

EURASIAN RESEARCH JOURNAL
ERJ, Vol. 8, No.2, 203-221, Spring 2026

Eurasian
Research
Journal
Spring 2026
Vol. 8, No. 2

<https://doi.org/10.53277/2519-2442-2026.2-05>

IRSTI 82.13.01

ISSN 2519-2442, KAZAKHSTAN

Research Article

**HYBRID GOVERNANCE AND CIVIL SERVICE REFORM IN
KAZAKHSTAN**

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Received: 27.10.2025

Accepted: 23.04.2026

ABSTRACT

This study examines the hybridization of Kazakhstan's civil service through the integration of career-based and position-based governance principles. Using regional administrative data from twelve territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs, two quantitative indicators, the external inflow share and the source balance index, were developed to measure institutional permeability and recruitment diversity. Statistical and cluster analyses revealed significant regional disparities in the degree of hybridization, with economically advanced regions demonstrating greater openness to external talent. The strong correlation between external inflow shares and source balance index confirms a systemic link between administrative openness and structural adaptability. The findings contribute to the empirical operationalization of hybrid governance and provide evidence-based insights for refining recruitment strategies and promoting institutional modernization within Kazakhstan's public administration.

Keywords: Hybrid governance, Civil service reform, Institutional adaptability, Recruitment diversity, Kazakhstan.

For citation: Yerbatyrov, M., Zhetpisbayeva, M., & Vladimirov, Z. (2026). Hybrid governance and civil service reform in Kazakhstan. *Eurasian Research Journal*, 8(2), 203-221. <https://doi.org/10.53277/2519-2442-2026.2-05>

INTRODUCTION

Kazakhstan's civil service modernization has entered a new phase, marked by the shift toward a hybrid governance model that integrates features of both career-based and position-based systems. This reform direction was formalized by the Decree of the President of the Republic of Kazakhstan approving the Concept for the Development of Civil Service of the Republic of Kazakhstan for 2024–2029 (Adilet, 2024) and supported by legislative amendments to the Law on Civil Service of the Republic of Kazakhstan (Adilet, 2015). These initiatives primarily aim to strengthen flexibility, meritocracy, and the adaptability of administrative institutions to contemporary socioeconomic challenges.

Despite notable conceptual advances, the empirical dimension of hybridization remains insufficiently explored. National analytical reports, such as the National report on the state of civil service in the Republic of Kazakhstan (Agency of the Republic of Kazakhstan for Civil Service Affairs, 2025), present a positive narrative emphasizing professionalization and digitalization, yet they lack a quantitative assessment of how hybrid mechanisms are manifested at the regional level. To fill this empirical gap, the study focuses on quantifiable indicators of personnel inflow and institutional diversification across the territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs.

Two integrated indices are introduced: the external inflow share (EIS) and the source balance index (SBI) to quantify the extent of hybridization through the influx of professionals from the private and quasi-public sectors into public administration. By applying cluster analysis to regional datasets, the study identifies structural asymmetries in openness and adaptability among local administrative systems.

The theoretical foundation of this study draws on post-NPM and institutional adaptation frameworks, which conceptualize hybrid governance as a dynamic equilibrium between bureaucratic stability and market-oriented flexibility. Building upon these paradigms, the present analysis operationalizes hybridization empirically, transforming an abstract governance concept into a measurable and replicable model.

This research contributes to the empirical operationalization of hybrid governance in a transitional administrative context. It bridges conceptual frameworks with data-driven evidence and provides policy-relevant insights for improving recruitment strategies and institutional design within Kazakhstan's evolving public sector.

Building on the stated aim to empirically assess the degree of hybridization of Kazakhstan's civil service across regions using the EIS and SBI indicators, this study addresses the following research questions:

RQ1: What is the level of institutional permeability of civil service recruitment across Kazakhstan's regions as measured by external inflow share (EIS)?

RQ2: How balanced are recruitment sources across regions as measured by the source balance index (SBI), and how does this relate to permeability?

RQ3: Do regions form statistically distinct clusters in terms of hybridization intensity (low/medium/high), and what regional patterns are associated with these clusters?

LITERATURE REVIEW

Over the past two decades, research on public governance has documented a shift from traditional Weberian administration and New Public Management (NPM) toward more complex reform trajectories characterized by institutional layering and the coexistence of multiple administrative logics. Hybrid governance has emerged as a central concept capturing this coexistence, describing systems in which hierarchical control, managerial instruments, and network-based or collaborative elements operate simultaneously rather than sequentially. In this perspective, hybridity is not transitional but represents a comparatively stable configuration shaped by reform layering, path dependence, and context-specific adaptation (Christensen & Læg Reid, 2015; Goldfinch & Halligan, 2024).

