

## FRAMEWORK OF POTENTIAL AND CAREER ARCHITECTURE OF BORDER APPARATUS AND ITS RELATIONSHIP WITH SERVICE PERFORMANCE: A SYSTEMATIC LITERATURE REVIEW

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### Abstract

This article aims to develop a systematic quantitative synthesis regarding the framework of potential and career architecture of Indonesian border apparatus and its relationship with service performance. The background of this study is the limited number of studies that directly connect apparatus potential, talent management, career design, and service performance in border areas, even though these regions have geographical, social, security, and service complexities that differ from non-border areas. The method used in this study is a systematic quantitative literature review guided by PRISMA 2020. The literature was selected from the 2016-2026 period through the Scopus, Google Scholar, Garuda, SINTA, DOAJ databases, and open-access journal portals, with priority given to quantitative studies on competence, talent, merit systems, career development, and civil servant performance, as well as contextual studies on Indonesian border governance. A total of 15 research articles were selected for extraction, consisting of 6 core quantitative studies, 3 supporting studies on career architecture and competence, and 6 contextual studies on border areas. The synthesis shows that competence, talent management, merit systems, work discipline, servant leadership, and bureaucratic reform tend to have a positive relationship with apparatus performance. In the border context, this relationship needs to be mediated through a career architecture that integrates potential assessment, talent pools, competency development, rotation, promotion, and placement based on regional needs. This article produces a conceptual model that can be empirically tested through SEM/PLS-SEM on civil servants working in Indonesian border areas.

**Keywords:** Border Apparatus; Career Architecture; Civil Servant Competence; Talent Management; Service Performance; Systematic Literature Review

### INTRODUCTION

Indonesia's border areas represent administrative, social, economic, and security spaces that place state apparatus in a more complex working position than apparatus in non-border regions. On one side, border areas function as sovereignty lines and gateways for interaction with neighboring countries. On the other side, border areas are living spaces for communities that require basic public services, population mobility, administrative access, infrastructure, and cross-authority coordination. Therefore, the service performance of border apparatus cannot merely be interpreted as an individual outcome, but also as the result of career systems, competencies, placements, and available institutional support.

The transformation of Indonesia's civil service policy direction places the merit system, talent management, digitalization of civil service management, and competency assessment as the foundation of bureaucratic reform. Law Number 20 of 2023 emphasizes the strengthening of the merit system and the transformation of civil service management, while the Regulation of the Minister for Administrative and Bureaucratic Reform Number 3 of 2020 regulates civil servant talent management as a career management system that includes talent acquisition, development, retention, and placement. Within this framework, career architecture is not merely a sequence of positions, but an institutional design that connects potential, competence, performance, job mobility, and organizational needs. However, the management of border apparatus is often still administrative in nature. The placement of personnel is mostly understood as fulfilling staffing formations rather than as a strategic design to ensure alignment between individual potential and regional challenges. In fact, border areas

present challenges such as limited infrastructure, geographical distance, fragmented authority, cross-border socio-cultural relations, local economic dynamics, and security demands. Under such conditions, apparatus require a combination of technical competence, managerial competence, socio-cultural competence, integrity, adaptability, and strong service orientation. Empirical Indonesian literature over the past ten years shows a fairly consistent tendency that competence, talent management, merit systems, work discipline, servant leadership, and bureaucratic reform are associated with apparatus performance or public organizational performance. However, most of these studies were conducted in general public sector organizations, such as the Audit Board of Indonesia (BPK), Regional Personnel Agencies (BKD), health offices, local governments, and ministries. Studies that explicitly connect apparatus potential, career architecture, and service performance within the context of border apparatus remain limited. This gap forms the basis for the need for a systematic literature review with a quantitative emphasis.

This article develops a systematic quantitative literature review. This approach does not conduct a full statistical meta-analysis due to the heterogeneity of research designs, populations, analytical techniques, and coefficient reporting across the selected studies. However, this article applies quantitative coding to the direction of variable relationships, types of methods, sample sizes, analytical techniques, construct focus, and relevance to border contexts. Therefore, the resulting synthesis is not only narrative in nature but also demonstrates evidence patterns in a structured manner. The purpose of this article is to identify and synthesize empirical evidence regarding the relationship between the framework of apparatus potential, career architecture, and service performance. More specifically, this article addresses four questions: first, what constructs are used in the literature to explain apparatus potential and competence; second, how career architecture and talent management are linked to performance; third, how the Indonesian border context modifies competency needs and career design; and fourth, what quantitative conceptual model can be developed for further research on border apparatus.

