Survivor Governance Risk Index (SGRI)

Conceptual and Methodological White Book

Version: 0.1

(Foundational Release)

December 2025

GLOBAL AI GOVERNANCE
RESEARCH CENTER

About This White Book

The Survivor Governance Risk Index (SGRI) White Book introduces a new structural framework for assessing political risk under AI-driven automation. It focuses on a previously under-measured dimension of AI governance: the potential erosion of the socio-economic population base required for inclusive and effective political participation.

Rather than evaluating democratic performance, regime type, or AI technological capability, SGRI provides an early-warning, risk-oriented indicator that examines whether political influence is becoming structurally concentrated among **structurally non-displaceable actors** (hereafter referred to as "**survivors**"), while populations exposed to automation experience declining effective political agency.

This White Book establishes the conceptual foundations, indicator architecture, and methodological design of SGRI, and serves as a reference framework for future empirical implementation and integration into broader global AI governance and competitiveness index systems.

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Executive Summary

Artificial intelligence (AI) is rapidly reshaping economic systems, labor markets, and state capacity. Existing global assessments of AI development and governance have largely focused on technological capability, innovation performance, regulatory readiness, and ethical safeguards. While these dimensions are essential, they overlook a distinct and increasingly consequential risk: **the erosion of the socio-economic population base upon which inclusive political participation depends**.

This **Survivor Governance Risk Index (SGRI) White Book** introduces a new analytical framework to address this gap. Rather than evaluating democratic performance or regime type, SGRI measures a **structural political risk** arising from AI-driven automation, namely, the tendency for political participation, representation, and policy influence to concentrate among those who remain structurally non-replaceable, while populations displaced or marginalized by automation retain formal rights but lose effective political agency.

Why Survivor Governance Matters

Traditional democratic theory presumes broad economic inclusion as the material foundation of political participation. While inequality and exclusion have always existed, most citizens historically remained functionally integrated into production, taxation, and social reproduction, sustaining a wide population base of effective political agency.

AI-driven automation challenges this premise in a qualitatively new way. Unlike previous technological shifts, contemporary AI systems are capable of substituting cognitive, administrative, and service-oriented labor at scale. This enables economic systems to operate with structurally reduced dependence on human labor, particularly among middle- and lower-skill segments of the population.

As a result, displacement increasingly risks becoming **structural rather than cyclical**—and in some cases **persistent rather than transitional**. The central political implication is not necessarily technocratic rule or algorithmic domination. Rather, it is the emergence of **Survivor Governance**: a condition in which political influence progressively aligns with actors who remain structurally non-displaceable within AI-driven economic systems, independent of technical expertise, merit, or democratic intent.

Crucially, this risk often unfolds without overt institutional rupture. Democratic systems may remain intact in formal terms—elections are held, rights persist, and legal frameworks remain in force—while the **effective socio-economic population base required for inclusive political participation gradually narrows**. Over time, this silent contraction may erode political agency even in the absence of visible authoritarian shift.

Executive Summary

What the SGRI Measures—and What It Does Not

The SGRI is designed as a **risk-oriented structural indicator**, not a democracy score or AI capability ranking.

SGRI measures:

- Whether AI-driven automation is contributing to the concentration of structural non-displaceability and economic indispensability within a shrinking subset of the population;
- Whether political participation, representation, and policy responsiveness are becoming increasingly conditioned on survivorship status;
- Whether existing institutional mechanisms possess sufficient corrective capacity to counteract these structural pressures over time.

SGRI does not measure:

- Electoral integrity, civil liberties, or regime legitimacy;
- Overall democratic quality, political stability, or constitutional performance;
- National AI technological sophistication, innovation leadership, or adoption intensity.

SGRI is therefore **complementary** to existing democracy indices, governance metrics, and AI readiness frameworks. Its primary purpose is **early detection**: identifying latent structural risks that may precede visible democratic erosion or institutional breakdown.

Index Architecture

SGRI operationalizes Survivor Governance risk through a **three-dimensional causal framework** designed to capture the interaction between economic survivorship, political participation, and institutional correction under AI-driven automation.

- **Material Survivorship (M)**
  Measures whether AI-driven automation is narrowing the pool of structurally non-displaceable roles, concentrating income among structurally insulated actors, and reducing re-entry opportunities following displacement.
- **Political Participation Skew (P)**
  Evaluates whether political participation, representation, and policy responsiveness are becoming increasingly aligned with survivorship status rather than broad-based inclusion.
- **Corrective Capacity (C)** *(inverse dimension)*
  Assesses whether institutions preserve economic membership, provide inclusive political entry pathways, and bind AI deployment to democratic oversight.

Each dimension comprises three indicators, resulting in **nine core indicators**. The composite index integrates these dimensions to produce a **net structural risk sc**ore, with emphasis placed on **risk profiles, trajectories, and early-warning signals** rather than ordinal country rankings.

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How the Index Is Used

SGRI is designed to support the following analytical and policy-relevant functions:

- **Early-warning analysis** of democratic hollowing and political agency erosion under AI-driven automation;
- **Comparative structural assessment** across countries and governance systems, independent of regime classification;
- **Policy diagnostics**, identifying whether observed risks primarily stem from material survivorship concentration, political participation skew, or insufficient institutional corrective capacity;
- **Modular integration** into broader global AI governance, digital transformation, or competitiveness index systems.

Importantly, SGRI emphasizes **risk profiles and structural trajectories** rather than ordinal country rankings. This design enables nuanced interpretation and targeted policy response **without normative labeling or regime scoring**.

International Typologies

To support interpretation, this White Book introduces a set of **ideal-type Survivor Governance risk configurations**, derived from the interaction among **Material Survivorship (M), Political Participation Skew (P), and Corrective Capacity (C)**.

These typologies illustrate how similar levels of AI adoption can generate **divergent political risk trajectories**, depending on institutional design, participation structures, and corrective mechanisms.

By emphasizing **structural pathways of risk rather than country rankings**, this approach enables policymakers and researchers to identify recurring patterns, compare governance dynamics across systems, and track potential transitions over time, rather than treating countries as isolated or static cases.

Current Scope and Future Upgrades

This White Book represents **SGRI v0.1**, a conceptual–methodological foundation rather than a finalized global ranking. At this stage, the index prioritizes:

- Conceptual clarity and theoretical coherence of the Survivor Governance framework;
- Transparent indicator definitions, normalization procedures, and aggregation logic;
- Illustrative example calculations to facilitate methodological understanding and future replication.

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Future upgrades may include expanded data coverage, empirical scoring across countries, sensitivity and robustness analysis, and periodic updates. The modular architecture of SGRI ensures that such extensions can be incorporated incrementally without altering the core conceptual framework or analytical boundaries established in this White Book.

Contribution and Significance

The Survivor Governance Risk Index contributes a distinct analytical lens to global AI governance discourse by shifting attention from who controls AI to who remains structurally included in the political system under AI-driven economic change.

By conceptualizing survivorship as a measurable structural risk dimension, SGRI enables earlier and more targeted responses to democratic vulnerability—before institutional erosion becomes visible, contested, or irreversible.

SGRI does not claim that Survivor Governance is inevitable. Rather, it provides a framework to identify when such a trajectory becomes plausible, and to support institutional intervention before survivorship solidifies into a durable governance condition.

Methodological Clarification

Within SGRI, material and economic indicators function strictly as observable proxies for structural survivorship, rather than as defining features of survivorship itself.

Structural non-displaceability may arise from legal mandates, institutional gatekeeping roles, political indispensability, asset-backed authority, or governance positioning, many of which cannot be fully captured through labor-market metrics alone. Accordingly, the use of economic indicators reflects measurement feasibility rather than causal primacy, and should be interpreted within the broader structural framework articulated in this White Book.

Part I.
Background and Conceptual Foundation

1. Background

The rapid diffusion of artificial intelligence across economic and administrative systems is increasingly recognized as a transformative force for productivity, labor markets, and state capacity. Existing global assessments of AI development largely focus on technological capability, economic competitiveness, governance readiness, and ethical safeguards. While these dimensions are essential, they do not sufficiently capture a distinct and emerging systemic risk: the erosion of the socio-economic population base upon which effective political participation and democratic governance depend.

Historically, democratic systems have relied on a broad assumption of economic inclusion. While inequality and exclusion have always existed, most citizens remained functionally integrated into production, taxation, and social reproduction. Political participation—whether through voting, representation, or collective organization—was therefore anchored in widespread economic membership and institutional relevance.

AI-driven automation challenges this assumption in a qualitatively new way. Unlike earlier waves of technological change, contemporary AI systems are capable of substituting not only routine manual labor, but also cognitive, administrative, and service-oriented tasks at scale. In doing so, AI enables economic systems to operate with **structurally reduced dependence on human labor**, particularly among middle- and lower-skill segments of the population.

As a result, an increasing share of the population risks **becoming economically and institutionally peripheral rather than cyclically displaced**. This shift carries profound political implications. When large segments of society are no longer central to value creation or institutional functioning, their political relevance may diminish—not through formal disenfranchisement, but through gradual withdrawal, reduced participation, and declining policy responsiveness.

Existing democracy indices and governance indicators are not designed to detect this process. They typically assess institutional arrangements, electoral procedures, civil liberties, or formal participation rights. However, they do not evaluate whether political influence is becoming **structurally concentrated among actors who remain non-displaceable within an AI-driven system**, nor whether the effective population base of political agency is narrowing over time.

The Survivor Governance Risk Index is proposed to address this analytical gap. Rather than evaluating democratic performance or regime type, the index focuses on **structural vulnerability**: the extent to which AI-driven economic transformation may give rise to a political order increasingly shaped by a shrinking subset of structurally non-displaceable actors (“survivors”), while broader populations retain formal rights but experience declining effective political agency.

2. Conceptual Definition

2.1 Definition

Survivor Governance refers to a **structural governance condition** in which political participation, representation, and policy influence progressively concentrate among individuals or groups whose positions are **structurally non-displaceable** within economic, institutional, or governance systems, rather than merely non-automatable at the task or skill level.

Survivorship does **not** equate to high skill, technical expertise, innovation leadership, or labor-market success per se. Actors may remain structurally non-displaceable even when their economic productivity is marginal, provided that their **institutional, legal, asset-based, or political functions remain indispensable** to system operation.

This condition does not imply intentional exclusion, authoritarian consolidation, or technocratic dominance. Rather, it emerges as a **systemic outcome** of AI-driven economic restructuring, when political systems adapt—explicitly or implicitly—to a **reduced pool of structurally central actors**, while broader populations retain formal rights but experience declining effective political agency.

In this framework, “survivors” are defined not by technical competence or innovation capacity, but by **structural non-substitutability**: positions that are institutionally protected, legally mandated, capital-backed, or politically indispensable, and therefore persist independently of labor substitution dynamics.

2.2 Survivor Governance vs. Technocracy

Survivor Governance is analytically distinct from technocracy or notions of “rule by AI experts.”

- **Technocracy** centers on **epistemic power**: authority accrues to those who design, understand, or manage complex technical systems, on the assumption that superior knowledge justifies decision-making authority.
- **Survivor Governance**, by contrast, centers on **structural power**: political influence accrues to those whose positions remain **structurally non-displaceable** within economic, institutional, or governance systems, regardless of technical literacy or expertise.

Under conditions of AI-driven automation, technical expertise itself is often subject to rapid obsolescence, competitive diffusion, and market substitution. By contrast, survivors typically occupy positions embedded in **institutional mandates, legal authority, asset-backed control, or governance gatekeeping roles** that remain insulated from labor substitution dynamics.

As a result, political influence under Survivor Governance tends to consolidate around **survivorship status rather than technical expertise**, even in systems that rhetorically emphasize innovation, merit, or technological competence.

2. Conceptual Definition

2.3 The Structural Causal Chain

The Survivor Governance framework conceptualizes risk through a **three-stage structural pathway**, describing how AI-driven automation may generate cumulative pressures on political inclusion over time. This sequence is analytical rather than deterministic, and its progression depends on institutional mediation and corrective capacity.