A key implication of the hybrid governance literature is that governance systems may incorporate modernization instruments while retaining enduring legacies of centralized control and informal practices. This understanding has contributed to a broader shift away from linear assumptions of convergence toward liberal-democratic or market-based “best practices,” emphasizing instead selective policy transfer and contextual embeddedness. Empirical research on Kazakhstan’s politico-administrative culture supports this view, showing that reform agendas are often aligned with international standards while being filtered through local institutional constraints, producing hybrid governance outcomes (Karini, 2024).

Despite increasing conceptual clarity, empirical operationalization of hybrid governance remains limited. Much of the literature employs hybridity as an interpretive frame but offers few tools for systematic comparison across territories or administrative subsystems (Christensen & Læg Reid, 2015). One promising approach to addressing this gap lies in the analysis of civil service systems and HRM arrangements, where hybridization becomes observable through recruitment permeability and intersectoral mobility. In hybrid administrations, civil services typically combine career-based internal pipelines with selective external inflows from non-state sectors, reflecting a balance between bureaucratic stability and institutional openness.

International comparative frameworks increasingly acknowledge such mixed configurations, particularly in relation to career-based and position-based systems and differentiated recruitment channels. In the case of Kazakhstan, The Organisation for Economic Co-operation and Development (OECD) benchmarking emphasizes competency-based reforms and professionalization efforts while also noting persisting implementation challenges and administrative complexity features that are consistent with reform layering rather than full convergence (OECD, 2025). However, these frameworks remain largely descriptive and do not provide compact indicators for estimating the degree of hybridization within a civil service system.

Central Asia offers a relevant empirical setting for hybrid governance research, as administrative reforms across the region typically combine international policy learning with strong post-Soviet legacies and centralized political authority. Within this context, Kazakhstan has pursued sustained public administration modernization and positioned itself as a regional reform leader. Nevertheless, recent high-impact research explicitly characterizes Kazakhstan’s public

administration as hybrid governance, emphasizing modernization layered on top of Soviet-era institutional structures and challenging liberal-democratic bias in public administration theory (Knox & Orazgaliyev, 2025).

At the micro and meso levels, empirical studies further reinforce the hybrid character of Kazakhstan's civil service. Survey-based evidence indicates that job security remains a highly valued motivator among civil servants and is positively associated with public service motivation and job satisfaction, illustrating the limits of uncritical policy transfer from advanced economies (Musagulova & Van der Wal, 2019). Complementing this, large-scale assessments of civil servants' competencies highlight persistent capacity challenges and the role of organizational culture in shaping reform outcomes (Bokayev et al., 2024). Together, these findings support an interpretation of Kazakhstan's civil service as a hybrid institutional space combining selective openness with stability-oriented incentives.

Overall, the literature establishes hybrid governance as a product of reform layering (Christensen & Læg Reid, 2015; Goldfinch & Halligan, 2024) and positions Kazakhstan as an empirically salient case within this global debate (Knox & Orazgaliyev, 2025). However, research on Central Asia remains largely descriptive and lacks replicable, indicator-based approaches for quantifying hybridization and comparing variation within a single administrative system. This study addresses this gap by operationalizing hybrid governance through two indicators, the EIS and the SBI which capture recruitment permeability and source balance as measurable dimensions of hybridity.

Unlike previous studies on hybrid governance, which predominantly adopt a descriptive or conceptual approach (Christensen & Læg Reid, 2015; Knox & Orazgaliyev, 2025), this study develops a quantitative and replicable framework for measuring hybridity at the regional level. While existing research on Kazakhstan's civil service emphasizes reform narratives, institutional culture, and policy alignment (Karini, 2024; OECD, 2025), it lacks compact indicators capable of capturing variation in institutional permeability and recruitment diversity across administrative units.

This study extends the current literature by operationalizing hybrid governance through two measurable indicators the EIS and the SBI and by applying cluster analysis to identify distinct regional patterns of hybridization. In doing so, it moves beyond descriptive assessments and provides an empirical basis for comparing degrees of hybridity within a single administrative system, while also opening the way for an institutional interpretation of why regional variation in permeability emerges.