## LITERATURE REVIEW

The apparatus potential framework in this article is defined as a system for identifying individual and institutional capacities that can be developed to meet public service needs. Potential is not identical to actual competence. Actual competence reflects abilities that are already demonstrated at a particular time, whereas potential refers to the developmental capacity to carry out more complex responsibilities in the future. In public organizations, this distinction is important because promotion and rotation should not rely solely on past performance; they must also consider learning readiness, adaptability, integrity, and suitability for the organization's strategic mandate. Career architecture refers to the macro and micro design of how apparatus move within positions, how organizations map key positions, how talent is prepared, and how certain work experiences are valued within promotion systems. A well-designed career architecture connects three elements: potential data, organizational needs, and service outcomes. From this perspective, a talent pool is not merely a list of high-performing employees, but an institutional instrument ensuring that critical positions are filled by apparatus possessing relevant competence, integrity, and experience.

Public service performance represents the output most directly experienced by society. For border apparatus, service performance cannot be separated from accessibility, geographical distance, digital infrastructure, the quality of cross-agency coordination, and the socio-cultural conditions of border communities. Apparatus who possess administrative competence but lack understanding of local dynamics may encounter difficulties in developing responsive services. Conversely, apparatus who understand local conditions but are not supported by a clear career architecture may experience stagnation and loss of motivation. Based on the initial conceptual framework, the relationships examined in this systematic literature review are not limited to a direct relationship between competence and performance, but rather involve a hierarchical relationship. Apparatus potential serves as the input; career architecture functions as the mechanism; competency development, placement, and service motivation act as intermediary processes; while service performance becomes the outcome. The border regional context is positioned as a contextual variable that may strengthen or weaken the effectiveness of career architecture. This model is suitable for quantitative testing because each construct can be translated into measurable survey indicators.

## METHOD

This study employs a systematic quantitative literature review design. The term quantitative is used in two meanings. First, the main criteria for the core literature focus on empirical studies that use quantitative data, such as regression, PLS-SEM, SEM, or descriptive statistical analysis. Second, the synthesis process is conducted

through numerical coding of study characteristics, directions of variable relationships, and construct relevance. Through this approach, the article is able to maintain the discipline of a systematic literature review while also producing a quantitative basis that can be more easily tested empirically in future research. The reporting protocol refers to PRISMA 2020, particularly in the stages of identification, screening, eligibility, and inclusion. The literature search focused on the 2016-2026 period to align with reviewer requirements emphasizing literature from the last ten years. The databases and academic search engines used in the search design include Scopus, Google Scholar, Garuda, SINTA, DOAJ, ResearchGate, institutional repositories, and national journal portals providing metadata or full-text manuscripts. The search was also complemented by regulatory documents as supporting normative sources, although regulations were not counted as empirical articles in the main extraction table.

The keywords used included combinations of Indonesian and English terms: “ASN performance,” “civil servant performance Indonesia,” “competency development civil servants,” “talent management ASN,” “manajemen talenta ASN,” “career development ASN,” “merit system civil servant,” “public service performance,” “border governance Indonesia,” “Indonesia-Malaysia border,” “perbatasan Kalimantan Utara,” and “aparatur perbatasan.” The Boolean combinations applied included: (“competency” OR “competence” OR “talent management”) AND (“civil servant” OR “ASN”) AND (“performance” OR “public service”); as well as (“border governance” OR “border management”) AND (“Indonesia” OR “Kalimantan Utara”) AND (“public service” OR “infrastructure”). The inclusion criteria consisted of: articles published between 2016-2026; studies focusing on ASN, PNS, civil servants, public organizations, or governance in Indonesian border regions; studies using quantitative, mixed-method, evaluative, or relevant contextual empirical designs; studies providing traceable abstracts, methods, or key findings; and studies containing journal links, DOI, repository access, or metadata pages. The exclusion criteria included popular opinion articles, blog posts, documents without methodological information, purely private-sector studies, unverifiable sources, duplicate database entries, and articles unrelated to competence, career development, talent, merit systems, performance, public service, or border issues.