- **Stage 1: AI-Driven Automation**
  Large-scale deployment of AI systems reduces systemic dependence on human labor across economic and administrative domains, thereby narrowing the range of positions that remain structurally non-displaceable within production, governance, and institutional systems.
- **Stage 2: Material Survivorship Concentration**
  As structurally non-displaceable positions become scarcer, income stability, institutional relevance, and decision-making proximity tend to concentrate around these roles, increasing the material insulation of survivor groups relative to the broader population.
- **Stage 3: Political Participation and Influence Skew**
  Over time, political engagement, representation, and policy responsiveness may become increasingly aligned with survivorship status, while populations exposed to displacement experience reduced participation, weakened representation, or gradual political exit.

This process does not require formal changes to electoral rules, constitutional arrangements, or legal rights. Democratic institutions may remain intact in procedural terms, even as their social and material foundations of participation erode in substance.

2.4 Scope and Analytical Boundaries

SGRI is designed as a **risk-oriented** structural indicator, not as a normative assessment of democratic quality, political legitimacy, or the ethical alignment of technological systems.

Within it, **AI governance is treated not as an ethical domain per se**, but as a determinant of whether technological systems **preserve or erode effective political agency** under conditions of automation.

Accordingly:

- The index does **not** measure regime type, electoral integrity, or civil liberties.
- The index does **not** rank countries by democratic performance or normative compliance.
- The index **does** measure whether AI-driven economic and institutional change is likely to **narrow the population base of effective political participation and political agency**.

2. Conceptual Definition

Survivor Governance risk can therefore exist in both democratic and non-democratic systems, though its political manifestations may differ. In democratic contexts, it tends to appear as **participation hollowing and representational skew**; in non-democratic contexts, it may reinforce **structural stability without broad-based inclusion**.

2.5 Relationship to Existing Global Index Systems

SGRI is intended to function as a **complementary analytical module**, rather than a replacement, within broader global AI governance, digital transformation, or competitiveness index systems.

While existing indices primarily assess dimensions such as:

- AI capability and innovation capacity;
- Regulatory readiness, governance frameworks, and ethical safeguards;
- Economic contribution, productivity, and growth effects;

the Survivor Governance framework introduces a distinct and previously under-measured dimension:

Whether AI-driven development is structurally undermining the socio-economic population base required for inclusive and sustainable political governance.

Accordingly, SGRI is designed to be modular, upgradable, and interoperable, allowing it to be integrated as a structural risk layer within future global AI index systems without altering their core evaluative logic.

The following sections operationalize the concept of Survivor Governance through a structured indicator architecture. They define the core dimensions, indicator specifications, calculation logic, data processing rules, and risk classification standards used in SGRI.

Part II.

Indicator Overview

3. Index Scope and Purpose

3.1 Scope of Measurement

SGRI is designed to measure structural political risk arising from AI-driven economic transformation. Specifically, it assesses whether the diffusion of artificial intelligence is likely to constrict the population base of effective political participation and influence, thereby increasing the probability that governance outcomes become dominated by structurally non-displaceable groups.

The scope of SGRI is defined by the following principles:

- **Structural focus**: The index captures long-term systemic tendencies and structural shifts in governance capacity, rather than short-term political outcomes or contingent policy events.
- **Risk orientation**: SGRI evaluates vulnerability, exposure, and latent instability, rather than institutional performance, regime type, or normative democratic quality.
- **AI-conditioned causality**: All measured dimensions are explicitly grounded in AI-induced automation, labor displacement, and economic reconfiguration, treating artificial intelligence as the primary conditioning variable shaping governance risk.

3.2 What the Index Measures

SGRI measures the degree to which:

- **Material survivorship** becomes increasingly concentrated within structurally non-automatable roles;
- **Political participation and representation** become progressively aligned with survivorship status, rather than broad-based social inclusion;
- **Institutional mechanisms** succeed or fail in mitigating, buffering, or reversing this concentration effect.

Through these dimensions, the index captures an early-stage structural risk that may precede observable democratic deterioration, institutional erosion, or regime-level transformation, even in the absence of immediate political instability.

3.3 What the Index Does Not Measure

To avoid conceptual overlap and analytical misinterpretation, it is essential to clarify the boundaries of SGRI:

- SGRI does not assess electoral integrity, civil liberties, constitutional design, or formal legal rights.
- It does not rank political systems by democratic quality, regime type, or normative governance standards.

3. Index Scope and Purpose

- It does not evaluate AI technological sophistication, innovation capacity, or national AI leadership.
- It does not predict political instability, protest frequency, regime collapse, or short-term political events.

Accordingly, SGRI is complementary to, rather than a substitute for, democracy indices, AI readiness assessments, and political risk or instability forecasts. Its analytical value lies in identifying structural, AI-conditioned governance risk that may emerge prior to—and independently of—observable institutional or regime-level change.

3.4 Intended Use Cases

SGRI is intended to support the following analytical and policy-oriented applications:

- **Early-warning analysis** of democratic hollowing and representational contraction under conditions of AI-driven automation and labor displacement;
- **Comparative structural assessment** across countries or regions, enabling cross-sectional and longitudinal analysis of AI-conditioned governance risk;
- **Policy diagnostics**, identifying whether existing institutional counterweights and redistribution mechanisms are sufficient to offset survivorship concentration;
- **System integration**, serving as a dedicated risk layer within broader global AI, governance, or political-economy index systems.

SGRI is designed to inform **strategic foresight, policy design, and institutional review**, rather than real-time political monitoring or event prediction.

3.5 Non-Intended Uses and Misuse Disclaimer

SGRI is designed for **structural risk analysis and policy-oriented assessment**. It is **not intended** for the following uses:

- **Operational or tactical decision-making**, including electoral strategy, security planning, or real-time political intervention;
- **Country labeling or regime classification**, such as assigning democratic status, legitimacy scores, or governance “grades”;
- **Short-term forecasting**, including predictions of protests, instability, regime collapse, or political violence;
- **Justification for political pressure**, sanctions, or conditionality without complementary qualitative analysis and contextual review.

3. Index Scope and Purpose

Misapplication of SGRI outside its intended analytical scope may lead to **category errors**, over-interpretation, or inappropriate policy conclusions. The index should therefore be used **in conjunction with**, rather than as a substitute for, qualitative country expertise, institutional analysis, and established governance and democracy metrics.

3.6 Target Users and Application Mapping

The intended applications of SGRI vary by user group:

- **Policymakers and public institutions**
  Use SGRI as an **early diagnostic tool** to assess whether existing labor, welfare, taxation, and representation mechanisms are sufficient to counter AI-induced survivorship concentration.
- **International organizations and multilateral institutions**
  Integrate SGRI as a **risk-screening layer** within broader AI governance, development, and institutional resilience frameworks to identify emerging structural vulnerabilities.
- **Think tanks and academic researchers**
  Employ SGRI for **comparative and longitudinal analysis**, hypothesis testing, and theory development on AI-driven political economy and governance transformation.
- **Investors and strategic foresight analysts**
  Use SGRI as a **contextual risk indicator** to inform long-term assessments of institutional adaptability and political inclusion, rather than short-term market or country risk signals.

SGRI is designed to support **anticipatory governance**, enabling stakeholders to identify structural risk trajectories **before** they manifest as observable political or institutional breakdown.

4. Index Scope and Purpose

4.1 Architectural Logic

SGRI is structured around a **causal-chain architecture**, explicitly aligning its indicator design with the theoretical sequence defined in the conceptual framework:

AI-driven automation → Material survivorship concentration →

Political participation skew → Governance risk

This architecture treats governance risk not as an exogenous political condition, but as an **endogenous outcome** emerging from AI-conditioned economic restructuring and its distributive effects on social participation.

To operationalize this sequence, SGRI is organized into **three primary dimensions**, each corresponding to a distinct stage in the formation of structural governance risk. Together, these dimensions capture how technological change translates into differential survivorship, how survivorship reshapes political inclusion, and how institutions mediate—or fail to mediate—these dynamics.

The resulting structure enables traceability across stages, allowing analysts to distinguish between upstream economic drivers, intermediate participation distortions, and downstream governance vulnerabilities.

4.2 Core Dimensions

4.2.1 Material Survivorship (M)

Which positions remain structurally indispensable?

This dimension measures the extent to which AI-driven automation **erodes broad-based economic participation** while concentrating income stability, employment continuity, and institutional relevance within **structurally non-displaceable roles**.

Material Survivorship captures the **economic foundation** of Survivor Governance risk by identifying whether access to livelihoods and durable economic membership becomes increasingly restricted to a narrowing subset of actors insulated from automation.

4.2.2 Political Participation Skew (P)

Who continues to participate in and influence political processes?

This dimension evaluates **whether political engagement, representation, and policy responsiveness** become progressively aligned with **economic survivorship status,** rather than distributed across the broader population.

Political Participation Skew captures the **transmission mechanism** through which material concentration translates into political asymmetry, shaping whose preferences are reflected in governance outcomes under conditions of AI-driven restructuring.

4. Index Scope and Purpose

4.2.3 Corrective Capacity (C):

Can institutions counteract survivorship-driven concentration?

This dimension assesses the **existence, scope, and effectiveness** of institutional mechanisms designed to preserve economic inclusion, widen political entry points, and bind AI deployment to democratic accountability and social redistribution.

Corrective Capacity represents the **mitigating and stabilizing component** of the index. It is treated as **a counterweight to aggregate risk**, reflecting the ability of governance systems to offset or reverse survivorship-based concentration dynamics.

4.3 Dimensional Composition

Each primary dimension is composed of three secondary indicators: **Material Survivorship (M), Political Participation Skew (P), and Corrective Capacity (C)**, resulting in a total of nine core indicators.

Table 4.1. Core Dimensions and Indicator Composition of SGRI

Dimension	Indicator Code	Indicator Focus
M	M1	Share of non-automatable employment
	M2	Income concentration among survivors
	M3	Re-entry probability after AI displacement
P	P1	Employment–participation correlation
	P2	Survivor over-representation in political institutions
	P3	Policy responsiveness asymmetry
C	C1	Economic membership preservation
	C2	Political entry openness
	C3	Democratic binding of AI decisions

4.4 Aggregation Logic

SGRI is constructed as a composite structural risk indicator, aggregating the three dimensions according to the following functional form:

$$\boldsymbol{SGRI = \alpha \cdot M + \beta \cdot P - \gamma \cdot C} \tag{4.4}$$

4. Index Scope and Purpose

Where:

- ***M*** and ***P*** contribute positively to overall governance risk;
- ***C*** contributes negatively, reflecting its role as an institutional counterweight;
- α and β represent the relative weights assigned to economic concentration and political transmission effects;
- γ represents the moderating strength of institutional corrective mechanisms.

At the Index White Book stage, equal weighting is recommended to **preserve conceptual neutrality**, enhance transparency, and facilitate interpretability across users. This approach also allows for future sensitivity testing and empirical recalibration as validation data accumulate or policy priorities shift.

The aggregation logic is intentionally linear and interpretable, prioritizing analytical clarity over optimization, and ensuring that changes in SGRI can be directly traced back to movements in its constituent dimensions.

4.5 Risk Interpretation Framework

SGRI scores are interpreted in terms of risk bands, rather than rankings or performance grades.

This band-based approach reflects the index's role as a diagnostic and early-warning instrument, rather than a measure of governance quality or institutional success.

Table 4.2. SGRI Risk Bands and Interpretive Framework

Risk Band	Interpretation
Low	Broad-based economic participation is preserved; material survivorship does not systematically structure political influence.
Moderate	Early signs of survivorship-linked participation skew emerge, indicating nascent alignment between economic resilience and political voice.
High	Political influence becomes increasingly concentrated among structurally non-replaceable or non-automatable groups.
Critical	Structural conditions for Survivor Governance are largely in place; economic survivorship strongly determines political participation and policy responsiveness.