From an institutionalist perspective, regional variation in hybridization should not be interpreted as merely descriptive variation in recruitment outcomes. Economic development may function as a structural enabler of administrative permeability by shaping the density of regional labor markets, the institutional capacity of public organizations, and the intensity of elite circulation between state and non-state sectors. Regions with more diversified economies and stronger administrative infrastructures are more likely to absorb external entrants, process heterogeneous professional trajectories, and sustain selective openness without undermining bureaucratic stability. Conversely, regions characterized by narrower labor markets and stronger dependence on established administra-

tive routines may reproduce more closed recruitment patterns through path-dependent mechanisms. This perspective helps explain why hybridization may emerge unevenly across regions and provides a theoretical bridge between institutional context and observed differences in EIS and SBI.

METHODOLOGY

Research design and level of analysis

This study employs a quantitative cross-sectional design aimed at assessing the degree of implementation of the hybrid civil service model through patterns of intersectoral mobility. The methodological approach is based on administrative data monitoring, which involves the systematic collection and analysis of secondary data obtained from official sources. The unit of analysis is the regional department of the Agency of the Republic of Kazakhstan for Civil Service Affairs ($n = 12$). Each observation includes six variables corresponding to different sources of staff appointments ($p = 6$). All data are aggregated at the regional level, thereby avoiding risks of ecological fallacy and ensuring comparability across administrative units.

Data sources and sampling

Empirical data were drawn from official responses provided by twelve territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs to a standardized request concerning new civil service appointments between 1 January and 1 September 2025. Originally, twenty departments were contacted; eight were excluded due to incomplete or inconsistent information. The final dataset contains 1,529 appointments across twelve administrative regions, each record summarizing the composition of newly appointed officials by their previous employment sector. Internal validation confirmed consistency between total and categorical counts for every region.

Classification and coding of variables

To ensure uniformity, all responses were harmonized into a six-category classification of recruitment sources:

- Private sector (Private);
- Quasi-state sector (Parastatal);
- Government agencies (Gov);
- Budget-funded organizations (Budget);
- Unemployed individuals (Unemployed);
- Other sources (Other).

For each region, the share of appointees from each source was calculated as a percentage of total appointments. All values were normalized to a 0–100% scale.

Indicators of institutional permeability

To measure the openness of civil service recruitment, two quantitative indicators were developed: the EIS and the SBI.

(a) EIS

$$EIS_i = \frac{Private_i + Parastatal_i}{Total_i} \times 100$$

Private_i - number of recruits from the private sector in region *i*;

Parastatal_i - number of recruits from the quasi-state sector;

Total_i - total number of new appointments in region *i*.

Interpretation

EIS measures the percentage of new appointees coming from external (non-state) sectors. Values range from 0 to 100:

- EIS = 0 → completely closed recruitment system;
- EIS = 100 → fully open system.

Example: If 5 recruits came from the private sector and 3 from the quasi-state sector out of 100 total appointments:

$$EIS = \frac{(5+3)}{100} = 8.0$$

This indicates a low level of permeability (8%).

(b) SBI

$$SBI_i = \frac{Private_i + Parastatal_i}{Gov_i + Budget_i + 1} \times 100$$

Gov_i - number of appointees transferred from government agencies;

Budget_i - number from budget-funded organizations.

The constant “+1” prevents division by zero in cases of negligible internal inflow.

Interpretation

SBI expresses the ratio between external and internal recruitment sources.

- SBI < 10 → predominantly internal recruitment (closed system);
- 10 ≤ SBI < 25 → moderate openness;
- SBI ≥ 25 → high institutional permeability.

Example: If 8 recruits came from external sources and 80 from internal ones:

$$SBI = \frac{8}{(80 + 1)} \times 100 = 9.9$$

This also reflects a closed recruitment structure. For the purposes of the core indicators, external inflow was operationalized as the combined share of entrants from the private and quasi-state sectors. This aggregation was intended to capture overall recruitment permeability from outside the core civil service while maintaining a parsimonious and replicable measurement model. At the same time, these categories are not institutionally identical: private-sector recruitment may reflect stronger market-based openness, whereas quasi-state recruitment may also indicate circulation within the extended state apparatus rather than fully external entry. To address this distinction, the Results section provides a supplementary descriptive disaggregation of private – and quasi-state inflows alongside the composite indicators.

Statistical analysis procedures

All statistical computations were performed in R 4.3.3 (R Core Team, 2023), using the following packages:

dplyr (Wickham et al., 2023) For data aggregation and transformation,

stats For descriptive statistics and normality tests,

cluster and *factoextra* (Kassambara & Mundt, 2020) for clustering and visualization,

ggplot2 (Wickham, 2016) for graphical representation.

