

NANA ASAMOAH, CAIP

The following are a selection of relevant projects, policy initiatives, and publications to which I have contributed to, led or supported—including at the institutional level.

Professional and Industry Experience (Projects)

- 1. Annual Saskatchewan Health Workforce Forecasting Model (Ministry of Health, Government of Saskatchewan, 2022 to 2025)**
 - Designed an advanced demand-supply workforce forecasting model for 42 occupations in 2022 that integrated data on population statistics, vacancies, government commitments, capital projects, attritions, training outcomes, in-migration, and recruitment missions for projections over a 5 to 10-year period.
 - Developed and operationalized a multi-variable prioritization matrix that consolidated other fragmented data pipelines and inter-organization objectives to produce a ranked list of occupations to guide the government budget decisions for expanded training seat, international recruitment and workforce retention initiatives.
 - Led the annual updates of the forecast model and prioritization matrix from 2022 to 2025 by engaging all stakeholders, including data experts from the health authorities, regulatory bodies, educational institutions, and multiple government branches/ministries to secure data inputs and validation of data use.
 - Created all the analytical products—including a 70+ page package with 42 occupational outlooks, key messages, dashboards, and capital project projections, and detailed methodological notes—to translate complex technical outputs into highly understandable inputs for provincial health workforce planning.
 - Delivered verbal presentations on complex model findings and workforce gap analyses to senior officials, including assistant deputy ministers, CEOs, executive directors, directors across multiple ministries and health system partners organizations, to bridge knowledge gaps amongst all stakeholders after every annual forecast update.
 - Designed a post-forecasting impact and shock analyses framework to support business case development for multi-million-dollar provincial budget investment from Cabinet and Treasury Board focused on health workforce initiatives.
 - Authored robust technical documentation, question and answer protocols, and methodology notes to enable long-term sustainability, reproducibility, knowledge transfer, cross-institutional adoption, and iterative future updates as the forecast tool has become a cornerstone tool.
- 2. Saskatchewan Health Authority Health Workforce Forecasting Model (Ministry of Health, Government of Saskatchewan, 2023 to 2025)**
 - Adapted and scaled down Saskatchewan’s provincial workforce forecasting model to meet the operational planning needs of the Saskatchewan Health Authority (SHA) by aligning provincial methodologies with SHA-specific service delivery structures, 39 priority occupation classifications, and health region parameters to enhance precise local decision-making.
 - Led annual updates of the SHA workforce forecast model from 2023 to 2025 and delivered verbal knowledge transfer to the SHA by presenting model methods, assumptions, results, and policy implications directly to directors, analysts, and executives of the SHA.
 - Provided SHA analysts and planners with comprehensive technical documentation and training after every annual update, including detailed methodological notes, assumption registers, question and answer protocols, and step-by-step user guides to support long-term usability and self-sufficiency.
 - Supported operational leaders with in-built capabilities in the forecast model to enable SHA’s internal planner to run independent scenarios, interpret forecast results, and embed workforce modelling insights into strategic and service planning cycles.
- 3. Saskatchewan’s Health Workforce Forecasting Model Review Project (Ministry of Health, Government of Saskatchewan, 2025)**
 - Developed an approved \$140K business case to evaluate Saskatchewan’s Health workforce forecasting model while securing executive buy-in and aligning deliverables to pressing system-level planning needs.
 - Oversaw the full project lifecycle—from drafting the Request for Proposal (RFP) and leading vendor selection to final contract execution and delivery—while co-chairing weekly progress meetings, ensuring clarity of scope, and swiftly addressing project risks across all four phases.
 - Provided strategic and technical leadership throughout the project cycle to guide Deloitte’s evaluation by translating internal forecasting methodology to enable Deloitte to evaluate assumptions, data inputs, and outputs effectively.
 - Shaped all key deliverables—including stakeholder interview analysis, comparative model reviews, and final recommendations—and delivered high-impact presentations to senior officials and executives to support implementation of proposed recommendations.