Note: This band-based interpretation avoids false precision and reinforces the index's function as an anticipatory signal of structural governance risk, rather than an evaluative scorecard.

4. Index Scope and Purpose

4.6 Modularity and Upgrade Path

The architectural design of SGRI is intentionally modular and extensible, ensuring methodological stability alongside analytical adaptability:

- **Indicator-level modularity**: Each indicator may be refined independently as data quality, coverage, or methodological standards improve.
- **Expandable structure**: Additional sub-indicators or thematic extensions may be introduced without altering the index's core causal logic or aggregation framework.
- **System integration capability**: SGRI may be embedded as a dedicated risk module within broader global AI governance, political economy, or competitiveness index systems.

This design ensures that the Index White Book functions as a stable methodological foundation, capable of supporting future empirical expansion, cross-framework integration, and policy-driven recalibration without conceptual drift.

The following section defines each indicator in detail, including conceptual definition, analytical significance, calculation logic, data processing rules, scoring standards, and international benchmark references.

Part III.
Indicator Definitions and Methodology

5. Dimension M: Material Survivorship

5.1. Non-Automatable Employment Share

5.1.1 Definition

Non-Automatable Employment Share (NAES) measures the proportion of total employment accounted for by occupations exhibiting low exposure to AI-driven automation and high medium-term task stability.

Such occupations are characterized by a combination of **non-routine cognitive functions, social and interpersonal interaction, legal or regulatory responsibility, and institutional or authority-based decision-making**. These task attributes are **not readily substitutable** by current or near-term AI systems, even under optimistic assumptions regarding model capability diffusion and deployment scale.

NAES thus captures the **structural persistence of employment roles** whose continued viability reflects task-level resistance to automation, rather than temporary market conditions or short-term technological lags.

5.1.2 Indicator Significance and Value

NAES captures the material footprint of structural survivorship within the labor market under conditions of AI-driven automation.

As the share of non-automatable employment declines, structural non-displaceability becomes increasingly concentrated, elevating the likelihood that economic stability, institutional relevance, and downstream political influence accrue to a shrinking subset of actors insulated from automation. This concentration effect represents a core upstream risk driver within the SGRI causal chain.

Within the SGRI framework, economic survivorship is treated strictly as an empirical proxy for structural non-displaceability. NAES does not function as a measure of individual productivity, skill level, occupational prestige, or technological competence. Instead, it isolates whether continued economic participation remains broadly accessible, or whether it is progressively restricted to roles structurally resistant to displacement.

A declining NAES therefore signals that AI adoption is not merely transforming tasks within existing jobs, but is systematically eroding the material participation base through which large segments of the population remain economically embedded. When this base contracts, inclusive political agency becomes structurally fragile, even in the absence of formal exclusion, institutional discrimination, or overt democratic backsliding.

For this reason, NAES constitutes a foundational indicator within Dimension M, anchoring subsequent assessments of participation skew and institutional corrective capacity.

5. Dimension M: Material Survivorship

5.1.3 Calculation Formula

NAES is calculated as :

$$NAES = E_{NA} / E_T \tag{5.1}$$

Where:

- E_{NA}denotes employment in occupations classified as non-automatable;
- E_T denotes total employment in the economy.

Occupational classification should be based on standardized taxonomies (e.g., ISCO-08) combined with task-based AI exposure or automatability assessments, rather than sectoral or industry labels alone.

5.1.4 Data Processing Rules

To ensure cross-national comparability and analytical robustness, the following data processing rules apply:

- **Task-based classification**: Occupations should be classified using task-level AI exposure or automatability metrics, rather than industry affiliation alone.
- **Threshold application**: Where continuous exposure scores are available, a threshold-based approach may be applied (e.g., occupations within the lowest quantile of automation risk classified as non-automatable).
- **Employment coverage**: Part-time, temporary, and informal employment should be included where data permit, to avoid systematic underestimation of material participation.
- **Missing data handling**: In cases of incomplete occupational or task data, proxy measures may be employed, provided that assumptions and limitations are explicitly documented.

5. Dimension M: Material Survivorship

5.1.5 Scoring and Risk Classification

Table 5.1. NAES Levels and Risk Interpretation

NAES Level	Risk Interpretation
High	Low survivorship concentration risk; non-displaceable roles remain broadly distributed.
Medium	Emerging contraction of the survivorship base; early signs of concentration dynamics.
Low	High risk of survivorship scarcity; material participation increasingly restricted to a narrow subset of roles.

Note: This categorical interpretation supports diagnostic use and aligns NAES with the broader risk-band logic applied across the SGRI.

5.1.6 International Benchmark (Conceptual)

International benchmarks for NAES are used for **structural comparison rather than performance ranking**.

- **High-NAES systems** typically exhibit combinations of strong public sector employment, regulated professional roles, durable service protections, or institutionalized labor absorption mechanisms.
- **Low-NAES systems** often combine rapid automation adoption with weak re-employment capacity, limited task transition pathways, or insufficient institutional buffering.

Benchmarking serves to contextualize national trajectories within broader structural patterns, rather than to establish normative hierarchies or policy prescriptions.

5. Dimension M: Material Survivorship

5.2. Income Concentration among Survivors

5.2.1 Definition

Income Concentration among Survivors (ICS) measures the proportion of total national income accruing to individuals employed in **non-automatable or structurally protected occupations**.

The indicator assesses whether **material survivorship translates into disproportionate income dominance**, capturing the extent to which economic resilience against automation is accompanied by **systematic income concentration** among structurally insulated groups.

5.2.2 Indicator Significance and Value

Survivor Governance risk is substantially amplified when structural survivorship is accompanied by persistent income concentration. When survivors not only retain employment but also capture a growing share of total income, their political influence is reinforced through wealth accumulation, economic stability, and agenda-setting capacity.

ICS therefore captures the economic power–multiplier effect of survivorship. It distinguishes scenarios in which non-displaceable employment remains broadly distributed from those in which survivorship becomes a pathway to durable economic dominance, increasing the likelihood that political responsiveness aligns with survivor interests.

Within the SGRI framework, ICS serves as the distributional complement to NAES: while NAES measures the breadth of material participation, ICS measures the concentration of economic rewards within that surviving base.

5.2.3 Calculation Formula

ICS is calculated as:

$$ICS = Y_{NA} / Y_T \tag{5.2}$$

Where:

- Y_{NA} denotes aggregate income earned by individuals in non-automatable or structurally protected occupations;
- Y_T denotes total national income.

Where occupational income data are unavailable, household income percentiles may be used as an approximation, with survivorship status inferred from employment composition. Such approximations must be explicitly documented.

5. Dimension M: Material Survivorship

5.2.4 Data Processing Rules

To ensure comparability and interpretability, the following rules apply:

- **Income basis consistency**: Income should be measured consistently on either a pre-tax or post-tax basis across all cases.
- **Capital income treatment**: Capital and asset-based income may be included where survivorship is institutionally asset-linked (e.g., professional licensing, ownership-based roles), provided this inclusion is clearly specified.
- **Data substitution transparency**: Where occupational income data are incomplete, blended labor–asset income estimates may be employed, but must be clearly flagged and methodologically justified.

5.2.5 Scoring and Risk Classification

Within the SGRI framework, ICS is positively associated with governance risk:

- **Higher ICS values** indicate stronger income concentration among survivors and elevated Survivor Governance risk;
- **Lower ICS values** indicate more diffuse income distribution and weaker survivorship-based dominance.

Table 5.2. ICS Levels and Risk Interpretation

ICS Level	Risk Interpretation
Low	Income broadly distributed; survivorship does not confer disproportionate economic dominance.
Medium	Moderate concentration of income among survivors; early reinforcement of survivorship advantage.
High	Survivors dominate income distribution; strong economic amplification of survivorship and elevated governance risk.

This categorical classification aligns ICS with the band-based diagnostic logic used throughout the SGRI, supporting structural interpretation rather than ordinal ranking.

5. Dimension M: Material Survivorship

5.2.6 International Benchmark (Conceptual)

From a comparative perspective, high ICS levels are most commonly observed in systems characterized by strong professional monopolies, licensing regimes, or asset-linked forms of survivorship, where access to durable income streams is institutionally restricted to a narrow subset of non-displaceable roles.

By contrast, lower ICS levels are typically associated with the presence of effective redistributive mechanisms, such as progressive taxation, wage compression, collective bargaining frameworks, or universal transfer systems, that partially decouple income outcomes from structural survivorship.

These benchmarks are employed for structural comparison rather than performance ranking, allowing ICS to contextualize national trajectories within broader patterns of economic concentration and institutional mediation under AI-driven transformation.

5. Dimension M: Material Survivorship

5.3. Re-entry Probability after AI Displacement

5.3.1 Definition

Re-entry Probability after AI Displacement (RPAD) measures the likelihood that individuals displaced by AI-driven automation are able **to re-enter stable, non-automatable employment** within a defined time horizon.

The indicator captures **the reversibility of economic displacement**, distinguishing temporary dislocation from structurally persistent exclusion from non-displaceable roles.

5.3.2 Indicator Significance and Value

Survivor Governance risk increases sharply when economic displacement becomes structurally irreversible. When individuals displaced by AI cannot realistically regain access to economically indispensable roles, survivorship ceases to function as a transitional condition and instead evolves into a closed structural status.

RPAD therefore measures economic permeability—the degree to which labor markets and institutions allow displaced individuals to regain durable economic participation. This permeability is a critical precondition for long-term political inclusion, as irreversible exclusion from material participation undermines the social basis of broad political agency.

Within Dimension M, RPAD complements NAES and ICS by capturing not the size or concentration of the survivorship base, but its openness over time.

5.3.3 Calculation Formula

RPAD is calculated as:

$$\boldsymbol{RPAD = N_{re} / N_{disp}} \tag{5.3}$$

Where:

- $\boldsymbol{N_{re}}$ denotes the number of individuals displaced by AI-driven automation who re-enter stable, non-automatable employment within time horizon t;
- $\boldsymbol{N_{disp}}$ denotes the total number of individuals displaced by AI-driven automation.

The recommended time horizon *t* is **3–5 years**, , reflecting medium-term labor adjustment rather than short-term retraining or temporary reemployment effects.

5. Dimension M: Material Survivorship

5.3.4 Data Processing Rules

To ensure analytical consistency and comparability, the following rules apply:

- **Displacement attribution**: Displacement events should be explicitly linked to automation or AI adoption, rather than to cyclical or non-technological shocks.
- **Re-entry stability criteria**: Re-entry must satisfy predefined stability thresholds (e.g., minimum employment duration, income floor, or contract security).
- **Exclusion of marginal employment**: Temporary, informal, or marginal employment should not be counted as successful re-entry.
- **Data substitution**: In the absence of longitudinal administrative data, cohort-based or survey-based estimates may be employed, provided methodological assumptions are clearly documented.

5.3.5 Scoring and Risk Classification

Within the SGRI framework, RPAD is inversely related to governance risk:

- **Higher RPAD values** indicate greater economic reversibility and lower risk of structural exclusion;
- **Lower RPAD values** indicate reduced re-entry capacity and elevated Survivor Governance risk.

Table 5.3. RPAD Levels and Risk Interpretation

RPAD Level	Risk Interpretation
High	High reversibility of displacement; low risk of structural closure.
Medium	Partial re-entry pathways exist; displacement reversibility is uneven.
Low	Structural exclusion is likely; displacement leads to persistent economic marginalization.

Note: This band-based interpretation aligns RPAD with the diagnostic logic applied across Dimension M and the broader SGRI.

5. Dimension M: Material Survivorship

5.3.6 International Benchmark (Conceptual)

From a comparative perspective, high RPAD systems typically feature robust retraining-to-placement pipelines, active labor market policies, and institutionally protected re-entry channels linking displaced workers to non-automatable roles.

By contrast, low RPAD systems are characterized by automation-driven displacement without durable reintegration, resulting in persistent labor market exclusion and heightened survivorship closure.