Analytical sequence:

- Calculation of EIS and SBI for each region;
- Descriptive statistics (mean, median, SD, IQR);
- Normality testing using the Shapiro–Wilk test;
- Variable standardization was performed using the standard z-score formula:

$$Z_{ij} = \frac{X_{ij} - X_j}{S_j}$$

Where Z_{ij} is the standardized score of variable in .

X_{ij} – mean of variable j , and S_j – its standard deviation;

- Determination of the optimal number of clusters via the elbow method;
- Regional clustering using the k-means algorithm ($k = 3$) with Euclidean distance (Hartigan & Wong, 1979);
- Visualization and interpretation of cluster patterns

All analyses were conducted with the seed fixed at to ensure reproducibility.

Reliability and internal consistency

Internal consistency was verified by calculating the Pearson correlation coefficient between EIS and SBI:

$$r = 0.84, p < 0.01, n = 12$$

indicating strong positive association and high construct validity of both indices.

A sensitivity test—excluding “Unemployed” and “Other” categories—produced no change in cluster composition, confirming model stability.

Representativeness and confidence intervals

Aggregate results were cross-checked with official civil service statistics for 2025; discrepancies did not exceed $\pm 2\%$.

The mean EIS = 6.8% (SD = 1.7), with a 95% confidence interval of [5.0; 8.5].

$$CI_{95\%}(EIS) = [5.0; 8.5]$$

The mean SBI = 8.7% (SD = 2.1), with a 95% confidence interval of [6.2; 11.3],

$$CI_{95\%}(SBI) = [6.2; 11.3]$$

indicating a narrow dispersion of regional differences and overall statistical stability.

Limitations and reproducibility

- Geographical coverage: data available for 12 of 20 regions only. Twenty territorial departments were contacted; eight were excluded because their responses were incomplete or internally inconsistent, resulting in a final sample of twelve regions. This limits the generalizability of the findings, as the derived regional typology should be interpreted as indicative rather than fully representative of the national distribution. With a small number of observations ($n = 12$), estimates and cluster solutions are more sensitive to sampling variability, and rare regional configurations may remain unobserved. At the same time, the included regions span all major macro-regions of Kazakhstan (north, south, east, west, and central), which reduces the likelihood that the results reflect a single geographic context. Future research should replicate the analysis using complete national coverage and, ideally, longitudinal data to assess the stability of hybridization patterns over time.

- Aggregation level: the use of regional-level administrative data does not capture individual-level variation in appointees' profiles or within-region organizational placement.

- Indicator scope: the EIS and SBI capture overall entry permeability but do not fully differentiate the institutional distance or reform significance of distinct external recruitment channels. In particular, entrants from the private sector may indicate stronger market-oriented permeability, whereas entrants from the quasi-state sector may reflect circulation within the extended public sector rather than fully external entry. A more fine-grained, disaggregated analysis of private and quasi-state inflows represents a promising direction for future research. In addition, the indicators measure inflow rather than retention and do not capture the competence, rank, role, or subsequent career trajectories of appointees. Accordingly, the indices are best interpreted as measures of recruitment openness rather than as exhaustive indicators of the depth or quality of hybridization.

RESULTS

Descriptive statistics

Table 1 presents the distribution of entry sources into the civil service across 12 regions of Kazakhstan. The data indicate a prevailing dominance of internal recruitment (from government and budgetary organizations), averaging 64.1%

of total hires. By contrast, entry from outside the core civil service remains comparatively limited.

Table 1

Distribution of Entry Sources into Civil Service, % (n = 12 regions)

Region	Government bodies	Budget organizations	Private sector	Quasi-public sector	Unemployed	Others	Total (n)
Akmola	36	27.6	3.5	25.1	7.8	0	199
Aktobe	43	16.9	2.4	17	8.4	12	166
Almaty region	26.4	26.4	5.7	18.9	17	5.6	53
Atyrau	30.9	28.2	4.2	18.3	18.3	0	71
Almaty city	48	26	8.8	12	11.1	1.1	171
Astana	38.5	30.4	1.5	23.7	5.9	0	135
Shymkent	39.6	19.5	2.6	24.7	9.1	4.5	77
Zhambyl	43	22	2.9	19.9	7.2	5	136
West Kazakhstan	39.7	25.6	2.4	14.2	9.2	8.9	126
Kostanay	40.5	22.3	3.8	21.7	8.2	3.5	184
Kyzylorda	31.4	25	2.3	26.5	9.1	5.7	132
Zhetysu	35.4	35.4	2.5	16.5	8.2	2	79
Mean across regions	38.5	25.6	4.2	19	9.3	4	1,529
Internal sources (Gov + Budget)	64.1	—	—	—	—	—	—
External sources (Private + Quasi-public)	9	—	—	—	—	—	—