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- Led the implementation of recommendations from the final report, including process changes and new data integration strategies for a more actionable forecasting tool aligned with strategic workforce planning needs.
- 4. Pan-Canadian Health Workforce Data Enhancement and Feasibility Study (Ministry of Health, Government of Saskatchewan, 2025)**
 - Collaborated with CIHI and KPMG on behalf of Saskatchewan to assess the state of health workforce data collection and identify critical gaps in data availability, comparability, and use across provinces and territories.
 - Contributed expert insights into the emerging health workforce trends and challenges in Saskatchewan while providing data-driven recommendations on priority health professions for enhanced data collection to better inform evidence-based planning and policy.
 - Offered strategic input on data collection for internationally educated health professionals (IEHPs) and training data to support more effective health workforce and system strategies at the national level.
 - Led Saskatchewan's contribution to CIHI's follow-up case study on Health Workforce Information (HWI) in Saskatchewan by spotlighting Saskatchewan's approach regarding internationally educated healthcare professionals (IEHPs) and healthcare professional education data gathering and usage aimed at enhancing predictive workforce planning capabilities.
- 5. Pan-Canadian Health Workforce Forecasting Collaboration, Pilot Project (Ministry of Health, Government of Saskatchewan, 2024)**
 - Partnered with Health Workforce Canada (HWC) to lead the execution of a trial meeting to cross-validate health workforce modelling assumptions and methodologies with other provinces/territories while facilitating knowledge sharing on technical approaches.
 - Delivered a comprehensive presentation on Saskatchewan's approach to forecasting health workforce supply while highlighting data limitations around in-migration, unregulated professions, and post-secondary graduate workforce entry.
 - Co-facilitated in-depth discussions during the trial meeting by actively engaging stakeholders in identifying data sources and proxy assumptions to address gaps in health workforce forecasting and improve data quality for predictive modelling.
 - Facilitated the session's outcomes by documenting feedback and proposed next steps to strike what eventually became HWC's Modelling Advisory Committee (MAC) on health workforce modelling.
- 6. Health Workforce Modelling & Forecasting in Canada—Current State Report (Ministry of Health, Government of Saskatchewan, 2024)**
 - Served as Saskatchewan's official contributor to Health Workforce Canada's national environmental scan by sharing Saskatchewan-specific insights on workforce data systems, modelling methodologies, and planning frameworks, while helping to identify pan-Canadian gaps in needs-based forecasting and role optimization across primary care professions.
 - Contextualized Saskatchewan's operational and strategic challenges—such as data fragmentation, methodological inconsistencies, and interprofessional education constraints—contributing to a shared national understanding of barriers and co-developing priorities for coordinated, evidence-informed workforce planning.
 - Validated the draft final report to ensure the Saskatchewan's modelling practices, challenges, and priorities were accurately represented, and provided strategic feedback to strengthen the report's alignment with pan-Canadian planning efforts.
- 7. Canadian Institute of Health Information's (CIHI) Defining Health Workforce Vacancies in Canada Report (Ministry of Health, Government of Saskatchewan, 2024)**
 - Contributed Saskatchewan's input in CIHI's 2023 pan-Canadian environmental scan on health workforce vacancies by providing in-depth analysis of Saskatchewan practices and challenges related to defining, measuring, and reporting health care vacancies across different clinical settings—including acute and long-term care.
 - Provided strategic input to support the development of a standardized national definition of "vacancy" to help CIHI address critical data fragmentation and enable consistent, comparable health workforce vacancy reporting across Canada.
 - Validated the draft report to ensure that Saskatchewan's data context was accurately interpreted and reflected in the national findings aimed at standardizing vacancy reporting across all provinces.
- 8. Saskatchewan Health System Clinical Placement Capacity Review Project (Ministry of Health, Government of Saskatchewan, 2024)**
 - Initiated and secured approval for a \$75K, 6-month clinical capacity review project by leading the full development of the business case, including developing the RFP deliverables (e.g., methodology, data collection, capacity gap analysis), defining evaluation criteria, and overseeing vendor selection and contracting.

