**Appendix**

*Table 1: Top Spearman Correlations vs 95% Bootstrap Confidence Intervals*
The strongest correlates of national AI readiness are variables linked to compute scale and market formation, and all of the relationships are positive and statistically significant (p < 0.05) with 95% bootstrap confidence intervals that exclude zero. The top feature is Total_AI_Datacenters (Spearman_rho = 0.913; Mean_r = 0.893; CI_95 = [0.627, 1.000]). Next are investment measures: Private_AI_Investment_2013_2024 (rho = 0.830; mean_r = 0.794; CI_95 = [0.284, 1.000]) and Private_AI_Investment_2024 (rho = 0.782; mean_r = 0.764; CI_95 = [0.207, 1.000]). Measures of ecosystem dynamism are similarly strong: Newly_Funded_AI_Companies_2024 (rho = 0.782; mean_r = 0.753; CI_95 = [0.148, 1.000]) and Newly_Funded_AI_Companies_2013_2024 (rho = 0.745; mean_r = 0.711; CI_95 = [0.118, 1.000]). Innovation outputs also matter: Notable_ML_Models_2003_2024 (rho = 0.758; mean_r = 0.731; CI_95 = [0.150, 1.000]) and Num_AI_Related_Patents (rho = 0.699; mean_r = 0.657; CI_95 = [0.143, 0.959]). Finally, a trust-related survey item, Trust_Companies_Item_8_1_5_PP_Change (rho = 0.691; mean_r = 0.645; CI_95 = [0.190, 0.938]), is also positively associated with readiness.

*Table 2: National AI Compute Initiative - Actions, Target, Justification, & Est'd Impact*
**Actions:**
1. The co-funding of 10 new AI-ready data centres with private partners, fast-track permits, and power connections at pre-zoned sites.
2. Stand up a shared national GPU/accelerator service so universities, startups, and government teams can rent time without leaving Canada.
3. Tie public dollars to open-access slots to support Canadian IP retention.
**Target:** To grow specialized hardware capacity from ~3,108 to ~20,000 "H100-equivalent" units by 2030, and to reach 10 AI data-centres up from the current 5.
**Justification:** Canada's top structural gap is infrastructure. "Total AI data centres" is the #1 correlated feature (Spearman = ~ 0.91) and the top decision-tree splitter (importance = ~ 0.96). Canada has only 5 AI-capable centres, compared with 26 in the US and 24 with China. In the PCA, infrastructure variables (power and hardware capacity) strongly separate high performers from the mid-tier cluster that Canada sits in.
**Est'd Impact:** This will drive the infrastructure pillar directly, and help boost Canada's National Competitiveness Score.

*Table 3: AI Investment Acceleration Fund - Actions, Target, Justification, & Est'd Impact*
**Actions**
1. Launch a federal $1B co-investment fund for late-stage AI scale-ups and infrastructure-dependent products.
2. Offer Scientific Research and Experiment Development tax incentives for AI hardware deployment and national cloud use.
3. Create a pension-compatible sidecar investment vehicle to crowd in private capital.
**Target:** To triple private AI investment from $2.9B to $9B by 2028, and improve Canada's investment ranking from 7th to 4th.
**Justification:** Private AI investment is a top-three correlated feature ($\rho \approx 0.83$ for 2013–24, $\rho \approx 0.78$ for 2024). Canada lags significantly in private capital formation compared with the U.S., U.K., and Singapore. "Newly funded AI companies" is also a high-ranking predictor, so strengthening late-stage funding helps both investment and startup formation metrics.
**Est'd Impact:** Strengthens the Investment and Commercialization pillars. Expected contribution of +2–3 points in the short term and +5 points by 2030, enabling other programs (models, startups) to scale effectively.