Source: Compiled by the authors based on data from territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs (2025)

This pattern suggests limited permeability between public and non-state sectors and implies that the hybridization of civil service personnel composition remains in an early phase, with external entrants still forming a minority. Although the EIS aggregates entrants from the private and quasi-state sectors into a single

measure of external inflow, these channels should not be treated as institutionally equivalent. Recruitment from the quasi-state sector may reflect circulation within the extended public sector rather than fully market-based entry. Accordingly, the EIS is best interpreted as an indicator of recruitment permeability into the civil service, not as a direct measure of private-sector penetration.

EIS

Table 2 presents the EIS, which quantifies the proportion of recruits entering the civil service from outside the public sector. Values range from 3.8% in Kostanay to 12.6% in Atyrau, with a mean of 6.8% (SD = 1.7).

Table 2
External Inflow Share (EIS) by region, 2025

Region	Akmola	Aktobe	Almaty region	Atyrau	Almaty city	Astana	Shymkent	Zhambyl	West Kazakhstan	Kostanay	Kyzylorda	Zhetysu	Mean ± SD	95% CI
EIS (%)	6.0	4.8	10.9	12.6	10.8	8.0	7.5	5.7	5.1	3.8	7.3	4.1	6.8 ± 1.7	[5.0; 8.5]

Source: Compiled by the authors based on data from territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs (2025)

XShapiro–Wilk test: $W(12) = 0.97$, $p = 0.81 \rightarrow$ normal distribution confirmed. Value range: 3.8–12.6%. Table 2 shows that Atyrau and Almaty city have notably higher EIS values, reflecting greater openness to private-sector entrants. In contrast, agrarian and peripheral regions maintain low inflow levels, confirming structural inertia within their civil service systems.

SBI

Table 3 provides the SBI, reflecting the evenness of recruitment sources across regions. SBI ranges from 4.3% to 15.7% (mean = $8.7 \pm 2.1\%$), indicating considerable differentiation in recruitment diversification.

Table 3*Source balance index (SBI) by region, 2025*

Region	Akmola	Aktobe	Almaty region	Atyrau	Almaty city	Astana	Shymkent	Zhambyl	West Kazakhstan	Kostanay	Kyzylorda	Zhetysu	Mean ± SD	95% CI
SBI (%)	7.5	6.2	14.0	15.7	13.9	12.3	8.1	7.2	6.5	4.3	7.8	5.0	8.7 ± 2.1	[6.2; 11.3]

Source: Compiled by the authors based on data from territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs (2025)

Shapiro–Wilk test: $W(12) = 0.95$, $p = 0.58 \rightarrow$ normal distribution confirmed. Table 3 shows that regions with higher SBI scores tend to exhibit more diversified recruitment patterns and greater openness to non-traditional entry channels. In this sense, higher SBI values are associated with stronger source balance rather than with private-sector recruitment alone. Conversely, lower SBI values in Kostanay and Zhetysu suggest persistent reliance on traditional internal recruitment channels. Lower SBI values in Kostanay and Zhetysu suggest persistent reliance on traditional internal channels.

Correlation analysis

Table 4 illustrates the relationship between EIS and SBI. The Pearson correlation coefficient ($r = 0.84$, $p < 0.001$) indicates a strong, statistically significant association, implying that regions with higher external inflows also tend to maintain a more diversified recruitment portfolio.

Table 4*Pearson Correlation Matrix (n = 12)*

Variables	EIS	SBI
EIS	1.00	0.84 ***
SBI	0.84 ***	1.00

Note: *** $p < 0.001$. 95% CI for correlation: [0.55; 0.95]

Source: Compiled by the authors based on data from territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs (2025)

This strong positive correlation reinforces the link between openness and balance: greater permeability of entry pathways fosters diversity within the civil service system. While this strong association supports convergent validity, it

also suggests potential multicollinearity if both indices are used simultaneously as predictors in future regression-based models.

Cluster analysis

Table 5 reports the results of the cluster analysis based on EIS and SBI values. Three statistically distinct clusters were identified low, medium, and high hybridization levels ($F(2, 9) = 5.41$, $p = 0.031$, $\eta^2 = 0.55$).