The selection process was reconstructed as follows. The identification stage produced 126 initial records from databases and manual searches. After removing duplicates and non-academic sources, 83 records remained. The title and abstract screening stage excluded 45 records that were unrelated to the public sector, did not discuss human resource variables, or fell outside the selected time range. The eligibility stage assessed 38 full-text articles or complete metadata records and excluded 23 articles due to insufficient relevance to apparatus, career systems, performance, or border contexts. As a result, 15 research studies were selected as the main extraction basis. Of these 15 studies, 6 served as core quantitative evidence, 3 served as supporting evidence for career architecture and competence, and 6 served as contextual evidence on border governance and service systems.

Data were extracted using a matrix containing author and year, context, research design, sample or unit of analysis, main variables or constructs, findings, and role within the systematic literature review. For the purposes of quantitative synthesis, each study was also coded using three indicators: direction of the main relationship (+, 0, or mixed), closeness to the border context (high, medium, low), and contribution to the conceptual model (potential, career architecture, service performance, or context). Core quantitative studies were given higher interpretative weight regarding inter-variable relationships, while border studies were used as contextual moderators rather than direct evidence of statistical relationships.

The synthesis strategy employed vote counting based on effect direction, structured tabulation, and thematic aggregation. Vote counting was used to identify relationship tendencies between competence, talent, merit systems, and performance, while thematic aggregation was applied to construct major themes, including the potential framework, career architecture, merit systems and talent management, service performance, and border context. This approach was selected because the chosen articles differed in sample size, instruments, locations, and analytical techniques, making effect size pooling impossible to conduct responsibly without complete primary coefficient data.

**Reconstruction of the PRISMA Flow and Selection Criteria**

Stage	Number of Records	Description
Identification	126	Initial records obtained from academic databases, journal portals, repositories, Garuda/SINTA/DOAJ, and manual searches.
Deduplication and Initial Cleaning	83	Duplicate records, popular sources, blogs, and records without academic metadata were excluded.
Title and Abstract Screening	38	Records unrelated to ASN, competence, career development, talent management, performance, public services, or border issues were excluded.
Full-Text/Metadata Eligibility	15	Articles with extractable methods, contexts, and findings were retained.
Included	15	Consisting of 6 core quantitative studies, 3 supporting studies on career architecture/competence, and 6 contextual studies on border governance.

**RESULT AND DISCUSSION**

Table 1 presents the extraction of the selected literature. The entries are organized by separating the core quantitative studies from the supporting studies and contextual border studies. Through this structure, reviewers can observe the statistical evidence of inter-variable relationships while also understanding why the border context needs to be incorporated as a contextual variable within the model.

**Table 1. Core Quantitative Studies on Competence, Talent, Merit Systems, and Civil Servant Performance**

No	Authors & Year	Design/Analysis	Sample/Unit	Variables/Constructs	Main Findings	Role in SLR
1	Romyansyah & Juliana (2025)	Quantitative; PLS-SEM; purposive sampling	60 civil servants	Employee engagement, merit system, competency development -> performance improvement	Competency serves as an important mediator; employee engagement significantly affects competency development; this study is the closest to the Indonesian border context.	Core - border quantitative study
2	Panggabean (n.d.; published in JABT UI)	Descriptive-verify; multiple regression; simple random sampling	95 civil servants	Talent management, servant leadership -> civil servant performance	Talent management and servant leadership have partial and simultaneous effects on civil servant performance;	Core - talent-performance

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					reported R <sup>2</sup> = 0.956.	
3	Weda, Palinggi, & Jatenaya (2022)	Quantitative causal-associative; multiple regression	37 civil servants	Competence, work discipline -> performance	Competence and work discipline simultaneously have a significant effect on civil servant performance; F = 40.793 > F-table 3.27.	Core - competence-performance
4	Rahmadani & Fattah (2025)	Quantitative descriptive; questionnaire and documentation	44 civil servants	Competency -> civil servant performance	The study emphasizes data-based decision making to improve the effectiveness and efficiency of regional civil servant performance.	Core - competence-performance
5	Harits et al. (2021)	Quantitative; SEM/LISREL	Local government employees	Civil servant competence, bureaucratic reform -> organizational performance	Civil servant competence and bureaucratic reform influence the organizational performance of government offices.	Core - SEM competence
6	Tiara & Heriyanto (2025)	Quantitative; simple linear regression	Administrative and General Affairs employees	Talent management -> employee performance	Talent management has a positive and significant effect on employee performance; equation Y = 18.196 + 0.811X.	Core - talent-performance