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- Led the end-to-end project delivery across a multi-stakeholder health ecosystem, including Saskatchewan Health Authority, post-secondary institutions, and private health providers, to assess clinical placement processes for nursing, paramedicine, and allied health professions; co-chaired weekly meetings and facilitated inter-organizational data sharing to support a robust review.
- Co-directed framework for analysis of critical system challenges, including unit-level capacity, learner-to-staff ratios, cost comparisons for in-person vs. virtual placements, and simulation use. Collaborated on identifying barriers to expansion and resource needs (capital, human, operational), producing policy-ready recommendations for future-state capacity.
- Drafted and circulated a high-level executive summary of findings—outlining key insights on coordination models, private sector potential, and jurisdictional benchmarks—which was shared with senior officials and health sector executives to support implementation, oversight, and planning for future health human resource needs.

9. Healthcare Human Resources (HHR) Data Standardization Project (Ministry of Health, Government of Saskatchewan, 2023)

- Conceived and secured \$161K funding for the HHR Data Standardization Project, a centralized sectorial data catalogue and warehousing initiative to unify fragmented health workforce data sourced from different organizations including the Ministry of Health, the Saskatchewan Health Authority, the Saskatchewan Association of Health Organizations, 3sHealth, and the Saskatchewan Cancer Agency.
- Led end-to-end project governance, including drafting and operationalizing the project charter, RACI matrix, terms of reference, and reporting templates, while chairing the multi-stakeholder working group comprising 15+ directors, managers, and analysts to ensure shared ownership, strategic alignment with eHealth and MoH priorities, and timely delivery.
- Directed the full project lifecycle (inception to execution) as intellectual and operational lead, solely making strategic and technical decisions related to data architecture, metadata design, and centralized repository creation (using an Extract, Load, Transform SFTP server approach) to ensure standardized indicators and improved data quality across the provincial health system.
- Facilitated cross-sectoral engagement and technical requirements gathering to identify SME input, data ownership, data fields, and collection frequencies, while mitigating risks related to data quality, privacy, and change control by leveraging existing Master Data Sharing Agreements to enable the secure transfer of data into the centralized data warehouse and catalogue.

10. Physician Assistant (PA) integration initiative in Saskatchewan (Ministry of Health, Government of Saskatchewan, 2022)

- Authored the business case that directly informed Saskatchewan's 2023–24 budget bill to secure \$1.3M in legislative funding to introduce 12 new PA positions into the provincial healthcare system to address critical service gaps and provider shortages.
- Led the development of the strategic framework to integrate PAs into the provincial health system by providing recommendations to hire 12 PAs into 4 priority clinical settings, enact regulatory reform through the College of Physicians and Surgeons of Saskatchewan, and initiate interprovincial and domestic training pathways in collaboration with post-secondary institutions.
- Led policy research that informed the legislative drafting for amendments to The Medical Profession Act, 1981, to enable the legal recognition, regulation, and deployment of PAs for the first time in Saskatchewan's history.
- Coordinated a province-wide stakeholder consultation process to engage 48 key stakeholders and organizations—including the health authority, professional associations, and educational institutions—to incorporate sector-wide feedback into the regulatory framework for PAs.
- Supported overall implementation and developed a robust evaluation framework to help align the integration of PAs into Saskatchewan's health system with long-term health workforce priorities.

11. Saskatchewan Registered Nursing Labour Market Analysis (Ministry of Health, Government of Saskatchewan, 2022)

- Solely authored a comprehensive Saskatchewan labour market report on registered nurses (RNs) by leveraging advanced data analysis, policy research, and occupational forecasting to assess systemic workforce shortages and regional disparities.
- Developed and implemented end-to-end data workflows using statistical methods to integrate sources such as Statistics Canada, CIHI, and provincial health regulators to deliver precise insights on RN employment trends, vacancy rates, and future workforce needs for the report.
- Produced strategic policy recommendations rooted in evidence to address critical gaps in nursing education capacity, international credentialing, and rural retention—guiding decision-makers in health workforce planning and system reform in Saskatchewan.