Table 5

Cluster characteristics based on EIS and SBI

Cluster	n (regions)	EIS Mean $\pm$ SD	SBI Mean $\pm$ SD	WCSS
1 (Low values)	6	5.1 ± 0.7	6.2 ± 0.8	3.8
2 (Medium values)	4	7.8 ± 0.8	9.5 ± 0.9	2.9
3 (High values)	2	11.7 ± 0.6	14.8 ± 0.7	1.2
Total WCSS	—	—	—	7.9

Source: Compiled by the authors based on data from territorial departments of the Agency of the Republic of Kazakhstan for Civil Service Affairs (2025)

As seen in Table 5, regions with high economic activity (Atyrau, Almaty) cluster in the upper tier, demonstrating strong hybridization trends. Conversely, low-performing regions form a cluster characterized by minimal external inflow and low diversification, indicating limited reform diffusion across administrative territories.

Robustness check

A series of robustness tests was conducted to verify the stability and internal reliability of the analytical model. First, the categories «unemployed» and «others» were excluded to assess the sensitivity of results to marginal data groups. The recalculated indicators remained consistent (EIS = 7.1%, SBI = 9.0%) and the correlation between them remained strong ($r = 0.83$, $p < 0.01$). Cluster boundaries and membership composition also remained unchanged, indicating high structural stability.

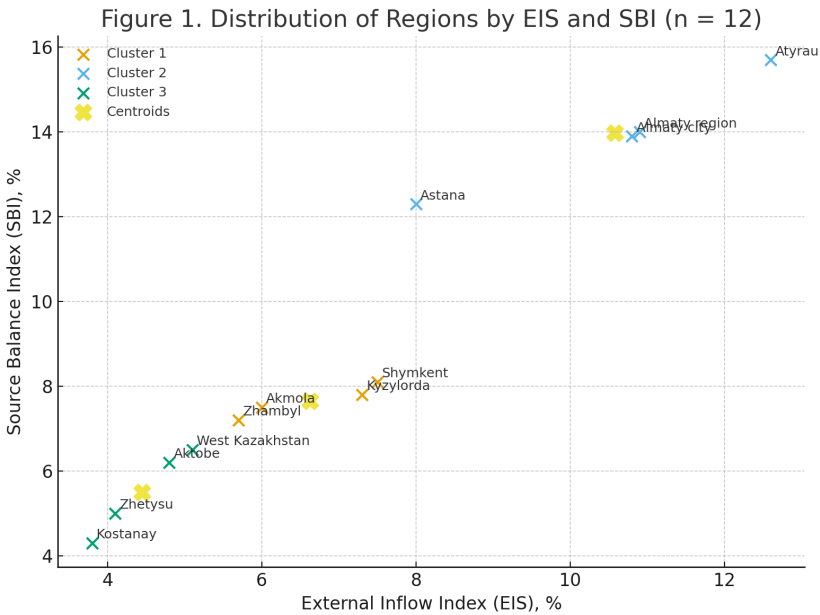
Additionally, a 1,000-iteration bootstrap re-sampling procedure confirmed the persistence of the three-cluster configuration with less than 5% variation in centroid values ($\Delta\text{EIS} = \pm 0.3$; $\Delta\text{SBI} = \pm 0.4$). The average silhouette coefficient (0.71) further validated the compactness and separation of the clusters. These results collectively confirm that the hybridization model of civil service recruitment demonstrates strong internal consistency and robustness to data perturbation, supporting the reliability of the inferred regional typology.

Visualization of clusters

Figure 1 visualizes the distribution of Kazakhstan's regions based on EIS on the x-axis and SBI on the y-axis. Three distinct, non-overlapping clusters emerge, confirming the statistical segmentation reported in Table 5.

Figure 1

Distribution of Regions by EIS and SBI (n = 12). Cluster 1 (low hybridization) is shown in orange, Cluster 2 (medium hybridization) in blue, and Cluster 3 (high hybridization) in green.



Source: Compiled by the authors based on EIS and SBI calculations

As shown in Figure 1, the regional distribution follows a clear structural gradient rather than random dispersion. Regions in Cluster 1 (EIS 3.8–6.0; SBI 4.3–7.5) occupy the lower-left quadrant, indicating low openness and limited recruitment diversity. Cluster 2 (EIS 6.5–8.5; SBI 8–10) forms the middle band, reflecting moderate hybridization with emerging external mobility. In contrast, Cluster 3 (EIS 10–12.6; SBI 13–15.7) is positioned in the upper-right quadrant, representing regions with the most dynamic hybridized recruitment patterns (e.g., Almaty, Atyrau). The visible separation of clusters confirms that the hybridization process in Kazakhstan’s civil service is regionally differentiated rather than uniformly distributed. This spatial pattern suggests that structural reforms concentrate in economically advanced regions, whereas peripheral areas remain institutionally less adaptable.