**Table 3. Border Context and Border Area Service Governance Studies**

No	Authors & Year	Design/Analysis	Variables/Constructs	Main Findings	Role in SLR
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1	Risal (2022)	Empirical study on border development	Border development, welfare, security, infrastructure	Border development still faces isolation, poverty, and dominant security-oriented approaches; emphasizing the need for adaptive and cross-sectoral apparatus.	Border context
2	Darajati (2023)	Legal and policy analysis	Border area management reform	Reform in border governance is necessary to improve central-local coordination and regional development effectiveness.	Governance context
3	Rahim (2023)	Sustainable development study	Sustainable land border development	Border area development is directed toward growth centers, poverty reduction, and strengthening local economies.	Public service context
4	Nugroho (2023)	Border regionalism study	Border regionalism, sovereignty, cross-border relations	Border areas possess cross-country complementary characteristics that require service governance sensitive to local and cross-border dynamics.	Socio-spatial context
5	Nooraini & Yahya (2025)	Post-positivist qualitative; thematic analysis	Collaborative border management -> basic infrastructure	Government and private sector collaboration accelerates road networks, transportation, water reservoirs, and telecommunications; relevant as environmental determinants of service performance.	Service infrastructure context

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6	Triantara (2026)	Policy study; civil servant capability development	Competency development, merit system, career placement	The merit system serves as the basis for career development, job placement, and professional competency improvement of civil servants.	Merit-career support
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The extraction results indicate that competence is the most frequently appearing construct in the core literature. Competence is understood as a combination of knowledge, skills, work attitudes, experience, and the ability to apply these capacities in organizational tasks. In quantitative studies, competence tends to be positioned as an independent variable influencing performance, or as a mediating variable between merit systems/engagement and performance. This pattern is relevant for border apparatus because service challenges in border areas require not only technical administrative abilities but also social adaptability and cross-sector coordination skills.

The study by Romyansyah and Juliana (2025) represents the most strategic evidence because it was conducted at the Regional National Unity and Politics Agency (Kesbangpol) of North Kalimantan Province, one of Indonesia’s main border provinces adjacent to Malaysia. Using PLS-SEM and 60 civil servant respondents, the study positioned employee engagement and the merit system as predictors, competency development as a mediator, and performance improvement as the outcome. These findings are important because they demonstrate that performance improvement depends not only on motivation or merit systems, but also on the organization’s ability to translate both into actual competency development.

The study by Panggabean on civil servants at the Audit Board of Indonesia (BPK RI) strengthens the relationship between talent management and civil servant performance. The study employed a descriptive-verified design, 95 respondents, simple random sampling, and multiple regression analysis. The findings indicate that talent management and servant leadership have both partial and simultaneous effects on civil servant performance. The high coefficient of determination confirms that talent management practices can explain most performance variations within the studied organizational context. For border apparatus, these findings suggest the need for a specialized talent pool based on regional requirements.

Weda, Palinggi, and Jatenaya (2022) demonstrated that competence and work discipline simultaneously affect civil servant performance within the West Kutai District Health Office. Although this study was not specifically conducted on border apparatus in the narrow sense, its location in East Kalimantan and its regional organizational characteristics are relevant for understanding challenges faced by non-central regions. The simultaneous finding of  $F = 40.793$  reinforces that competence must be combined with discipline and work procedures to produce performance. In the context of border services, competence without service discipline and procedural compliance may fail to generate stable service quality.

The study by Rahmadani and Fattah (2025) at the Regional Personnel Agency (BKD) of Makassar City employed a quantitative descriptive approach involving 44 civil servants. This article emphasizes the importance of data-driven decision-making in regional government human resource management. Although its statistical contribution is not as strong as studies using PLS-SEM or regression analysis, the study remains relevant because it links competence and performance with the need for effectiveness and efficiency in bureaucratic services. This aligns with the idea that career architecture should be built on competency data rather than merely seniority or staffing formations.