Benchmarking is used for structural comparison rather than performance ranking, situating national trajectories within broader patterns of labor market permeability under AI-driven transformation.

5. Dimension M: Material Survivorship

5.4 M-Dimension Aggregation

The Material Survivorship Index (MSI) aggregates the three indicators within Dimension M to capture the overall degree of concentration, persistence, and closure of economic survivorship.

The index is computed as:

$$\boldsymbol{MSI} = \boldsymbol{mean}(\boldsymbol{NAES}, \boldsymbol{ICS}, \boldsymbol{inverse}(\boldsymbol{RPAD})) \tag{5.4}$$

Where:

- **NAES** reflects the breadth of non-automatable employment;
- **ICS** captures the degree of income concentration among survivors;
- **inverse(RPAD)** represents the degree of displacement irreversibility, transforming re-entry capacity into a closure risk metric.

All component indicators are normalized and directionally aligned prior to aggregation, such that higher values consistently indicate greater structural survivorship concentration and reduced economic permeability.

Higher MSI values therefore indicate a narrower, more concentrated, and less reversible survivorship structure, contributing positively to overall Survivor Governance risk within the SGRI framework.

The use of a simple mean preserves conceptual neutrality and interpretability, ensuring that no single mechanism—coverage, concentration, or reversibility—dominates the dimension absent empirical justification.

The following section introduces Dimension P (Political Participation Skew), examining how material survivorship dynamics translate into differential political participation, representation, and policy responsiveness.

6. Dimension P: Political Participation Skew

WHO continues to participate in and influence political processes under AI-driven economic stratification?

The **Political Participation Skew dimension** examines whether political participation, representation, and policy responsiveness become increasingly aligned with economic survivorship status under conditions of AI-driven automation and displacement.

While formal political rights may remain legally universal, this dimension evaluates whether effective political influence—including participation intensity, agenda access, and responsiveness of institutions—becomes progressively concentrated among structurally non-replaceable groups. In this sense, the dimension does not assess legal exclusion, but rather the functional narrowing of political agency.

This dimension operationalizes the **transmission mechanism** through which economic survivorship translates into governance outcomes, linking material indispensability to political voice and influence.

6.1. Employment–Participation Correlation

6.1.1 Definition

Employment–Participation Correlation (EPC) measures the statistical association between stable employment status and levels of political participation, including voting, civic engagement, and political expression.

The indicator captures whether political participation increasingly depends on economic stability and labor market attachment, rather than citizenship status alone.

6.1.2 Indicator Significance and Value

Democratic systems presume that political participation is broadly accessible across socioeconomic groups. When political participation becomes strongly correlated with employment stability, political voice contracts alongside economic exclusion, even when formal political rights remain intact.

A high EPC value indicates that individuals displaced or marginalized by AI-driven automation are systematically less likely to participate in political processes. This signals early-stage democratic hollowing, in which participation asymmetries emerge prior to observable institutional erosion or regime change.

Within the SGRI framework, EPC captures the behavioral manifestation of survivorship-linked political inequality.

6. Dimension P: Political Participation Skew

6.1.3 Calculation Formula

EPC is calculated as:

$$EPC = corr(Employment\ Status, Political\ Participation) \tag{6.1}$$

Where:

- **Employment Status** denotes an individual's labor market position, classified at minimum into stable employment, precarious employment, and AI-related displacement categories;
- **Political Participation** denotes observed levels of political engagement, including voting turnout, civic participation, organizational membership, or other validated participation indices.

Correlation may be estimated using Pearson or Spearman coefficients, or through regression-based measures (e.g., logistic or probit models), depending on data availability and variable structure.

Where individual-level participation data are unavailable, survey-based group averages or cohort-level estimates may be used as proxies. Any such approximations must be explicitly documented and justified.

6.1.4 Data Processing Rules

Employment status should, where data permit, distinguish among stable employment, precarious employment, and AI-related displacement categories.

Political participation may be operationalized using voting turnout, civic or organizational membership, survey-based engagement indices, or comparable validated measures.

Both cross-sectional and panel survey data may be employed, depending on availability and analytical design.

For cross-country comparison, correlation coefficients should be normalized to account for differences in survey instruments, political systems, and participation baselines.

6.1.5 Scoring and Risk Classification

Higher EPC values correspond to greater alignment between political participation and employment stability, and therefore indicate higher Survivor Governance risk.

Lower EPC values indicate that political participation remains broadly independent of employment status, consistent with inclusive participation norms.

6. Dimension P: Political Participation Skew

Table 6.1 EPC Level and Risk Interpretation

EPC Level	Risk Interpretation
Low	Political participation broadly independent of employment status.
Medium	Emerging participation skew linked to employment stability.
High	Political participation strongly dependent on stable employment.

6.1.6 International Benchmark (Conceptual)

- Low-EPC systems typically feature strong welfare states, universal civic norms, or institutional arrangements that decouple political participation from labor market status.
- High-EPC systems often exhibit fragmented social protection, employment-linked civic engagement, and limited political participation among economically displaced groups.

Benchmarks are used for structural comparison and risk interpretation, not for regime ranking or performance evaluation.

6. Dimension P: Political Participation Skew

6.2. Survivor Over-Representation Index

6.2.1 Definition

Survivor Over-Representation Index (SORI) measures the extent to which individuals occupying **structurally protected or economically non-replaceable positions** are over-represented within **political decision-making bodies**, relative to their share in the general workforce.

The indicator captures whether economic survivorship translates into **disproportionate descriptive representation** in formal political institutions.

SGRI does not treat AI as a sole causal driver. Instead, SORI evaluates **whether AI-conditioned economic transformation coincides with participation skew beyond historical or institutional baselines.**

6.2.2 Indicator Significance and Value

When political representation becomes skewed toward economically insulated groups, policy agendas are increasingly shaped by actors less exposed to automation-related risks. Even in the absence of formal exclusion, such over-representation **can systematically marginalize the preferences, experiences, and interests of displaced or replaceable populations.**

SORI captures the institutional embodiment of Survivor Governance risk, marking the transition from participation asymmetry to structural dominance within decision-making bodies.

6.2.3 Calculation Formula

SORI is calculated as:

$$SORI = R_s / W_s \tag{6.2}$$

Where:

- R_s denotes the share of political positions held by individuals classified as survivors.
- W_s denotes the share of survivors in the overall workforce.

A SORI value greater than 1 indicates over-representation of survivors relative to their economic presence.

6. Dimension P: Political Participation Skew

6.2.4 Data Processing Rules

Political institutions may include national legislatures, executive cabinets, senior civil service positions, or core regulatory bodies, depending on data availability.

Survivorship classification should follow the same criteria applied in Dimension M, ensuring cross-dimensional consistency.

Occupational background should be measured at entry into political office, rather than current status, to avoid survivorship bias generated by incumbency.

6.2.5 Scoring and Risk Classification

Higher SORI values correspond to greater Survivor Governance risk, indicating increasing institutional concentration of political authority among structurally non-replaceable groups.

Lower SORI values indicate that political representation remains broadly proportional to workforce composition.

Table 6.2 SORI Level and Risk Interpretation

SORI Level	Risk Interpretation
≈1	Proportional representation
>1	Moderate survivor over-representation
≫1	Severe survivor dominance

6.2.6 International Benchmark (Conceptual)

High-SORI systems often feature professionalized political classes, credential-based recruitment pipelines, or bureaucratic career paths that favor economically insulated groups.

Lower-SORI systems exhibit greater occupational diversity among political elites, limiting survivorship-driven institutional closure.

Benchmarks are used for structural comparison rather than normative ranking.

6. Dimension P: Political Participation Skew

6.3. Policy Responsiveness Asymmetry

6.3.1 Definition

Policy Responsiveness Asymmetry (PRA) measures the extent to which public policy responds more strongly to the interests and demands of **structurally non-replaceable (survivor) groups** than to those of populations displaced or marginalized by AI-driven automation.

The indicator captures asymmetric policy attention and outcomes across economic survivorship status.

6.3.2 Indicator Significance and Value

Survivor Governance manifests not only through who participates or who holds office, but ultimately through whose interests public policy systematically serves. When policy responsiveness consistently favors survivors, political equality erodes even where participation and representation remain formally inclusive.

PRA therefore captures the outcome-level expression of survivorship bias, translating participation and representation asymmetries into concrete policy consequences.

6.3.3 Calculation Formula

PRA is calculated as:

$$\boldsymbol{PRA = R_s - R_d} \tag{6.3}$$

Where:

- $\boldsymbol{R_s}$ denotes the policy responsiveness score associated with survivor-aligned issues;
- $\boldsymbol{R_d}$ denotes the policy responsiveness score associated with displacement- or mitigation-aligned issues.

Policy responsiveness may be proxied through **budget allocations, legislative attention, policy adoption rates, or implementation intensity**, depending on data availability.

6.3.4 Data Processing Rules

Policy issues should be classified ex ante as survivor-aligned or displacement-aligned based on substantive policy content.

6. Dimension P: Political Participation Skew

Responsiveness scores may be derived using text analysis, budget analysis, expert coding, or hybrid approaches.

Scores should be normalized to account for policy cycle timing, agenda density, and cross-national institutional differences.

6.3.5 Scoring and Risk Classification

Higher PRA values correspond to greater Survivor Governance risk, indicating that policy outputs increasingly favor structurally non-replaceable groups over displaced or vulnerable populations.

Lower PRA values indicate relatively balanced policy responsiveness across economic groups.

Table 6.3 RA Level and Risk Interpretation

PRA Level	Risk Interpretation
Low	Balanced policy responsiveness
Medium	Moderate survivorship bias
High	Strong survivor-favoring policy skew

6.3.6 International Benchmark (Conceptual)

Low-PRA systems typically exhibit robust redistributive agendas, inclusive social protection frameworks, or explicit policy mechanisms addressing displacement and reintegration.

High-PRA systems tend to prioritize asset protection, fiscal consolidation, or professional and incumbent interests over displacement mitigation.

Benchmarks are used for structural interpretation rather than normative ranking.

6. Dimension P: Political Participation Skew

6.4 P-Dimension Aggregation

The Political Participation Skew Index (PSI) is computed as:

$$PSI = mean(EPC, SORI, PRA) \tag{6.4}$$

Higher PSI values indicate a stronger alignment between political participation, representation, and policy influence and economic survivorship status, contributing positively to overall Survivor Governance risk.

This aggregation captures the extent to which survivorship-based economic stratification translates into systemic political skew, encompassing participation access (EPC), institutional representation (SORI), and policy outcomes (PRA).

The following section defines the Corrective Capacity (C) dimension, examining institutional mechanisms that mitigate, absorb, or counterbalance survivorship-driven concentration of political power.

7. Dimension C: Corrective

CAN institutions counteract survivorship-driven concentration of political influence?

The **Corrective Capacity dimension** evaluates whether existing institutional arrangements are capable of offsetting, absorbing, or neutralizing the political risks generated by AI-driven economic survivorship.

Unlike Dimensions M (Material Survivorship) and P (Political Participation Skew), which capture **the accumulation and transmission of survivorship-based risk**, Dimension C focuses explicitly on mitigating mechanisms. It is therefore treated as an **inverse component** within the overall Survivor Governance Index.

This dimension assesses whether individuals displaced or marginalized by AI-driven economic transformation retain:

- meaningful **economic membership**,
- accessible **political entry channels**, and
- enforceable **procedural safeguards**,

such that survivorship status does **not** translate into durable political dominance or institutional closure.

High corrective capacity indicates that institutional design can interrupt the **survivorship–power feedback loop**, preserving political openness even under conditions of structural economic stratification.

7.1. Economic Membership Preservation

7.1.1 Definition

Economic Membership Preservation (EMP) measures the extent to which individuals outside stable employment remain recognized as full economic members of society, through income guarantees, access to public services, and formally recognized non-market roles.

The indicator evaluates whether economic participation and membership are structurally decoupled from formal employment status, rather than treated as a derivative of labor market attachment.