Reproducibility

All analyses were performed in R 4.3.3 (R Core Team, 2023) on a Windows 11 (64-bit) platform. The workflow included four main stages: data cleaning, normalization, computation of the EIS and SBI, correlation analysis, and K-means clustering. All procedures were implemented using the “dplyr”, “stats”, “cluster”, “factoextra”, and “ggplot2” packages. To ensure full replicability, a fixed random seed was applied (set.seed(42)) and the code was executed on a single-core configuration to avoid randomization effects.

DISCUSSION

The findings reveal a distinct regional–structural pattern in the hybridization of Kazakhstan’s civil service. Differences in the values of the EIS and SBI indices indicate uneven administrative transformation and the emergence of a stable hierarchy of regions in terms of openness and institutional flexibility. The observed range EIS = 3.8–12.6% and SBI = 4.3–15.7%, with mean values of 6.8% and 8.7%, respectively shows that even the most open regions predominantly rely on internal recruitment models.

Hybridization is most advanced in economically developed and digitally active regions, where administrative systems exhibit greater adaptability and diversification of talent sources (Meuleman, 2021). However, economic development should not be interpreted merely as an external correlate of openness. Rather, it can be theorized as a structural condition enabling administrative permeability by shaping the density of regional labor markets, the institutional capacity of public organizations, and the circulation of elites between state, quasi-public, and private sectors. Regions with stronger administrative capacity are more likely to organize competitive recruitment, process heterogeneous professional trajectories, and absorb external entrants without undermining bureaucratic stability. By contrast, peripheral and agrarian regions may reproduce more closed recruitment patterns through path-dependent reliance on internal career channels and narrower pools of external candidates. In this sense, hybridization is not a universal process but a selective and institutionally mediated phenomenon linked to socioeconomic development, administrative capacity, and historically embedded recruitment routines.

Unlike prior studies that interpret hybridity primarily as a conceptual or institutional condition, the present findings demonstrate that hybrid governance can be empirically decomposed into measurable dimensions of openness and source diversification. Consistent with Knox and Orazgaliyev (2025), the findings confirm that Kazakhstan’s public administration is best understood as a hybrid system rather than a linear transition toward a single administrative model. At the same time, the results support earlier arguments about the coexistence of stability-oriented incentives and selective openness in Kazakhstan’s civil service (Mussagulova & Van der Wal, 2019; Bokayev et al., 2024).

However, unlike previous descriptive and macro-level accounts, this study demonstrates that hybridity is not uniform across the country but varies substantially across regions and can be empirically measured through recruitment-based indicators. From a theoretical perspective, these findings contribute to post-NPM and hybrid governance frameworks by empirically demonstrating that hybridity operates as a graded and context-dependent equilibrium rather than a uniform administrative condition. Consistent with the arguments of Pollitt and Bouckaert (2017) and Christensen and Lægreid (2015), the observed regional variation suggests that hybrid governance emerges through differential institutional adaptation, balancing bureaucratic stability with selective permeability to market-based recruitment logics. The strong association between EIS and SBI further indicates that openness and balance are not independent features but jointly constitute an underlying dimension of hybridization. In this sense, the identified clusters can be interpreted as empirically observable hybrid governance regimes, reflecting varying configurations of institutional permeability

and administrative embeddedness rather than mere differences in recruitment intensity.

The identified clustering of regions by EIS and SBI confirms the existence of a gradient of institutional adaptability. At one pole lie regions where modernization and digitalization facilitate the inflow of external specialists; at the other are those dominated by internal career mobility and restricted openness.

Differences between clusters are statistically significant ($F(2, 9) = 5.41$, $p = 0.031$; $\eta^2 = 0.55$), confirming the robustness of the stratification by hybridization degree. A strong correlation between the indices ($r = 0.84$; 95% CI [0.55; 0.95]; $p < 0.001$) indicates a structural relationship between openness and diversification of sources. Hence, the observed empirical pattern reflects a systemic redistribution of human resource flows rather than random fluctuations or short-term reform effects. Robustness testing demonstrated stable centroids ($\Delta EIS \approx \pm 0.3$; $\Delta SBI \approx \pm 0.4$) when excluding certain respondent categories. This confirms that the results are not artifacts of statistical classification and persist under changes in data composition.