12. Saskatchewan Remote and Rural Recruitment Incentive (RRRI) Program (Ministry of Health, Government of Saskatchewan, 2022)

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The following are a selection of relevant projects, policy initiatives, and publications to which I have contributed to, led or supported—including at the institutional level.

- Led the end-to-end development of the Saskatchewan Rural and Remote Recruitment Incentive program, from concept through to policy design, by translating workforce shortages into a compelling policy case that supported and positioned the incentive as a cornerstone of the province's rural health workforce strategy.
 - Solely authored the Cabinet Decision Item (CDI) using rigorous labour market and economic analysis to secure Cabinet's approval of \$5.7M for the program to offer up to \$50,000 to healthcare workers who commit to hard-to-recruit rural and remote communities.
 - Designed and supported the program's implementation by identifying eligible occupations and priority communities to ensure the incentive targeted critical service gaps and maximized recruitment outcomes across the rural and remote communities.
 - Supported the development of a province-wide communications strategy and a monitoring and evaluation framework to help launch and sustain the RRRI program through clear public messaging, stakeholder engagement, and performance tracking.
13. **Saskatchewan Health Care Training Expansion Initiative—Over 550 new post-secondary training seats across 18 health care training programs (Ministry of Health, Government of Saskatchewan, 2022)**
- Led the comprehensive 10-year supply-demand workforce analysis to identify critical health workforce gaps and recommend 18 post-secondary programs for additional training seats by translating complex workforce outlooks into precise seat allocation recommendations to address projected shortages.
 - Led cross-ministerial engagement and consensus-building efforts with the Ministries of Advanced Education, Immigration and Career Training, and the Saskatchewan Health Authority to facilitate data-informed discussions and strategic alignment for stakeholder buy-in on program selection and seat expansion targets.
 - Spearheaded the development and drafting of the cabinet decision item (CDI) that successfully secured over \$30 million in funding from cabinet for the initiative, including leading the clear articulation of the cost-benefit analysis in the CDI while demonstrating scenario modelling, alternative options evaluations, and strategic value of the investment.
 - Provided end-to-end support for implementation, monitoring, and evaluation to guide the Ministries of Advanced Education, Immigration and Career Training through the operational rollout of 550+ new training seats and the development of evaluation mechanisms to track progress, assess expansion outcomes, and inform future workforce planning decisions.
14. **Saskatchewan's Philippines Health Care Recruitment Mission 2022—Initiative to recruit over 500 Filipino nurses (Ministry of Health, Government of Saskatchewan, 2022)**
- Solely conducted the core labour migration and economic analysis that identified the Philippines as the strategic focus for international health recruitment.
 - Solely modelled the economic impact and associated costs of recruiting health professionals from the Philippines to contribute directly to the development and approval of the international recruitment strategy.
 - Supported the full design of the recruitment-to-employment pathway by outlining key steps from candidate engagement in Manila through credential recognition, settlement supports, and integration into Saskatchewan's health workforce.
 - Contributed to the drafting of the cabinet decision item (CDI) that secured funding for the initiative and supported the province-wide implementation.
15. **Prince Albert Victoria Hospital infrastructure project (Ministry of Health, Government of Saskatchewan, 2022)**
- Collaborated with cross-ministry and health system partners on a working group, including the Saskatchewan Health Authority, to develop the staffing plan for the expanded 242-bed hospital by providing data-driven insights to guide workforce planning.
 - Supported labour market demand and supply forecasting specific to the new facility to ensure alignment between projected patient volumes and required staffing levels across key service areas.
 - Led the economic and policy analysis that underpinned the eventual approval of the hospital's staffing plan by assessing fiscal impacts and aligning it with the long-term health system workforce goals.
16. **Saskatchewan's 4-point Health Human Resources (HHR) Action Plan (Ministry of Health, Government of Saskatchewan, 2022)**
- Led the development of the Action Plan's overarching strategic framework—Retain, Recruit, Incentivize, and Train—grounding the plan in a clear and actionable structure that guided policy and program direction.
 - Contributed 40% of the HHR Action Plan's initiatives through in-depth economic analysis to ensure the proposed strategies were data-driven, evidence-based, and aligned with the province's healthcare workforce needs.