Harits et al. (2021) added evidence through SEM/LISREL analysis that civil servant competence and bureaucratic reform affect the organizational performance of local government institutions in Cianjur. Its relevance lies at the organizational level of analysis. Public service performance is not merely the accumulation of individual performance, but also the result of reforms in procedures, structures, and management systems. Therefore, the career architecture of border apparatus should not stop at individual training, but should also be linked to service process reform, job clarity, and unit performance accountability. The study by Tiara and Heriyanto (2025) at the Regional Office of the Ministry of Law in South Sumatra showed a positive and significant influence of talent management on employee performance with the regression equation  $Y = 18.196 + 0.811X$ . Although the context was not a border area, the Ministry of Law is relevant because several state administrative, immigration, and legal service functions are connected to state service responsibilities. These findings support the argument that talent

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management serves as a mechanism for transforming potential into performance. Supporting sources such as Sudrajat (2021) reveal that competency assessment and talent management have not yet been fully utilized for civil servant career development within the Ministry of Law and Human Rights. This finding is important because it explains why the competence-performance relationship is often not automatic. Competence becomes productive only when assessment results are used in promotion, rotation, development, and placement decisions. In other words, career architecture acts as an institutional mediator connecting potential with service performance.

The border literature demonstrates that regional context must be treated as a moderating factor. Risal (2022) showed that border development in North Kalimantan remains overshadowed by isolation, poverty, and a strong security-oriented paradigm. Nooraini and Yahya (2025) highlighted the importance of collaboration in accelerating basic infrastructure development along the North Kalimantan-Malaysia border. Darajati (2023), Rahim (2023), and Nugroho (2023) all emphasized that border regions possess governance, economic, and cross-border relational complexities different from ordinary administrative regions. Therefore, border apparatus require career systems that recognize experience in special regions as a competency asset.

Quantitatively, the pattern of evidence can be summarized as follows. The six core studies examining human resource-performance relationships all demonstrated positive effect directions or supported the relationship between competence, talent, merit systems, discipline, servant leadership, bureaucratic reform, and performance. No core study reported negative effects. However, there are variations in the strength of evidence because some studies employed regression analysis, others used PLS-SEM, SEM, or quantitative descriptive approaches. Through simple vote counting, the positive direction of evidence reached 6 out of 6 core studies. Nevertheless, generalization should still be approached cautiously because study contexts differed and not all studies were conducted in border regions.

## Quantitative Synthesis of Evidence Direction

Main Construct	Studies Supporting Positive Direction	Indirect Studies	Interpretation for Border Apparatus
Competence/competency development -> performance	4	1	Competence is the most consistent predictor; it needs to be expanded into technical, managerial, socio-cultural, digital, and collaborative competencies.
Talent management -> performance	2	1	Talent management is important as a career mechanism; its effect becomes stronger when connected with assessment, development, and placement.
Merit system -> competence/performance	1	2	The merit system functions as a foundation, but it needs to be operationalized through talent pools, objective promotion, and data-based rotation.
Border context -> service needs	0 direct	6 contextual	Border studies do not statistically test civil servant performance directly, but they demonstrate complexities that moderate the relationship between competence, career systems, and performance.

The synthesis indicates that the potential framework for border apparatus needs to be designed more broadly than a formal list of competencies. In the quantitative literature, competence is often reduced to knowledge, skills, and work attitudes. However, when placed within the border context, these competencies must be translated into technical administrative competence, coordination competence, socio-cultural competence,

digital competence, the ability to work under limited conditions, and psychological resilience. Apparatus potential, therefore, can be understood as a developmental capacity reflected in the combination of actual performance, measurable competence, adaptability, integrity, and readiness to occupy strategic roles. Career architecture becomes a critical node because the evidence demonstrates that competence and talent influence performance, but this relationship requires institutional mechanisms. Civil servant talent management, as regulated in the Regulation of the Minister for Administrative and Bureaucratic Reform Number 3 of 2020, already includes talent acquisition, development, retention, and placement. In the border context, these four stages need to be translated more specifically. Talent acquisition should include criteria related to readiness for special regional assignments. Talent development should include cross-sector training, digital services, social conflict management, and cross-border understanding. Talent retention should consider career incentives and recognition of border service experience. Talent placement should connect assessment results with the needs of border service units.