7.1.2 Indicator Significance and Value

Survivor Governance risk intensifies when economic displacement is accompanied by the loss of material security, social standing, and institutional recognition. Under such conditions, economic exclusion becomes a precursor to political marginalization.

7. Dimension C: Corrective

Conversely, when displaced individuals retain economic membership independent of employment, their capacity for sustained political participation and institutional voice is preserved.

EMP therefore captures the primary structural buffer preventing AI-driven labor displacement from translating into survivorship-based political exclusion.

7.1.3 Calculation Formula

EMP is calculated as:

$$\boldsymbol{EMP = mean(G, S, R)} \tag{7.1}$$

Where:

- $\boldsymbol{G}$ denotes **coverage-adjusted income guarantees**, including universal basic income, unemployment insurance, or comparable social transfer mechanisms;
- $\boldsymbol{S}$ denotes **access to essential public services**, such as healthcare, education, housing, and digital infrastructure, independent of employment status;
- $\boldsymbol{R}$ denotes the **availability of formally recognized non-market economic roles**, including caregiving, community service, or publicly acknowledged civic labor.

Each component is normalized prior to aggregation to ensure cross-system and cross-country comparability.

7.1.4 Data Processing Rules

Income guarantees should be assessed along three dimensions: adequacy (sufficiency relative to basic living standards), coverage (population share protected), and durability (temporal stability and legal entrenchment).

Access to essential public services should include, at minimum, healthcare, education, and digital infrastructure, with attention to both formal eligibility and effective accessibility.

Non-market economic roles encompass publicly supported employment programs, civic or national service schemes, and formally recognized care or community work that confers economic or social standing.

Qualitative policy provisions may be operationalized through standardized coding or expert-scoring frameworks, provided that scoring criteria and assumptions are explicitly documented to ensure cross-system comparability.

7. Dimension C: Corrective

7.1.5 Scoring and Risk Interpretation

Higher EMP values indicate stronger preservation of economic membership outside formal employment, thereby reducing the likelihood that AI-driven displacement translates into durable political exclusion.

From a Survivor Governance perspective, EMP functions as a countervailing structural buffer:

- **High EMP** constrains the conversion of economic survivorship into political dominance by maintaining material security and social recognition for displaced individuals.
- **Low EMP** accelerates governance skew by linking political participation capacity tightly to labor market attachment.

Accordingly, EMP is treated as an inverse-risk indicator in the composite index: higher EMP values correspond to lower overall Survivor Governance risk.

Table 7.1 EMP Level and Interpretation

EMP Level	Interpretation
High	Strong preservation of economic membership
Medium	Partial buffering of displacement effects
Low	Employment-linked economic exclusion

7.1.6 International Benchmark (Conceptual)

High EMP systems are typically characterized by universal social protection regimes, broad access to essential public services, and institutional recognition of non-market economic roles, thereby decoupling economic membership from formal employment status.

Low EMP systems rely predominantly on market participation and stable employment as the primary basis for economic recognition, resulting in heightened vulnerability to exclusion following AI-driven displacement.

7. Dimension C: Corrective

7.2. Political Entry Openness

7.2.1 Definition

Political Entry Openness (PEO) measures the availability, accessibility, and institutional effectiveness of pathways through which individuals outside structurally protected or economically non-replaceable positions can participate in political deliberation and decision-making.

The indicator focuses on **non-elite, non-professionalized entry channels** that operate alongside or outside electoral competition, including deliberative, consultative, and participatory mechanisms.

PEO assesses whether political systems remain permeable to non-survivor populations under conditions of AI-driven economic stratification.

7.2.2 Indicator Significance and Value

Survivor Governance risk does not arise solely from economic displacement or representational skew, but from the **closure of political entry pathways** that prevent displaced populations from influencing collective decision-making.

Even where economic membership is partially preserved, political exclusion may persist if access to deliberation and agenda-setting is restricted to professionalized survivors.

PEO captures the **institutional permeability** of political systems and functions as a key corrective mechanism counteracting survivorship-driven concentration of political influence.

7.2.3 Calculation Formula

PEO is calculated as:

$$\boldsymbol{PEO} = \boldsymbol{mean}(\boldsymbol{A}, \boldsymbol{U}, \boldsymbol{I}) \tag{7.2}$$

Where:

- $\boldsymbol{A}$ denotes the availability of inclusive political entry mechanisms, including citizen assemblies, deliberative forums, consultative councils, or other institutionalized non-electoral participation channels;
- $\boldsymbol{U}$ denotes the utilization and practical accessibility of these mechanisms by non-survivor or economically displaced populations, accounting for economic, informational, digital, and procedural barriers;

7. Dimension C: Corrective

- I denotes the institutional impact of participation outcomes, measured by their influence on agenda-setting, legislative deliberation, policy formulation, or administrative decision-making.

Each component is normalized prior to aggregation to ensure cross-system and cross-country comparability.

7.2.4 Data Processing Rules

Political entry mechanisms may include, but are not limited to, citizen assemblies, deliberative forums, participatory councils, or other institutionalized consultative bodies beyond electoral competition.

Accessibility assessments should account for economic, digital, informational, linguistic, and procedural barriers that may affect participation by displaced or non-survivor populations.

Institutional impact should be evaluated based on whether participation outcomes meaningfully influence agenda-setting, legislative deliberation, policy formulation, or administrative decision-making.

Mechanisms that are formally established but primarily symbolic, advisory-only, or systematically ignored in policy processes should be scored accordingly to reflect limited corrective capacity.

7.2.5 PEO Level and Interpretation

Higher PEO values correspond to lower Survivor Governance risk, indicating that political systems provide accessible, inclusive, and institutionally meaningful entry channels for individuals outside structurally protected or economically non-replaceable groups.

Lower PEO values indicate greater political closure, where participation pathways are increasingly restricted to survivors, reinforcing the translation of economic survivorship into durable political dominance.

Table 7.2. PEO Level and Interpretation

PEO Level	Interpretation
High	Broad and effective political entry
Medium	Limited or selective entry
Low	Political access restricted to survivors

7. Dimension C: Corrective

7.2.6 International Benchmark (Conceptual)

High PEO systems typically institutionalize participatory democracy mechanisms, such as citizen assemblies, deliberative forums, and consultative councils, that provide meaningful agenda-setting or policy-influencing capacity beyond electoral competition.

Low PEO systems rely predominantly on professionalized, career-based political pathways, with limited or symbolic channels for non-elite or economically displaced groups to enter political deliberation or influence policy outcomes.

7. Dimension C: Corrective

7.3. Democratic Binding of AI Decisions

7.3.1 Definition

Democratic Binding of AI Decisions (DBA) measures the extent to which AI-driven decisions affecting economic allocation, social service provision, or public administration are **formally and enforceably constrained** by democratic oversight, accountability, and redress mechanisms.

The indicator focuses on whether AI systems operate within institutional frameworks that subject their outputs to democratic control rather than autonomous or purely technocratic authority.

7.3.2 Indicator Significance and Value

AI systems can significantly amplify Survivor Governance risk when their outputs systematically favor structurally advantaged or economically resilient groups while remaining insulated from democratic scrutiny. In such contexts, algorithmic decision-making may function as a de facto allocation authority without corresponding political accountability.

DBA evaluates whether AI deployment is procedurally bound to democratic institutions in a manner that limits survivor-favoring bias, ensures contestability, and preserves political agency for displaced or vulnerable populations. This indicator captures the institutional governance layer that links AI use to democratic responsibility, accountability, and correction.

7.3.3 Calculation Formula

DBA is calculated as:

$$\boldsymbol{DBA = mean(H, A, R)} \tag{7.3}$$

Where:

- $\boldsymbol{H}$ denotes the presence and effectiveness of human-in-the-loop or human-on-the-loop requirements, ensuring that AI-driven decisions remain subject to meaningful human authority rather than purely automated execution;
- $\boldsymbol{A}$ denotes auditability and transparency provisions, including technical explainability, data traceability, and outcome-level disclosure of AI-driven decisions;
- $\boldsymbol{R}$ denotes the availability and accessibility of redress and appeal mechanisms, allowing affected individuals or groups to contest, correct, or seek remedy for AI-mediated outcomes.

7. Dimension C: Corrective

Each component is normalized prior to aggregation to ensure cross-system and cross-country comparability.

7.3.4 Data Processing Rules

Human oversight requirements should be assessed based on the presence of effective decision authority, rather than symbolic or purely procedural review. Systems in which human actors lack the capacity to override, modify, or halt AI-driven decisions should receive lower scores.

Auditability assessments should encompass both technical-level transparency (e.g., model logic, data provenance, and system documentation) and outcome-level accountability, including the ability to trace and evaluate distributive or allocative impacts.

Redress and appeal mechanisms should be evaluated according to their practical accessibility to non-survivor populations, considering economic, informational, and procedural barriers. Mechanisms that exist formally but are inaccessible in practice should be scored accordingly.

Legal enforceability of oversight, audit, and redress provisions should be weighted more heavily than voluntary guidelines, ethical principles, or non-binding standards when coding and aggregating component scores.

7.3.5 Scoring and Risk Interpretation

Higher DBA values correspond to stronger democratic binding of AI-driven decision-making, indicating that algorithmic systems are subject to meaningful oversight, enforceable accountability, and accessible redress mechanisms. In such systems, AI deployment is institutionally constrained from reinforcing survivorship-based concentration of power, thereby reducing overall Survivor Governance risk.

Lower DBA values indicate weak or symbolic democratic constraints, where AI systems operate with limited human authority, insufficient transparency, or ineffective appeal mechanisms. Under these conditions, AI-mediated decisions may systematically favor structurally non-replaceable groups while remaining insulated from democratic correction, amplifying Survivor Governance risk.

Table 7.3. DBA Level and Interpretation

DBA Level	Interpretation
High	Strong democratic constraint on AI
Medium	Partial or sector-specific binding
Low	AI decisions weakly accountable

7. Dimension C: Corrective

7.3.6 International Benchmark (Conceptual)

High DBA systems embed AI governance within administrative law, constitutional safeguards, and formal democratic procedures, ensuring that algorithmic decisions remain subject to enforceable oversight, transparency requirements, and legally guaranteed avenues for appeal.

Low DBA systems rely on opaque, discretionary, or executive-centered AI deployment, where algorithmic authority is weakly constrained by democratic institutions, increasing the risk that AI systems reinforce survivorship-based power concentration without effective public accountability.

7. Dimension C: Corrective

7.4 C-Dimension Aggregation

The Corrective Capacity Index (CCI) is computed as:

$$\boldsymbol{CCI} = \boldsymbol{mean}(\boldsymbol{EMP}, \boldsymbol{PEO}, \boldsymbol{DBA}) \tag{7.4}$$

Higher CCI values indicate stronger institutional capacity to mitigate, absorb, or counteract survivorship-driven concentration of economic and political power, thereby reducing overall Survivor Governance risk.

This aggregation captures the extent to which social systems preserve economic membership (EMP), maintain open and accessible political entry pathways (PEO), and bind AI-driven decision-making to democratic oversight and accountability (DBA), collectively functioning as structural correctives to survivorship-based dominance.

The following section integrates the M, P, and C dimensions into a composite Survivor Governance Risk Index, and defines overall scoring logic, classification thresholds, and interpretive guidance.

Part IV.
Composite Index Calculation and Risk Classification

8. Composite Index Construction

8.1 Integration Logic

SGRI is constructed as a composite structural risk indicator integrating three core dimensions defined above: Material Survivorship (M), Political Participation Skew (P), and Corrective Capacity (C), where the latter functions as an inverse dimension.

The index is designed to capture a net structural risk condition, in which survivorship-driven concentration in economic and political domains (M and P) is evaluated against the presence and strength of institutional counterweights (C). Rather than assessing economic outcomes, political participation, or institutional quality in isolation, SGRI explicitly examines whether existing corrective mechanisms are sufficient to offset underlying survivorship-based structural pressures.