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- Facilitated multi-stakeholder consultations across ministries, health sector organizations, and educational institutions to align proposed actions with government priorities and ensure cross-sectoral buy-in.
- Supported implementation and execution of the action plan's strategies by working closely with internal and external partners to translate policy into practice and track progress on key initiatives.
- 17. **Saskatchewan Health Human Resources Partnership (SHHRP) Development (Ministry of Health, Government of Saskatchewan, 2022)**
 - Led the conception and execution of a cross-ministerial Health Human Resources (HHR) Partnership to align the Ministries of Health, Advanced Education, Immigration and Career Training, the Saskatchewan Health Authority, the Saskatchewan Cancer Agency, and the Saskatchewan Healthcare Recruitment Agency on delivering and executing coordinated, province-wide HHR strategies.
 - Developed and implemented comprehensive governance and the partnership infrastructure, including terms of reference, meeting agenda and minutes templates, RACI matrices, working group project charters templates, project reporting templates, and trackers to enable agile, accountable, and transparent decision-making across all levels of the partnership.
 - Led the end-to-end project management, from proposing the partnership concept through to operational rollout—successfully coordinating executive approvals and facilitating inaugural working group meetings to lay the foundation for integrated health workforce planning and policy execution.
- 18. **BC Tourism and Hospitality Labour Market Information (LMI) Research Project (Qatalyst Research Group Inc., 2022)**
 - Led the end-to-end data analysis by integrating sector-specific employment trends, demographic impacts, and post-COVID recovery projections to inform the comprehensive labour market intelligence report on British Columbia's tourism and hospitality sector.
 - Drafted and developed the final report by synthesizing quantitative findings and stakeholder insights into actionable policy recommendations on workforce attraction, retention, and skills development.
 - Provided strategic insights through rigorous research to inform workforce planning and future labour demands by highlighting key employment gaps and potential interventions to support sectoral recovery and long-term resilience.
- 19. **go2HR Employment Tracker–B.C. Tourism & Hospitality Labour Market (Qatalyst Research Group Inc., from Sept 2021 to Mar 2022)**
 - Co-designed the reporting parameters for the go2HR Employment Tracker to enable dynamic, real-time labour market insights for tourism and hospitality employers, policymakers, and workforce planners across British Columbia.
 - Led the monthly data update process, managing ingestion, cleaning, and synthesis of Statistics Canada Labour Force Survey data to ensure accurate, timely, and policy-relevant tracking of employment, unemployment, and sector-specific trends.
 - Aligned tracker outputs with regional economic recovery priorities to provide tailored metrics by industry group, geography, and workforce demographics to support targeted interventions.
- 20. **Labour Market Strategy for BC's Silviculture Industry (Qatalyst Research Group Inc., 2022)**
 - Synthesized and visualized key labour market analyses for the report by transforming complex data into actionable insights on workforce composition, employer practices, and regional challenges across British Columbia's silviculture sector.
 - Constructed and finalized all data tables and graphics to ensure methodological consistency, analytical clarity, and visual impact.
 - Integrated primary employer survey data with secondary labour market information sources to paint the most comprehensive portrait of labour dynamics in BC's silviculture—informing future recruitment, retention, and policy efforts.
- 21. **British Columbia (BC) Beverage Sector Comprehensive Framework and Associated Benchmarking–Work Plan (Qatalyst Research Group Inc., 2022)**
 - Mapped the structure, size, and segmentation of the global, Canadian, and BC beverage industry by synthesizing data from Statistics Canada, Farm Credit Canada, and market research firms to uncover growth trends, major players, and emerging sub-sectors.
 - Analysed industry definitions and classification systems (NAICS) to highlight regulatory and market differences across jurisdictions and their implications for British Columbia's beverage manufacturing landscape.
 - Designed a comprehensive sectoral survey for BC's Ministry of Agriculture to be used to capture operational, market, and growth dynamics across beverage sub-sectors to directly inform the overall evaluation work, evidence-based policy, investment, and industry development strategies.
- 22. **Silviculture Labour Market Information (LMI) Research Report (Qatalyst Research Group Inc., 2021)**