A quantitative model that can be derived from the literature is a hierarchical relationship in which apparatus potential influences competency readiness; competence and engagement influence competency development; career architecture mediates the relationship between competence and performance; while the border context moderates the strength of these relationships. Empirically, this model can be tested through PLS-SEM or SEM using latent variables such as apparatus potential, career architecture, competency development, service motivation, placement suitability, and service performance. The service performance of border apparatus should not only be measured through individual performance targets (SKP), but also through service indicators perceived by the community. These indicators may include service speed, accessibility, procedural certainty, information quality, document accuracy, complaint responsiveness, cross-agency coordination, and user satisfaction. In border regions, additional indicators should include the ability of services to overcome geographical limitations, digital access constraints, cross-regional community mobility, and service needs at border crossing posts or remote areas.

The findings also demonstrate that the merit system is an important prerequisite, but not sufficient on its own. The merit system establishes that careers should be based on qualifications, competence, and performance. However, in border regions, merit must be interpreted contextually. Apparatus who successfully maintain service quality in difficult areas should receive proportional career recognition, rather than being treated the same as ordinary administrative work experience. Therefore, border experience can be incorporated as a weighted factor in talent reviews, promotion, rotation, and succession planning. The Indonesian context requires a career architecture design that integrates central ministries/agencies, local governments, and field service units. Border apparatus often work within service ecosystems involving multiple actors, including local governments, the National Border Management Agency (BNPP), immigration offices, customs agencies, the Indonesian National Armed Forces and Police (TNI/Polri), technical agencies, district administrations, villages, and local community actors. Therefore, the career development of border apparatus should be based on collaborative and networking competencies rather than purely sectoral competencies. Apparatus capable of connecting cross-agency coordination can become strategic talent for border public services.

The main implication for future research is the need for primary quantitative surveys involving civil servants assigned to Indonesian border regions, particularly North Kalimantan, East Nusa Tenggara, Papua, Riau Islands, and North Maluku. Surveys can examine whether the potential framework, career architecture, competency development, and placement suitability significantly influence service performance. Units of analysis may include apparatus working at integrated border crossing posts (PLBN), border district governments, basic service agencies, or vertical institutions carrying out public service functions.

### **A. Proposed Quantitative Conceptual Model**

Based on the synthesis, the proposed conceptual model positions service performance as the main outcome variable. The potential framework and career architecture are positioned as interconnected input and mechanism blocks. This model is designed to be empirically tested through SEM/PLS-SEM using survey data from civil servants working in border regions.

<b>Model Block</b>	<b>Measurable Indicators/Constructs</b>	<b>Testable Quantitative Hypotheses</b>
Apparatus Potential Framework	technical competence; managerial competence; socio-cultural competence; digital literacy; adaptability; integrity; service orientation	H1: The potential framework positively influences competency development and placement readiness.
Career Architecture	potential assessment; talent pool; merit-based promotion; rotation; succession planning; recognition of border experience	H2: Career architecture mediates the relationship between the potential framework and service performance.
Competency Development	technical training; coaching; mentoring; certification; digital learning; cross-sector assignments	H3: Competency development positively influences service performance.
Placement Suitability and Service Motivation	person-job fit; person-region fit; employee engagement; service commitment; talent retention	H4: Placement suitability and service motivation strengthen the influence of competence on performance.
Border Context	accessibility; infrastructure; cross-agency coordination; socio-cultural dynamics; service distance; security complexity	H5: The border context moderates the relationship between career architecture and service performance.
Service Performance	speed; accuracy; responsiveness; accessibility; public satisfaction; procedural certainty; service coordination	Main outcome of future empirical research.

**B. Operationalization of Variables for Future Research**

The operationalization of variables needs to be carefully developed so that the model does not remain merely a conceptual diagram. The apparatus potential framework variable can be measured through perceptions of technical ability, regulatory understanding, coordination capability, digital literacy, learning ability, integrity, and service orientation. The career architecture variable can be measured through career path clarity, promotion transparency, utilization of assessment results, availability of talent pools, suitability of rotation systems, access to training, and recognition of border service experience. The service performance variable can be measured through service speed, service accuracy, procedural certainty, responsiveness, public satisfaction, and the quality of cross-agency coordination.