***Table 4: Canadian Foundation Model Program - Actions, Target, Justification, & Est'd Impact***
**Actions**
1. Fund 5 large-scale Canadian foundation models, preferably open-weight, built on domestic infrastructure.
2. Guarantee priority access to the national accelerator cluster (6.1).
3. Introduce Canadian IP clauses and SME licensing/fine-tuning programs.
**Target:** Increase Canada's output of notable ML models from 61 to 150 by 2030, and reach Top-5 globally in research model impact.
**Justification:** "Notable ML models" is one of the top five features in correlation and feature-importance rankings ($\rho \approx 0.76$). Model output strongly co-varies with investment and infrastructure in the PCA, indicating it is a central marker of innovation density. Canada's research is strong, but high-visibility model outputs remain modest relative to potential.
**Est.'d Impact:** Direct lift to the Research/Innovation pillar. Helps unlock downstream commercial ecosystems, contributing +2–3 points over the decade.

***Table 5: National AI Literacy & Trust Mission - Actions, Target, Justification, & Est'd Impact***
**Actions:**
1. Introduce free AI micro-credentials for workers and students.
2. Embed "Introduction to AI" modules in K–12 and postsecondary curricula.
3. Launch public awareness campaigns, SME "AI Clinics," and government-wide AI upskilling.
**Target:** Improve Canada's AI literacy rank from ~27 → Top-10 by 2028, increase trust indicators by 15 percentage points.
**Justification:** AI literacy and trust appear heavily in Canada's "Top 10 Gaps" vs. high-performing countries. Multiple trust/literacy indicators show moderate-high correlations with the score ($\rho \approx$ 0.59–0.69). Canada's literacy ranking sits in the bottom third, making this one of the most visible and correctable structural weaknesses.
**Est.'d Impact:** Improves the Operating Environment pillar and boosts adoption of domestic infrastructure and models. Expected +1-2 points in the short term, with larger indirect benefits as adoption improves.

***Table 6: AI Startup Accelerator Network - Actions, Target, Justification, & Est'd Impact***
**Actions:**
1. Establish five regional accelerators matched to local industries (health, climate, finance, resources, public service).
2. Provide procurement pathways and federal demonstration projects.
3. Offer national infrastructure credits (from 6.1) so startups can train/serve models domestically.
**Target:** Increase new AI companies from ~51 to 100+ per year, and add ~10 unicorns by 2028.
**Justification:** "Newly funded AI companies" is a top-ranked predictor ($\rho \approx$ 0.75–0.78). Canada's startup formation rate is far below the Top-3 group. PCA and correlation charts show that startup formation is tightly linked to investment and infrastructure — two of Canada's clearest deficits.
**Est.'d Impact:** Helps build a robust Commercialization ecosystem. Expected +2–3 points over time, plus indirect gains to Investment and Research use of national infrastructure.

*Table 7: Sources of UN AI Data for Feature Importance Analysis*

**Research investment and innovation:**
- Development Score: measures the development of new fundamental algorithms and methodology to support future AI projects. Source: Tortoise Media AI Index (subscore).
- Research Score: measures AI-centric research in a country. Source: Tortoise Media AI Index (subscore).
- Publications per Million: measures the number of scholarly AI publications per million citizens. Source: Our World in Data.

**Adoption and economy:**
- Commercial Score: measures the level of startup and business activity based on AI. Source: Tortoise Media AI Index (subscore).
- Operating Environment Score: measures the regulatory context and public opinion of AI in a country. Source: Tortoise Media AI Index (subscore).
- Large-Scale AI Systems: counts the number of large-scale AI systems deployed in a country. Source: Our World in Data, based on data from Epoch AI.

**Governance and trust:**
- Government Strategy Score: measures government spending on AI initiatives and commitment to AI in national strategies. Source: Tortoise Media AI Index (subscore).
  AI Bills: counts the number of AI-related bills passed into law in 2016–2024. Source: Our World in Data, based on data from Stanford's HAI AI Index.

**Infrastructure:**
- Infrastructure Score: measures the reliability and scale of infrastructure relevant to AI. Source: Tortoise Media AI Index (subscore).