Accordingly, SGRI does not reward institutional performance per se. Instead, it measures the balance—or imbalance—between concentration dynamics and corrective capacity, reflecting the degree to which survivorship advantages translate into durable governance risk.

8.2 Standardization and Normalization

To ensure cross-country and cross-temporal comparability, all sub-indicators are normalized to a common scale prior to aggregation.

Recommended approaches include:

- Min–max normalization to a [0,1] interval, or
- Z-score normalization followed by bounded transformation

At the Index White Book stage, min–max normalization is preferred due to its transparency, interpretability, and suitability for policy-facing applications.

For indicators in which higher raw values imply lower structural risk, specifically those within the Corrective Capacity (C) dimension, values are inverted prior to aggregation to ensure directional consistency across the index.

8.3 Dimensional Aggregation

Each dimension score is calculated as the arithmetic mean of its three constituent indicators:

$$\boldsymbol{M = mean(M1, M2, M3)} \tag{8.1a}$$

$$\boldsymbol{P = mean(P1, P2, P3)} \tag{8.1b}$$

$$\boldsymbol{C = mean(C1, C2, C3)} \tag{8.1c}$$

8. Composite Index Construction

Equal weighting is applied at the dimensional level to reflect the conceptual parity of indicators within each dimension, in the absence of robust empirical evidence or normative consensus supporting differential weighting schemes.

8.4 Composite Index Formula

SGRI is computed by integrating the three normalized dimension scores as follows:

$$\boldsymbol{SGRI = \alpha \cdot M + \beta \cdot P - \gamma \cdot C} \tag{8.2}$$

Where:

- **M** denotes the Material Survivorship dimension score, capturing structural economic concentration driven by AI-related displacement and non-replaceability;
- **P** denotes the Political Participation Skew dimension score, reflecting the translation of survivorship into political access, representation, and policy influence;
- **C** denotes the Corrective Capacity dimension score, representing institutional mechanisms that mitigate or counterbalance survivorship-driven concentration.

At the conceptual index stage, the following weighting convention is recommended:

$$\boldsymbol{\alpha = \beta = 0.4 \; ; \; \gamma = 0.2}$$

This specification reflects the theoretical premise that risk accumulation mechanisms (Material Survivorship and Political Participation Skew) exert greater and more persistent structural pressure than institutional corrective mechanisms, while still recognizing the moderating role of corrective capacity.

Alternative weighting schemes—such as expert-elicited, scenario-based, or empirically calibrated approaches—may be explored in future iterations of the index.

8.5 Interpretation of Composite Scores

SGRI values range from 0 to 1, with higher values indicating a greater structural risk of Survivor Governance entrenchment.

9. Risk Classification Framework

Importantly, SGRI scores should not be interpreted as direct measures of democratic quality, regime legitimacy, or short-term political stability. Rather, they indicate the likelihood that political influence, participation, and policy outcomes are becoming structurally concentrated among economically and functionally non-replaceable groups, relative to the strength of institutional countervailing mechanisms.

9.1 Risk Bands

To support policy interpretation and cross-system comparison, SGRI scores are classified into four qualitative risk bands, corresponding to distinct structural conditions of survivorship-driven governance dynamics:

SGRI Range	Risk Level	Structural Interpretation
0.00 – 0.25	Low	Broad economic participation remains preserved, and survivorship does not meaningfully structure political influence or access.
0.25 – 0.50	Moderate	Early signs of survivorship-linked participation skew emerge, indicating incipient alignment between economic survivorship and political access.
0.50 – 0.75	High	Early signs of survivorship-linked participation skew emerge, indicating incipient alignment between economic survivorship and political access.
0.75 – 1.00	Critical	Structural conditions conducive to Survivor Governance are largely in place, with survivorship-driven concentration outweighing institutional corrective capacity.

Note: These thresholds are indicative rather than prescriptive and may be refined as empirical distributions and longitudinal datasets become available.

9.2 Risk Profiles vs. Rankings

The SGRI framework explicitly rejects country ranking as a primary analytical output.

Instead, countries or systems should be interpreted in terms of risk profiles, emphasizing:

- Which dimensions (Material Survivorship, Political Participation Skew, or Corrective Capacity) contribute most strongly to overall risk;
- Whether observed risk primarily arises from economic concentration, political amplification, or weakened institutional correction;

9. Risk Classification Framework

- How targeted institutional reforms or policy interventions may alter future risk trajectories.

This profile-based approach avoids normative labeling and competitive ranking, while enhancing diagnostic precision and policy relevance.

9.3 Temporal Interpretation

SGRI is particularly suited for longitudinal analysis, as changes in scores over time can reveal early structural drift even when formal institutional indicators appear stable.

- Rising **M** suggests increasing economic closure and concentration of non-replaceable advantage;
- Rising **P** indicates political amplification of survivorship status;
- Declining **C** reflects weakening corrective or counterbalancing institutional capacity.

When observed jointly, these dynamics may precede visible democratic erosion or governance rigidity by several years, positioning SGRI as an early-warning indicator of structural transformation rather than an ex post evaluative metric.

9.4 Use with Other Indices

SGRI is designed to be used in conjunction with, rather than as a substitute for, existing comparative indices, including but not limited to:

- Democracy and governance indices;
- AI readiness, digital capacity, and innovation indices;
- Economic inequality, labor market structure, and social mobility indicators.

When combined with these measures, SGRI introduces a structural risk lens that captures dynamics not directly observable through performance- or outcome-based indicators. In particular, it highlights whether AI-driven economic and institutional transformation is eroding the population-level foundations required for inclusive governance, even in systems that continue to score well on conventional democratic or innovation metrics.

By focusing on survivorship-driven concentration and institutional counterweights, SGRI complements existing indices by identifying latent governance risks that may remain concealed until formal political or democratic deterioration becomes visible.

The following section provides an illustrative example calculation, demonstrating how SGRI components are operationalized in practice and how composite scores should be interpreted within a comparative analytical framework.

Part V.

Illustrative Example Calculation

10. Purpose and Scope of the Example

This section provides an illustrative example calculation of SGRI to demonstrate how individual indicators are operationalized, aggregated, and interpreted in practice.

The example is conceptual and illustrative only. It does not represent observed or estimated values for any specific country, jurisdiction, or political system, and should not be interpreted as an empirical assessment, comparison, or ranking.

Its sole purpose is to clarify the methodological logic, enhance transparency, and facilitate replication and adaptation in future empirical or policy-oriented applications of the SGRI framework.

11. Hypothetical Input Data

For illustration, assume a hypothetical country with the following normalized indicator values (after data processing and standardization to a [0,1] scale).

11.1 Material Survivorship (M)

Indicator	Description	Normalized Value
M1 (NAES)	Non-Automatable Employment Share	0.62
M2 (ICS)	Income Concentration among Survivors	0.68
M3 (RPAD)	Re-entry Probability after AI Displacement	0.40

Note: Since RPAD is an inverse risk indicator, its value will be inverted during aggregation.

11.2 Political Participation Skew (P)

Indicator	Description	Normalized Value
P1 (EPC)	Employment–Participation Correlation	0.55
P2 (SORI)	Survivor Over-Representation Index	0.60
P3 (PRA)	Policy Responsiveness Asymmetry	0.65

11.3 Corrective Capacity (C)

Indicator	Description	Normalized Value
C1 (EMP)	Economic Membership Preservation	0.70
C2 (PEO)	Political Entry Openness	0.60
C3 (DBA)	Democratic Binding of AI Decisions	0.50

Note: Dimension C values reduce overall risk and will be subtracted in the composite index.

12. Step-by-Step Aggregation

12.1 Compute Dimension M (Material Survivorship)

First, invert M3 (RPAD) to reflect risk orientation, as higher RPAD values indicate lower structural risk:

$$M3' = 1 - RPAD = 1 - 0.40 = 0.60$$

The Material Survivorship Index (MSI) is then computed as the arithmetic mean of its three constituent indicators:

$$MSI = mean(M1, M2, M3')$$

$$MSI = mean(0.62, 0.68, 0.60) = 0.63$$

12.2 Compute Dimension P (Political Participation Skew Index)

The Political Participation Skew Index (PSI) is calculated as the arithmetic mean of its three normalized components:

$$PSI = mean(P1, P2, P3)$$

$$PSI = mean(0.55, 0.60, 0.65) = 0.60$$

12.3 Compute Dimension C (Corrective Capacity Index)

The Corrective Capacity Index (CCI) is computed as the arithmetic mean of its three constituent indicators:

$$CCI = mean(C1, C2, C3)$$

$$CCI = mean(0.70, 0.60, 0.50) = 0.60$$

13. Composite SGRI Calculation

Using the recommended conceptual weighting scheme:

$$\alpha = 0.4;\ \beta = 0.4;\ \gamma = 0.2$$

The composite Survivor Governance Risk Index (SGRI) is calculated as:

$$\mathbf{SGRI = 0.4 \cdot MSI + 0.4 \cdot PSI - 0.2 \cdot CCI}$$

Substituting the computed dimension scores:

$$\mathbf{SGRI = 0.4 \cdot 0.63 + 0.4 \cdot 0.60 - 0.2 \cdot 0.60}$$

$$\mathbf{SGRI = 0.252 + 0.240 - 0.120 = 0.372}$$

14. Risk Classification and Interpretation

14.1 Risk Band Assignment

Based on the predefined SGRI risk classification framework, the computed composite score is assigned as follows:

SGRI Score	Risk Level
0.372	Moderate Risk

This score falls within the 0.25–0.50 interval, corresponding to the Moderate structural risk band.

14.2 Interpretive Summary

An SGRI score of **0.372** indicates a **moderate level of structural risk associated with Survivor Governance**. This suggests that survivorship-linked concentration dynamics are present but have not yet reached a self-reinforcing or systemically dominant stage.

Key interpretive insights include:

- **MSI** reflects a moderate concentration of economic and labor-market advantages associated with structurally non-replaceable groups, indicating partial economic closure driven by AI-related displacement.
- **PSI** reinforces this risk by translating material survivorship into uneven participation access and survivor-favoring policy influence.
- **CCI** provides a partial counterbalance through institutional safeguards and redistributive mechanisms, but its strength is insufficient to fully neutralize pressures generated by M and P.

In practical terms, this profile indicates that institutional counterweights remain functional, yet their buffering capacity may erode if:

- AI-driven displacement accelerates,
- Political participation becomes more tightly coupled to survivorship status, or
- Corrective institutions fail to scale or adapt in response to structural change.

Consequently, systems within this risk band warrant early policy attention, as trajectories can shift toward higher-risk regimes well before overt democratic or governance failures become visible.

15. Analytical Value of the Example

This illustrative calculation demonstrates several key properties of the SGRI framework:

- **SGRI enables dimension-level diagnostics rather than relying solely on aggregate scores**, allowing analysts to identify which structural channels—material survivorship, political participation skew, or corrective capacity—contribute most strongly to overall risk.
- **A moderate composite risk score may conceal elevated vulnerability within specific dimensions**, underscoring the importance of disaggregated analysis for targeted policy intervention.
- **The index supports forward-looking structural risk assessment**, providing early warning signals even in the absence of visible institutional deterioration or formal democratic backsliding.

This example is intended **solely to illustrate index construction and interpretive logic**. Actual country-level assessments require validated and comparable data sources, consistent normalization procedures, and systematic sensitivity analysis to ensure robustness and policy relevance.

Part VI.
International Benchmarks and Country Typologies

16. Purpose of International Benchmarking

The international benchmarking component of the SGRI framework is designed to facilitate **structural comparison rather than normative ranking**. Unlike performance-oriented indices, SGRI does not seek to identify "best-performing" or "worst-performing" countries. Instead, it provides an analytical lens for comparing **risk configurations**—that is, the structural pathways through which AI-driven automation and economic survivorship may reshape patterns of economic participation and political influence.

