institutionalization into context-sensitive national and organizational models.

In answering the second research question (RQ2), the synthesis of 23 studies published between 2020 and 2025 identified 15 EA reference models adopted or proposed in public sector contexts. These models were classified into four categories based on their scope and implementation focus: national-level reference models, domain-specific models, regional government models, and organizational agile models.

Table 3. Classification of EA Reference Models in the Public Sector

Category	Source/Author(s)	Reference Model Name	Country
National-level Reference Models	(Trimanadi & Sensuse, 2024)	Government Enterprise Model (GEA)	Indonesia
	(Barramouel et al., 2020)	Moroccan National Enterprise Architecture (M-NEA)	Morocco
	(Bhatia et al., 2023)	IndEA Security Reference Model	India
	(Bui & Lyytinen, 2022)	Diffusion of EA	United States
Domain-specific Models	(Ahmadi & Taheri, 2021)	Single Window Reference Architecture (SW-RA) Field: Trade/single window	Iran
	(Mohamed et al., 2021)	Law Architecture Framework (LADM/Legal-ADM) Field: Healthcare/legal compliance	Egypt
	(Mayer & Aubert, 2021)	EAM-ISSRM Field: security & risk management	Luxembourg
	(Correia et al., 2021)	Process Based Management Model Field: Science & Technology Parks	Brazil
	(Fayoumi & Williams, 2021)	Integrated Socio-Technical Enterprise Model	United Kingdom
	(Schmitz & Wimmer, 2023)	Framework for Interoperable Service Architecture Development (FISAD)	Germany
	(Yamamoto, 2022)	Smart City Reference Architectures (SCRA)	Japan
	(Bastidas, Reychav, et al., 2023)	Smart City Enterprise Architectures (SCEA)	Ireland
Regional Government Models	(Bastidas, Bezbradica, et al., 2023)	Limerick Enterprise Architecture (LEA) Field: Smart City	Ireland

Category	Source/Author(s)	Reference Model Name	Country
	(Anthony Jnr, 2020)	Reference Municipal EA Field: Municipalities	Chile
Organizational Agile Models	(Van Wessel et al., 2023)	Agile EA Sweet Spot	Netherlands

Table 3 shows that 15 EA reference models are classified into four categories: National-level Reference Models, Domain-specific Models, Regional Government Models, and Organizational Agile Models. This classification is based on the scope and objectives of each reference model and is intended to facilitate the author's analysis of these models.

National-level reference models are those identified by the author through the SLR, which are applied at a nationwide scale. For example, in Indonesia the Government Enterprise Model (GEA) is used to support the Electronic-Based Government System (SPBE) program in accordance with national policy (Trimanadi & Indra Sensuse, 2025). The SPBE concept is mandated for implementation across all organizational units in Indonesia (Trimanadi & Indra Sensuse, 2025). SPBE aims to integrate various e-government systems that previously operated in silos, support the One Data Indonesia program, and provide integrated national digital services (Trimanadi & Indra Sensuse, 2025). Meanwhile, EA implementation in Morocco refers to their own EA model, namely the Moroccan National Enterprise Architecture (M-NEA) (Barramouel et al., 2020), which was adopted from the Zachman framework. This reference was born out of the failure of previous e-government strategies, which were still siloed and focused on service portals (Barramouel et al., 2020). It is hoped that M-NEA will become an adaptive national architecture that suits Morocco's needs and serves as a roadmap towards smart governance (Barramouel et al., 2020). Other implementations were conducted in US state governments, where they implemented the diffusion of EA across 50 states in the United States (Bui & Lyytinen, 2022).

Domain-specific reference models are those identified in the reviewed literature that are designed to address the particular needs and priorities of specific sectors. For example, in Iran the Single Window Reference Architecture (SW-RA) was developed to support the digital transformation of public service delivery in the Ministry of Culture and Islamic Guidance(Ahmadi & Taheri, 2021). The model provides a modular and user-centered architecture that integrates 30 core services and 90 sub-services, ensuring transparency and efficiency in service access. In Luxembourg, the EAM-ISSRM framework was applied in the telecommunications sector, aligning with EU directives to standardize risk management reporting and enable systemic security oversight across service providers(Mayer & Aubert, 2021).

Egypt introduced the Law Architecture Framework (LAF) to embed legal rules and policies into EA layers, particularly within the Universal Health Insurance program, ensuring regulatory compliance, transparency, and sustainability in the reform of public healthcare services(Mohamed et al., 2021). Meanwhile, in Brazil, the Process and Enterprise Maturity Model (PEMM) was utilized to assess the governance and process readiness of Science and Technology Parks, supporting knowledge transfer, innovation, and integration across stakeholders(Correia et al., 2021). These cases illustrate that domain-specific models provide concrete mechanisms for contextualizing EA practices, thereby enhancing compliance, governance, and service outcomes in diverse public sector domains.