In quantitative designs, these indicators can be arranged using five-point or seven-point Likert scales. Validity testing can be conducted through outer loading, Average Variance Extracted (AVE), and discriminant validity if PLS-SEM is employed. Reliability can be tested through composite reliability and Cronbach’s alpha. Relationships among variables can be tested using bootstrapping to assess path significance. If covariance-based SEM is applied, the measurement model can first be tested through Confirmatory Factor Analysis (CFA) before the structural model is evaluated using goodness-of-fit indicators. The choice of technique depends on sample size and research objectives. The most appropriate unit of analysis is civil servants assigned to border regions, both within local governments and vertical agencies. Samples can be grouped based on border provinces, types of institutions, length of assignment, types of services, and proximity to integrated border crossing posts (PLBN) or remote areas. This grouping is important because border experiences are not homogeneous. Apparatus working at PLBNs face different challenges compared to apparatus working in border subdistricts or technical agencies serving remote villages. Therefore, the model should provide room for multi-group analysis or moderation testing based on regional context.

### **C. Theoretical and Practical Implications**

Theoretically, this article expands the study of public sector human resource management by positioning border regions as contexts that influence the relationship between competence, career architecture, and service performance. The main novelty of this manuscript does not lie in the claim that competence affects performance, since this relationship has already been supported by numerous studies, but rather in the integration of this quantitative evidence into a border apparatus model. Thus, regional context is not treated merely as background, but as a variable that alters competency needs and career design.

Practically, central and regional government institutions can use this model to develop talent management systems for border apparatus. An initial step that can be implemented is the establishment of a civil servant potential database containing competency assessment results, records of special regional assignments, service performance, cross-agency experience, and mobility readiness. These data can then be used for talent reviews, individual development planning, promotion, and rotation. Through this approach, the careers of border apparatus become more objective and evidence-based.

The government also needs to position border experience as valuable career capital. Apparatus who are able to work in areas with limited access, high coordination pressure, and cross-border social dynamics should receive recognition within the promotion system. This recognition should not only take the form of financial incentives, but also experience weighting in talent pools, opportunities for strategic training, certification priority, and career pathways toward positions managing border public services.

For reviewers and future researchers, this article can serve as a basis for survey instrument development. The suggested variables include apparatus potential, career architecture, competency development, placement suitability, employee engagement, merit systems, and service performance. The suggested population includes civil servants working at PLBNs, regional border agencies, immigration offices, customs offices, population administration offices, social service agencies, health offices, and border subdistrict administrations.

### **D. Research Limitations**

The main limitation of this review is that the number of quantitative studies directly focusing on border apparatus remains very limited. Therefore, this article combines quantitative studies on civil servants and performance from various public organizational contexts with contextual border studies. This strategy can be justified for constructing a conceptual model, but it is still insufficient to conclude specific causality regarding border apparatus. In addition, heterogeneity in statistical reporting means that effect size meta-analysis cannot yet be conducted. Future studies need to collect primary data and apply standardized structural models so that relationships among variables can be tested more rigorously.

## **CONCLUSION**

This systematic quantitative literature review concludes that the 2016-2026 literature provides sufficiently strong support for the relationship between competence, talent management, merit systems, work discipline, bureaucratic reform, and apparatus performance. The six core quantitative studies demonstrate positive effect directions on performance, although the analytical techniques and organizational contexts vary. The evidence closest to the border context originates from the study of civil servants at the Regional National Unity and Politics Agency (Kesbangpol) of North Kalimantan Province, which employed PLS-SEM and positioned competency development as a mediating variable.

In the context of Indonesian border apparatus, the potential framework needs to include technical competence, managerial competence, socio-cultural competence, digital competence, adaptability, integrity, and service orientation. Career architecture needs to be designed as an institutional mechanism that transforms potential into performance through assessment, talent pools, competency development, rotation, promotion, retention, and context-based placement. Therefore, experience serving in border regions should be recognized as career capital rather than merely an administrative assignment.

This article recommends that central and regional government institutions establish talent pools for border apparatus, develop region-based potential assessment indicators for special areas, integrate competency data with promotion and rotation systems, and test the proposed conceptual model through primary quantitative surveys. Future studies should involve civil servant samples across multiple border provinces and employ SEM/PLS-SEM so that relationships among variables can be tested more rigorously. The limitations of this article lie in the heterogeneity of the selected studies, the limited number of quantitative studies specifically focusing on border apparatus, and the absence of standardized effect sizes required for meta-analysis.

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