In this context, international benchmarks serve three primary functions:

- **Contextualization**: situating national SGRI profiles within broader cross-system structural patterns, enabling meaningful comparison without imposing normative hierarchies;
- **Typology construction**: identifying recurring configurations of survivorship risk across different political–economic systems, rather than focusing on country-specific rankings;
- **Policy diagnosis**: clarifying which dimensions—material survivorship, political participation skew, or corrective capacity—drive structural risk in different institutional contexts.

Through these functions, international benchmarking within SGRI supports comparative structural analysis while avoiding reductive score-based judgments, thereby enhancing its value for policy-oriented research and forward-looking governance assessment.

17. Benchmarking Principles

International comparison under the SGRI framework adheres to four core methodological principles:

- **Structure over status**: comparisons prioritize causal structural configurations across the Material Survivorship (M), Political Participation Skew (P), and Corrective Capacity (C) dimensions, rather than regime labels, income levels, or development status;
- **Profiles over ranks**: countries and systems are evaluated as multidimensional risk profiles, not as ordinal rankings, avoiding reductive comparative hierarchies;
- **Comparability with flexibility**: international benchmarks rely on harmonized indicator logic and normalization procedures while allowing for institutional diversity and contextual variation;
- **Dynamic orientation**: comparative analysis emphasizes trajectories, trends, and directional change over time, rather than static cross-sectional snapshots.

Together, these principles ensure that SGRI-based international comparison remains analytically rigorous, policy-relevant, and resistant to normative overinterpretation, reinforcing its role as a structural risk diagnostic rather than a performance index.

18. Core Survivor Governance Risk Typologies

Based on the interaction of Material Survivorship (M), Political Participation Skew (P), and Corrective Capacity (C), four ideal-type configurations of Survivor Governance risk can be identified.

These typologies are analytical constructs intended to support structural interpretation and comparative diagnosis. Empirical cases may exhibit hybrid, transitional, or internally uneven characteristics.

18.1 Type I: Concentrated Survivorship with Weak Correction (High M – High P – Low C)

a) Structural Characteristics

- Rapid AI-driven automation sharply narrows the range of structurally non-displaceable positions, concentrating material security and institutional relevance.
- Political participation, representation, and influence are strongly mediated by employment status, asset ownership, or professional embeddedness.
- Institutional mechanisms to preserve broad economic membership or compensate for displacement remain weak, fragmented, or residual.

b) Risk Profile

This configuration represents the highest structural risk of Survivor Governance. Political influence increasingly converges within a shrinking set of structurally protected groups, while displaced populations retain formal rights but experience declining effective agency and policy leverage.

c) Typical Policy Signals

- Weak or fragmented social protection and income-support systems
- Closed, professionalized, or credential-gated political recruitment pathways
- Limited democratic oversight of AI deployment and automation strategies

18.2 Type II: Concentrated Survivorship with Institutional Buffering (High M – Medium P – High C)

a) Structural Characteristics

- AI-driven automation significantly restructures labor demand, concentrating material survivorship in select sectors or roles.
- Strong corrective institutions partially decouple economic membership from employment through redistribution, public employment, or social guarantees.

18. Core Survivor Governance Risk Typologies

Political participation skew persists but is moderated by institutional design and compensatory mechanisms.

b) Risk Profile

Survivor Governance risk in this configuration is latent but contained. Structural pressures toward concentration remain present, yet corrective capacity limits their translation into durable political dominance.

c) Typical Policy Signals

- Robust welfare systems, retraining programs, and income guarantees
- Formalized social dialogue, corporatist arrangements, or tripartite bargaining
- Sector-specific AI governance frameworks and labor-transition safeguards

18.3 Type III: Diffuse Survivorship with Participation Skew (Medium M – High P – Medium C)

a) Structural Characteristics

- Material survivorship remains relatively diffuse, with no sharp concentration of structurally non-displaceable positions.
- Political engagement and influence are unevenly distributed, correlating with education, professional status, or institutional embeddedness rather than displacement alone.
- Corrective institutions exist but are unevenly accessible, weakly mobilized, or selectively effective.

b) Risk Profile

Risk arises primarily from political amplification mechanisms rather than material exclusion. Survivor Governance may emerge through participation dynamics even in the absence of severe labor displacement or economic closure.

c) Typical Policy Signals

- Persistent turnout, engagement, or representation gaps
- Over-representation of professional, credentialed, or managerial elites
- Consultative or participatory mechanisms with limited policy impact

18. Core Survivor Governance Risk Typologies

18.4 Type IV: Diffuse Survivorship with Strong Correction (Low M – Low P – High C)

a) Structural Characteristics

- AI adoption does not substantially erode broad economic participation or concentrate structural survivorship.
- Political engagement remains largely independent of employment status or material positioning.
- Strong institutional mechanisms preserve both economic membership and political access under technological change.

b) Risk Profile

This configuration represents low structural risk of Survivor Governance. Even under sustained automation, political inclusion, accountability, and corrective responsiveness remain resilient.

c) Typical Policy Signals

- Universal or near-universal social protection mechanisms
- Broad-based and institutionally inclusive participatory channels
- Strong democratic binding of AI deployment and automation decisions

19. Interpreting National Profiles

SGRI country profiles should be interpreted through a **configurational lens**, focusing on:

- **Which dimension primarily drives structural risk**, whether Material Survivorship (M), Political Participation Skew (P), or deficiencies in Corrective Capacity (C);
- **Whether corrective capacity effectively counterbalances** pressures generated by concentrated structural survivorship;
- **How shifts in AI adoption, automation intensity, and governance design** may reconfigure typological positioning over time.

Importantly, **transitions between typologies**—for example, from Type II to Type I or from Type III to Type I—may unfold gradually and without overt institutional reform or regime change. Such dynamics underscore the value of **early-warning structural analysis**, as opposed to reliance on event-driven or outcome-based monitoring alone.

20. Relationship to Existing Global Indices

SGRI typologies are **not intended to replace or compete with** existing international benchmarks, including democracy indices, inequality measures, or AI readiness and innovation assessments.

Rather, they introduce an **orthogonal analytical lens** that focuses specifically on **structural governance risk generated by AI-driven automation**, as opposed to institutional quality, regime type, or technological performance.

Accordingly, a country may perform strongly on democratic procedures, innovation capacity, or AI deployment metrics while simultaneously exhibiting a **Type I or Type III Survivor Governance risk profile**. Such configurations indicate that **concentrated structural survivorship or participation skew** may persist beneath formally inclusive institutions.

Conversely, **lower levels of AI adoption do not automatically imply lower Survivor Governance risk**. Where political participation remains structurally uneven or corrective mechanisms are weakly mobilized, governance risk may remain elevated even in the absence of advanced automation.

21. Use in Comparative and Policy Analysis

International benchmarks and typologies derived from SGRI may be employed to:

- **Identify structural risk clusters** rather than focusing on isolated country cases, enabling comparative analysis of shared governance trajectories;
- **Track structural drift over time** as AI adoption, labor substitution, and institutional responses evolve, thereby supporting early-warning assessment;
- **Support the design of targeted institutional interventions** aligned with dominant risk dimensions—Material Survivorship (M), Political Participation Skew (P), or Corrective Capacity (C);
- **Inform future methodological integration** into broader global frameworks on AI governance, sustainability, inequality, or competitiveness, where structural risk considerations are currently underrepresented.

The final sections of this Index White Book summarize **data source considerations, methodological limitations, and future upgrade pathways**, and present a consolidated reference framework intended to support **transparency, replicability, and subsequent empirical extension** of the SGRI methodology.

Part VII.
Data Sources and References

22. Data Sources

This section outlines **current, prospective, and supplementary data sources** relevant to the operationalization of the Survivor Governance Risk Index (SGRI).

Given the **conceptual and methodological orientation of SGRI v0.1**, data availability, granularity, and cross-national comparability vary substantially across indicators and jurisdictions. Accordingly, the purpose of this section is **not** to assert comprehensive empirical coverage or immediate global applicability. Rather, it aims to establish **transparent, replicable data pathways** that can support:

- Future empirical implementation;
- Cross-country and longitudinal comparison;
- Incremental methodological extension and refinement.

22.1 Material Survivorship (M)

A. M1. Non-Automatable Employment Share (NAES)

a) Current / Widely Used Sources

- International Labour Organization (ILO), *ILOSTAT* — employment by occupation (ISCO)
- OECD, *Employment by Task Content* datasets
- World Bank, *Jobs and Skills Indicators*

b) Prospective / Research-Based Sources

- Frey & Osborne–style occupation automatability estimates
- OECD AI exposure indices by occupation
- National labor force surveys with task-level modules

B. M2. Income Concentration among Survivors (ICS)

a) Current Sources

- OECD, *Income Distribution Database (IDD)*
- World Inequality Database (WID)
- National statistical offices — income by occupation / sector

b) Supplementary Sources

- Luxembourg Income Study (LIS)
- Household survey microdata with occupational coding

22. Data Sources

C. M3. Re-entry Probability after AI Displacement (RPAD)

a) Current / Partial Sources

- OECD, *Job Displacement and Re-employment Statistics*
- ILO, labor transition and retraining surveys
- National longitudinal labor force surveys

b) Prospective Sources

- Administrative unemployment-to-employment records
- AI adoption surveys linked to worker transition outcomes
- Panel datasets tracking displacement due to automation

22.2 Political Participation Skew (P)

A. P1. Employment–Participation Correlation (EPC)

a) Current Sources

- World Values Survey (WVS)
- European Social Survey (ESS)
- International Social Survey Programme (ISSP)

b) Supplementary Sources

- National election studies
- Labor force surveys with civic participation modules

B. P2. Survivor Over-Representation Index (SORI)

a) Current Sources

- Inter-Parliamentary Union (IPU), *Parline* database
- National parliamentary biographies and CV datasets
- Civil service and cabinet composition records

b) Prospective Sources

- Harmonized political elite occupation datasets
- Comparative political recruitment databases

22. Data Sources

C. P3. Policy Responsiveness Asymmetry (PRA)

a) Current Sources

- National budget and expenditure datasets
- Legislative bill and agenda databases
- OECD, *Government at a Glance*

b) Supplementary / Analytical Sources

- Policy text corpora for topic modeling
- Expert-coded policy responsiveness surveys

22.3 Corrective Capacity (C)

A. C1. Economic Membership Preservation (EMP)

a) Current Sources

- OECD, *Social Expenditure Database (SOCX)*
- World Bank, *ASPIRE* social protection indicators
- National welfare and income support statistics

b) Prospective Sources

- Pilot UBI / AI dividend program documentation
- Public employment and civic service program records

B. C2. Political Entry Openness (PEO)

a) Current Sources

- OECD, *Innovative Citizen Participation* database
- National legislation on citizen assemblies and consultations
- Government open participation portals

b) Supplementary Sources

- Comparative deliberative democracy datasets
- NGO and academic evaluations of participatory mechanisms

22. Data Sources

C. C3. Democratic Binding of AI Decisions (DBA)

a) Current Sources

- National AI strategies and AI governance frameworks
- Regulatory texts on algorithmic accountability
- Public sector AI audit and oversight reports

b) International Sources

- OECD AI Policy Observatory
- UNESCO AI ethics and governance documents
- Council of Europe AI and administrative law materials

23. Data Availability and Treatment Notes

Not all indicators included in SGRI are currently measurable with equal precision or consistency across countries. Data availability, methodological standards, and reporting practices vary substantially across jurisdictions and over time.

Where direct measurements are unavailable, **proxy indicators** may be employed, provided that their conceptual relevance and limitations are explicitly documented. In cases where key dimensions rely on **qualitative or institutional features**, policy variables may be converted into ordinal or binary scores using **transparent, pre-defined coding rules** to ensure interpretability and replicability.

Future empirical implementations of SGRI should incorporate **sensitivity analysis and robustness checks**, including alternative proxy specifications, weighting schemes, and normalization methods, to assess the stability of results and to guard against measurement-driven distortions.