Both Yamamoto(Yamamoto, 2022) and Bastidas, Reychav, et al (Bastidas, Reychav, et al., 2023) focus on the implementation of EA to realize smart cities. Yamamoto (Yamamoto, 2022) emphasizes a technical solution through the modeling of reference architectures with ArchiMate to enhance interoperability, using the Smart City Reference Architecture (SCRA)

as a basis. In contrast, Bastidas, Reychav, et al (Bastidas, Reychav, et al., 2023) concentrates on formulating design principles to ensure strategic alignment within Smart City Enterprise Architectures (SCEA).

In practice, several countries have implemented reference models tailored to specific needs at the city or provincial level. An example can be seen in the City of Limerick, Ireland, through the development of the Limerick Enterprise Architecture (LEA) (Bastidas, Bezbradica, et al., 2023), which adopts the TOGAF concept. This model is designed to support cross-departmental integration in city government while involving external stakeholders, such as retailers and citizens (Bastidas, Bezbradica, et al., 2023). The main objectives are to avoid data silos, improve interoperability, and provide real-time data-based public services to support municipal policymaking (Bastidas, Bezbradica, et al., 2023). A similar implementation with a different context was applied in the Province of Diguillín, Chile, through the development of a municipal EA reference (Gallegos-Baeza et al., 2023).

This model focuses on aligning public service strategies with the use of information and communication technology (ICT), with an emphasis on providing the minimum e-services required by law, such as traffic permits, commercial patents, household social registration, and local education service management(Gallegos-Baeza et al., 2023).

Organizational Agile Models combine agile scaling frameworks (SAFe, LeSS, Spotify) with EA to support large-scale organizational transformation. A study in the Netherlands shows that this combination poses architectural coordination challenges, giving rise to the concept of Agile EA Sweet Spot as a balance between Agile team autonomy and EA guidance (Van Wessel et al., 2023). In practice, solution architects are directly involved in teams to maintain interoperability, ensure alignment with the architectural vision, and support smooth service development (Van Wessel et al., 2023).

Not all studies identified in this review developed or applied a reference model, and this absence can be attributed to differences in research objectives and scope. Some studies concentrated on assessing organizational readiness, process maturity, or capability gaps without extending their findings into the creation of a formalized framework. In such cases, the primary contribution lies in diagnosing existing conditions, identifying barriers, and highlighting opportunities for improvement rather than offering a standardized architectural solution. Furthermore, certain studies were exploratory in nature, aiming to capture empirical insights from specific contexts or pilot projects, where the development of a domain-specific or national-level reference model was not yet feasible.

This variation reflects the heterogeneity of EA research in the public sector, where not every initiative results in a structured model but contributes valuable knowledge to guide future framework development and policy formulation. The absence of reference models in these cases should not be considered a limitation, but rather an indication of diverse research orientations that provide diagnostic insights and lay the groundwork for more comprehensive frameworks in the future.

CONCLUSION

This study conducted a Systematic Literature Review (SLR) using the PRISMA protocol to examine the implementation of Enterprise Architecture (EA) in the public sector, focusing on both global trends and the adoption of reference models. The findings reveal that research on EA in government organizations has grown steadily in recent years, with a peak in 2023. Geographically, the studies are diverse but unevenly distributed, with Indonesia and Malaysia receiving significant attention compared to other countries. In terms of frameworks, TOGAF consistently emerges as the most widely applied approach, either directly or as a foundation for localized models such as SPBE in Indonesia, MyGovEA in Malaysia, and LEA in Ireland. This suggests that while TOGAF provides a global reference point, most governments adapt it to fit their specific institutional and socio-political contexts.

Furthermore, the review identified at least 15 reference models, categorized into four groups: national-level, domain-specific, regional government, and organizational agile models. These models demonstrate that EA in the public sector is not only a matter of adopting global frameworks but also of creating tailored architectures that address local governance needs, sectoral requirements, and organizational challenges. Successful implementation is strongly linked to government commitment, inter-agency collaboration, and alignment with digital transformation initiatives. At the same time, challenges such as institutional resistance, limited resources, and fragmented policies remain critical barriers.

In conclusion, EA in the public sector functions as both a strategic and technical mechanism to promote interoperability, governance, and digital transformation. Future research should advance comparative cross-country analyses, develop adaptable reference models, and empirically validate best practices, particularly in sectors with high interoperability and compliance requirements such as healthcare, education, smart city governance, and public finance, to enhance knowledge transfer and standardization. For policymakers, the findings of this review provide actionable insights for designing context-sensitive and sustainable EA initiatives that balance national priorities with global interoperability.

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