**Human capital and talent:**
- Talent Score: measures the level of expertise in the AI industry's workforce. Source: Tortoise Media AI Index (subscore).

*Table 8: Sources of top-10 AI Nations' AI Data for Benchmarking Analysis*

Research Investment and Innovation:
- Stanford HAI AI Index, Chapter 1 (Research and Development): all data tables for the top-10 AI nations and Canada were used.
- Tortoise Media AI Index (Research and Development subscores): the same subscores were also used for the Feature Importance Analysis.
- OECD.AI AI Publications Dataset: used for the number of AI publications in a country.

**Adoption and Economy:**
- Stanford HAI AI Index, Chapter 4 (Economy): all data tables for the top-10 AI nations and Canada were used.
- Tortoise Media AI Index (Commercial and Operating Environment subscores): the same subscores were also used for the Feature Importance Analysis.

**Governance and Trust:**
- Stanford HAI AI Index, Chapter 6 (Policy and Governance): all data tables for the top-10 AI nations and Canada were used.
- Stanford HAI AI Index, Chapter 8 (Public Opinion): all data tables for the top-10 AI nations and Canada were used.
- Tortoise Media AI Index (Government Strategy subscore): the same subscore was also used for the Feature Importance Analysis.

**Infrastructure:**
- Tortoise Media AI Index (Infrastructure subscore): the same subscore was also used for the Feature Importance Analysis.
- Visual Capitalist (Top 25 Countries with the Most Data Centers): article ranking countries by number of datacenters, as of Jan 2025.
- Statista (Data Centers by Country): dataset on number of data centers by country, as of Nov 2025.
- World Population Review (Computers per Capita): number of computers per 100 people.
- Sherwood News (AI Datacenter Ranking): article ranking countries by datacenters specifically used for AI.
- Epoch AI (Trends in AI Supercomputers): dataset on 500+ supercomputers across countries, including performance, power consumption, and operating cost.
- Energy Institute (Statistical Review of World Energy): 2023 report with energy availability and consumption data by country.
- Zenlayer (Public Latency Table): average network latency between countries (collection date not specified in the table).
  UN E-Government Knowledgebase (E-Government Development Index): index of IT, networking, and communications infrastructure availability.

**Human Capital and Talent:**
- Stanford HAI AI Index, Chapter 7 (Education): all data tables for the top-10 AI nations and Canada were used.
- Tortoise Media AI Index (Talent subscore): the same subscore was also used for the Feature Importance Analysis.
- MacroPolo (Global AI Talent Tracker): tracks AI researcher career paths and cross-country movement for undergrad, graduate, and postgrad stages.

***Table 9: Summary of Key Risks and Mitigation Strategies***

1. Infrastructure
   - Specific Risk: Power grid insufficiency for new data centres
   - Prob: High
   - Impact: High
   - Primary Mitigation Strategy: Pre-zoning sites with utilities; early engagement with utilities; mandated liquid cooling and heat reuse.
2. Talent
   - Specific Risk: Continued "brain drain" of AI talent to the U.S. and abroad
   - Prob: High
   - Impact: Critical
   - Primary Mitigation Strategy: Link GPU access to Canadian residency and IP; IP-anchored fellowships; targeted AI Talent Visa.
3. Economic
   - Specific Risk: Failure of private capital to match public funds
   - Prob: Med
   - Impact: High
   - Primary Mitigation Strategy: First-loss and sidecar capital structures; modernized SR&ED credits for computer and AI infrastructure.
4. Social
   - Specific Risk: Public distrust of AI in government services
   - Prob: Med
   - Impact: Med
   - Primary Mitigation Strategy: National AI Literacy & Trust Mission; strict "human-in-the-loop" governance and transparent AI registries.
5. Execution
   - Specific Risk: Fragmentation between federal and provincial policies
   - Prob: Med
   - Impact: Med
   - Primary Mitigation Strategy: Establish a centralized "AI Delivery Unit" to coordinate across jurisdictions and monitor implementation.