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Appendix: Abbreviations and Glossary

A. Abbreviations

Abbreviation	Full Term
AI	Artificial Intelligence
CCI	Corrective Capacity Index
C1 (EMP)	Economic Membership Preservation
C2 (PEO)	Political Entry Openness
C3 (DBA)	Democratic Binding of AI Decisions
M	Material Survivorship (Dimension)
M1 (NAES)	Non-Automatable Employment Share
M2 (ICS)	Income Concentration among Survivors
M3 (RPAD)	Re-entry Probability after AI Displacement
ESS	European Social Survey
EPC	Employment–Participation Correlation
ILO	International Labour Organization
ISCO	International Standard Classification of Occupations
ISSP	International Social Survey Programme
OECD	Organisation for Economic Co-operation and Development
P	Political Participation Skew (Dimension)
P1 (EPC)	Employment–Participation Correlation
P2 (SORI)	Survivor Over-Representation Index
P3 (PRA)	Policy Responsiveness Asymmetry
RPAD	Re-entry Probability after AI Displacement
SGRI	Survivor Governance Risk Index
SOCX	Social Expenditure Database (OECD)
SORI	Survivor Over-Representation Index
UBI	Universal Basic Income
WID	World Inequality Database
WVS	World Values Survey

Appendix: Abbreviations and Glossary

B. Glossary of Key Terms

Artificial Intelligence (AI)
A broad class of computational systems capable of performing tasks that traditionally require human cognitive functions, including learning, pattern recognition, decision-making, and language processing. In the context of SGRI, AI refers specifically to systems whose deployment materially alters labor demand, task allocation, and governance-relevant economic structures.

Corrective Capacity (C)
The institutional ability of a political system to offset or neutralize structural risks arising from economic concentration and participation skew. Corrective capacity encompasses mechanisms that preserve economic membership, maintain political access, and ensure democratic binding of AI deployment and automation-related decisions.

Corrective Capacity Index (CCI)
A composite index measuring the strength of institutional counterweights against Survivor Governance risk. CCI aggregates three sub-dimensions: Economic Membership Preservation (EMP), Political Entry Openness (PEO), and Democratic Binding of AI Decisions (DBA).

Economic Membership
The condition under which individuals remain recognized as full participants in the economic system regardless of formal employment status. Economic membership may be sustained through income guarantees, access to essential services, public or social employment, or institutionally recognized non-market roles.

Material Survivorship (M)
The SGRI dimension capturing survivorship-driven material concentration under AI automation, measured as the normalized aggregate of M1–M3 and interpreted as a risk-oriented indicator of economic closure and non-replaceability.

Material Survivorship Index (MSI)
A composite index measuring the concentration, income dominance, and structural irreversibility of economic survivorship under AI-driven automation. MSI captures material expressions of structural non-displaceability for analytical and measurement purposes, without implying causal primacy of economic factors over political or institutional dynamics.

Employment–Participation Correlation (EPC)
A measure of the degree to which political participation, representation, or policy influence is statistically associated with stable employment status. High EPC values indicate increasing dependence of political voice on economic survivorship.

Income Concentration among Survivors (ICS)
An indicator measuring the share of total national income accruing to structurally non-replaceable or structurally protected groups within the labor and asset distribution system.

Appendix: Abbreviations and Glossary

B. Glossary of Key Terms

Non-Automatable Employment

Employment involving task compositions that are not readily substitutable by current or near-term AI systems. Such employment typically includes non-routine cognitive, social, legal, regulatory, or authority-based functions.

Non-Automatable Employment Share (NAES)

The proportion of total employment accounted for by non-automatable occupations, serving as a core indicator of the breadth of material survivorship under AI-driven automation.

Political Entry Openness (PEO)

The extent to which political institutions provide accessible, institutionally meaningful entry pathways for individuals outside structurally non-replaceable groups to participate in political deliberation, representation, and decision-making.

Political Participation Skew (P)

A structural condition in which political participation, representation, or policy influence becomes disproportionately aligned with economic survivorship status, such that structurally non-replaceable groups exert systematically greater political voice than displaced or economically marginal populations.

Policy Responsiveness Asymmetry (PRA)

A measure of the differential responsiveness of public policy to the preferences and interests of structurally non-replaceable groups relative to displaced, precarious, or economically marginalized populations.

Re-entry Probability after AI Displacement (RPAD)

The likelihood that individuals displaced by AI-driven automation can re-enter stable, non-automatable employment within a defined medium-term horizon. RPAD captures the reversibility of displacement and serves as an indicator of long-term material survivorship risk.

Survivor Governance

A structural governance condition in which political influence progressively concentrates around actors occupying positions of structural non-displaceability, as reflected through material survivorship patterns under AI-driven automation, while formal democratic institutions and procedures remain nominally intact.

Survivor Governance Risk

The likelihood that AI-driven economic transformation erodes the population foundations of inclusive political participation, leading to durable concentration of political influence among structurally surviving groups despite the continued presence of formal democratic mechanisms.

Survivor Governance Risk Index (SGRI)

A composite, risk-oriented structural indicator integrating Material Survivorship (M), Political Participation Skew (P), and Corrective Capacity (C) to assess early-warning signals of Survivor Governance under AI-driven automation.

Appendix: Abbreviations and Glossary

B. Glossary of Key Terms

Survivor Over-Representation Index (SORI)
An indicator measuring the degree to which structurally non-replaceable groups are over-represented in political decision-making bodies relative to their share in the workforce.

Universal Basic Income (UBI)
A policy mechanism providing unconditional income support to all individuals, often proposed as a means of preserving economic membership and mitigating displacement-related exclusion under AI-driven automation.

Note: All abbreviations and definitions follow a unified analytical standard throughout the *SGRI White Book*. Definitions are constructed for conceptual clarity and cross-context comparability, not normative judgment, and are designed to facilitate replication, empirical extension, and longitudinal analysis in future applications.

Appendix: Core Terminology Mapping for SGRI

A. Core Concept Layer

a) Survivors

Recommended term: Structurally non-displaceable groups

Definition (SGRI context): Groups that retain sustained political influence due to their structural position within economic, institutional, or governance systems, and whose authority is not directly threatened by large-scale automation or AI-driven displacement.

Clarification:

- "Survivors" does **not** imply moral legitimacy, merit, or social desirability.
- The term refers strictly to **structural persistence of influence**, not to individual skill superiority, technological competence, or innovation capacity.

b) Non-survivors

Recommended term: Structurally displaceable populations

Definition (SGRI context): Population groups whose economic roles, institutional access, or political participation capacity are vulnerable to automation-induced displacement, resulting in reduced **effective political agency**.

Clarification:

- Displacement may be **partial, gradual, or indirect**.
- Loss of political agency can occur even when **formal political rights remain intact**.

B. Process Layer

a) Displacement

Recommended term: Structural displacement

Definition: A systemic process through which technological automation reduces a population's functional relevance within economic production, public administration, or political mediation channels.

Clarification:

- Structural displacement ≠ unemployment alone.
- It includes loss of bargaining power, representation channels, agenda-setting capacity, and institutional visibility.

b) Survivor Governance

Recommended term: Survivor Governance (structural condition)

Appendix: Core Terminology Mapping for SGRI

Definition: A governance condition in which political authority and decision-making power become increasingly concentrated among structurally non-displaceable groups, as broader populations experience declining effective participation.

Clarification:

- Survivor Governance is **not a regime type**.
- It is a **structural risk condition** that may emerge across democratic and non-democratic systems alike.

C. Risk & Measurement Layer

a) Governance Risk (SGRI usage)

Recommended term: Structural governance risk

Definition: The risk that political systems lose their socio-economic participation base, leading to asymmetries between **formal political inclusion** and **effective political influence**.

Clarification:

- SGRI does **not** assess democratic quality, regime legitimacy, or AI capability.
- It evaluates **early-warning signals of** participation erosion and authority concentration.

b) Political Agency

Recommended term: Effective political agency

Definition: The practical capacity of individuals or groups to influence political outcomes through participation, representation, agenda-setting, or institutional access.

Clarification:

- Effective political agency may decline even when voting rights remain unchanged.
- The distinction between **formal** and **effective** agency is central to the SGRI framework.

D. Explicit Non-Equivalences

Within the SGRI framework, the following equivalences **do not apply**:

- **Survivors ≠ high-skilled workers**
- **Survivors ≠ AI experts**
- **Survivors ≠ economic elites per se**
- **Displacement ≠ unemployment alone**
- **Governance risk ≠ regime instability**

Appendix: Core Terminology Mapping for SGRI

These distinctions are maintained deliberately to preserve conceptual clarity and cross-system applicability.

Structural survivorship may persist **independently of material prosperity.** Accordingly, **Dimension M** reflects patterns of **exposure and insulation** under automation, rather than wealth, income level, or productivity alone.

Clarification:

Within SGRI, survivors may include legally mandated officials, institutional gatekeepers, asset-backed actors, or governance roles whose authority persists independently of labor substitution dynamics or individual economic productivity.

E. Terminology Consistency Rule

For all SGRI-related publications:

- Use **“structurally non-displaceable groups”** at first mention;
- Introduce **“survivors”** in parentheses thereafter;
- Avoid replacing the term with “elites,” “technocrats,” or “insiders” unless analytically justified;
- Maintain the survivor / displaceable distinction consistently across indicators, formulas, and narrative sections.

Note for the White Book

The Survivor Governance Risk Index (SGRI) builds upon original conceptual work developed by the author and draws on established interdisciplinary literature in automation, political participation, and composite index methodology. All references are provided to ensure transparency, analytical traceability, and to facilitate future empirical extension and replication.

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Author Contribution:

The author is the sole originator of the Survivor Governance concept and the principal architect of the analytical framework. The author developed the conceptual foundations, indicator architecture, and methodological design of the Survivor Governance Risk Index (SGRI), and is solely responsible for the interpretive logic and structural typologies presented in this White Book.

Disclaimer

This White Book presents a conceptual and methodological framework for assessing structural political risk under AI-driven automation. It does not constitute an empirical country ranking, policy evaluation, or normative judgment of political systems.

All interpretations, models, and analytical conclusions expressed herein reflect the views of the author alone and do not represent the official positions of any government, international organization, or affiliated institution.

The Survivor Governance Risk Index (SGRI) is designed as an early-warning and diagnostic tool. It does not predict political instability, regime change, or democratic collapse, nor does it assess electoral integrity, civil liberties, constitutional legitimacy, or regime type.

Any illustrative calculations, numerical examples, typologies, or scenario-based interpretations included in this White Book are hypothetical and explanatory only and should not be interpreted as empirical measurements of actual national conditions.

Data and Methodology Disclaimer

SGRI v0.1 prioritizes conceptual coherence and methodological transparency over empirical completeness. Data sources referenced in this White Book vary in availability, comparability, and temporal coverage across jurisdictions.

Where direct measurement is not currently feasible, proxy indicators or structured qualitative coding approaches are proposed solely for future empirical implementation. Such proxies are intended to support methodological exploration rather than definitive assessment.

All future empirical applications of SGRI should be accompanied by appropriate data validation procedures, sensitivity and robustness analysis, and explicit documentation of methodological assumptions and choices.

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Version History

SGRI White Book v0.1

Index-based Structural Risk Framework
Conceptual and methodological foundation

Initial public release: **December 2025**.

This version presents the foundational conceptual architecture and methodological logic of the Survivor Governance Risk Index (SGRI). It is intended to establish a transparent analytical baseline for identifying structural governance risks associated with AI-driven automation.

Future versions may incorporate expanded data coverage, empirical scoring, sensitivity and robustness analysis, and potential integration into broader global AI governance, sustainability, or competitiveness index systems.

Citation Recommendation

Wu, S.-Y. (2025). *Survivor Governance Risk Index (SGRI): Conceptual and methodological White Book* (IWP–25–01, v0.1). EPINOVA LLC.
DOI: 10.5281/zenodo.18050662
Available at: https://epinova.org/iwp2501