Methodological note :

This study adopts a strategic foresight approach to explore the future of Artificial Intelligence (AI) investment decisions in Supply Chain (SC). The used methodology in this paper is divided into two primary phases: data collection and data analysis, aligned with best practices in qualitative foresight research and environmental scanning.

1. Data Collection

To ensure the relevance and timeliness of insights, we focused on materials published within the last three years (2022–2025). The start point for data selection aligns with the launch of ChatGPT (30 November 2022), considered a major inflection point in public AI awareness and adoption.

Two main categories of sources were selected:

- **Academic and Institutional Reports (n = 45):**

  These include peer-reviewed journal articles, policy briefs, and global institutional reports (e.g., from UNCTAD, WEF, OECD, and WTO). Each document was screened to ensure broad applicability, rather than being limited to one country or a narrow sub-domain of SC activity.

- **Industry & Investment Insight Sources (n = 9):**

  Key technology companies and investment trend platforms were reviewed, including: *OpenAI, NVIDIA, Google AI, Microsoft AI, IBM Watson Supply Chain, Amazon, Bloomberg AI & Tech Investment Insights, Goldman Sachs Reports, and Nasdaq Tech Trends.* These sources were selected for their influence in shaping both the technological development and economic expectations of AI.

2. Data Analysis

A qualitative content analysis was conducted on the selected documents using the PESTLE framework (Political, Economic, Social, Technological, Legal, Environmental) to classify and structure the emerging signals, drivers, and trends.

Each identified idea or trend was then counted (presence in the collected documents) and coded with three scoring dimensions to facilitate prioritization:

- **Impact Score (1–5 scale):** Measures the potential influence of a trend on the future of SC and AI investment.

Scoring Logic:

Count (Mentions)	**Impact Score**
1–2 mentions	1 (Low)
3 mentions	2
4 mentions	3

5 mentions	4
6+ mentions	5 (High)

- **Uncertainty Score (1–5 scale) :** Reflects the unpredictability of how the trend will evolve, based on divergence of expert opinion, novelty, and regulatory or market instability.

Scoring Logic:

Situation	**Uncertainty Score**
Predictable and stable environments	1–2
Moderate divergence or limited clarity	3
High disagreement, rapid change, or regulatory ambiguity	4–5

- **Relevance Score**

Formula: Relevance = Impact Score × Uncertainty Score

This composite indicator identifies critical uncertainties—trends that are both highly influential and deeply uncertain—making them ideal candidates for scenario development in foresight.

Outcome

This structured scoring and filtering methodology enabled the identification of two dominant drivers—Technological Integration of AI and Legal Clarity in AI Regulation—which were subsequently used to construct the 2×2 scenario matrix exploring four plausible futures of AI adoption in SC.