The preservation of cluster configuration across parameter variations suggests that the model captures stable structural properties of regional governance systems. An increasing inflow of external personnel is accompanied by the equalization of recruitment sources, indicating the formation of a new institutional equilibrium between bureaucratic and market principles of governance (Christensen & Lægrend, 2015; Vakkuri & Johanson, 2020). At the same time, part of the variation may stem from external labor market factors, differences in private sector density, regional employment structure, and wage levels. However, the strong EIS–SBI correlation and the statistical stability of clusters reduce the likelihood that these variables alone explain the observed gradient. Hybridization thus reflects the interaction between institutional adaptability and market incentives, rather than being merely a byproduct of economic inequality (Vakkuri & Johanson, 2020).

Several limitations must be acknowledged. First, although the EIS and SBI capture overall recruitment permeability, they do not fully differentiate the institutional distance or reform significance of distinct external recruitment channels. The supplementary descriptive disaggregation reported above indicates that quasi-state inflow exceeds private-sector inflow by a substantial margin, suggesting that a considerable part of observed openness reflects circulation within the extended public sector rather than direct market-based entry. In particular, entrants from the private sector may indicate stronger market-oriented permeability, whereas entrants from the quasi-state sector may reflect a weaker form of externalization.

Second, the use of aggregated regional-level data captures inflow but not retention and does not account for the competence, rank, role, intra-departmental allocation, or subsequent career trajectories of appointees. Nevertheless, the set of empirical regularities identified here suggests that hybridization should be viewed as an evolutionary, context-dependent process reflecting regions' capacity for institutional learning and managerial innovation.

In summary, the hybridization of the civil service represents a process of forming new types of administrative equilibrium combining hierarchy, competition, and

adaptability. Regional disparities make this process nonlinear, underscoring that hybrid governance in Kazakhstan develops unevenly and is conditioned by the interplay of economic, institutional, and cultural factors.

CONCLUSION

This study provides an empirical framework for assessing the hybridization of Kazakhstan's civil service through two composite indicators: the EIS and the SBI. Using regional data and K-means clustering, the analysis identified three distinct groups of regions, reflecting structural asymmetries in administrative openness and institutional adaptability. EIS values ranged from 3.8 to 12.6%, and SBI values from 4.3 to 15.7%, indicating a moderate but uneven degree of hybridization across the country. The strong correlation between EIS and SBI ($r = 0.84$, $p < 0.001$) and statistically significant cluster differentiation ($F(2, 9) = 5.41$, $p = 0.031$; $\eta^2 = 0.55$) confirm that hybridization represents a systemic pattern rather than a random outcome of administrative reforms.

Robustness testing ($\Delta\text{EIS} \approx \pm 0.3$; $\Delta\text{SBI} \approx \pm 0.4$) further supports the stability of these findings.

Theoretically, the results advance the understanding of hybrid governance as a dynamic equilibrium between bureaucratic continuity and market-driven adaptation by demonstrating how recruitment-based indicators can be used to operationalize hybridization and capture regional variation in institutional permeability. Empirically, the study demonstrates that hybridization is regionally selective, emerging primarily in economically complex and digitally advanced territories.

Practically, the findings provide actionable evidence for the Agency of the Republic of Kazakhstan for Civil Service Affairs and other policymakers to design differentiated recruitment and capacity-building strategies aligned with local institutional contexts.

Future research should extend this model by incorporating longitudinal data, micro-level competence indicators, and carefully harmonized cross-country comparisons, particularly across post-Soviet and Turkic administrative systems, to explore the temporal and structural mechanisms driving hybridization in public administration.

Beyond the national case, the findings can be cautiously situated within the broader reform trajectories of civil service modernization in other Turkic countries. Although harmonized recruitment-source statistics are not currently available for direct indicator-based comparison, existing descriptive studies suggest that Azerbaijan, Kyrgyzstan, and Türkiye also combine career-based bureaucratic traditions with selective external recruitment and continuing reliance on internal administrative career paths. In a comparative perspective, Kazakhstan's mean external inflow level ($\text{EIS} = 6.8\%$) suggests that the system is more plausibly situated at an early-to-moderate stage of hybridization rather than at a fully consolidated equilibrium. At the same time, this comparison remains provisional because the available evidence across countries is qualitative and institutionally heterogeneous rather than based on standardized recruitment-source data. Accordingly, the main comparative contribution of the present study lies in providing a transferable indicator framework for future standardized comparison across Azerbaijan, Kyrgyzstan, Türkiye, and other post-Soviet administrative

systems once compatible recruitment-source data become available. Overall, this research offers a replicable and data-driven framework for assessing administrative transformation within transitional governance systems. These findings directly address the empirical gap identified in the existing literature and confirm the feasibility of quantitatively operationalizing hybrid governance in Kazakhstan's civil service.

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