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- Finalized core analytical sections (Industry Profile, Employer Survey, Employee Survey) of the report by providing in-depth insights into employment trends, occupational composition, and workforce challenges in British Columbia's \$550 million silviculture sector.
 - Finalized the validation, refinement, and integration of quantitative survey data and visualizations to ensure statistical rigor and clarity — including key metrics on retention, turnover, COVID-19 impacts, and sector-specific labour shortages.
 - Finalized the synthesis of complex multi-source datasets (e.g., employer/employee surveys, WorkSafeBC classifications, and sector revenue estimates) into actionable intelligence.
 - Enhanced the impact and readability of the final report through data-driven storytelling and visualization by translating nuanced trends in reforestation, wildfire management, and forestry consulting into sector-specific insights.
- 23. Strategic Marketing Plan for Town of Fort Smith (Qatalyst Research Group Inc., 2021)**
- Led comprehensive research on Fort Smith's regional economic landscape (section 2 of the report) by integrating data on tourism, demographics, economic trends, and infrastructure needs to create a robust strategic profile for guiding regional planning initiatives in housing, workforce development, and economic diversification.
- 24. Evaluation of British Columbia's (BC) Small Business Export Navigator Program—Work Plan (Qatalyst Research Group Inc., 2021)**
- Drafted a program overview for BC's Export Navigator program by synthesizing complex administrative, operational, and funding structures into a clear and compelling narrative that supported the program evaluation for long-term sustainability.
 - Designed a comprehensive evaluation matrix and mixed-methods approach for a multi-stakeholder impact assessment of the Export Navigator program that aimed to integrate document and data reviews, client intake and survey analysis, key informant interviews, and focus groups to assess the program's relevance, effectiveness, efficiency, and attribution.
- 25. Evaluation of Alberta Innovates' Executive Business Advisors (EBA) Program—Work Plan (Qatalyst Research Group Inc., 2021)**
- Designed a robust evaluation framework for a province-wide executive advisory program of Alberta Innovates by crafting strategic evaluation questions and an integrated methodology—leveraging stakeholder consultations, ecosystem mapping, and cross-jurisdictional analysis— that aimed to assess evolving program relevance, operational efficiency, and alignment with Alberta's economic development priorities.
- 26. Regression Modelling Facilitation (Ministry of Finance, Government of Ghana, 2019)**
- Planned and facilitated a full-day regression modelling workshop for the Ministry of Finance of the Government of Ghana – the workshop comprised other government departments, non-profits, and private sector partners.
- 27. 2018 Annual Report on the Management of the Energy Sector Levies and Accounts (Ministry of Finance, Ghana, 2019)**
- Used R and Stata to automate forecasting and analytical workflows for national hydroelectric distribution datasets that improved accurate production of five major appendices of the report, covering volumes produced, levy collections, and fiscal performance.
 - Standardized large-scale data processing pipelines for electricity levies to improve efficiency in compiling and analysing annual levy collection data.
 - Developed dynamic models to project hydroelectric energy levy inflows and distribution to allow the team to integrate consumption trends with policy decisions such as the reduction of the Price Stabilization and Recovery Levy.
- 28. 2018 State Ownership Report (Ministry of Finance, Government of Ghana, 2019)**
- Automated sectoral financial and performance analysis pipelines in R and Stata for agricultural and energy sector state-owned enterprises (SOEs) and joint venture corporations (JVCs) to accelerate the report's production cycle and enhance data consistency.
 - Engineered robust data transformation scripts to extract, clean, and analyze multiyear operational and financial indicators to support the generation of sector summaries for SOEs like COCOBOD, ECG, VRA, and GNPC.
 - Designed modular code templates that reduced manual data entry errors and enabled faster updates to key indicators such as gross profits, administrative costs, and net losses across over 15 entities in the agriculture and energy portfolios. This improved reproducibility of the report.
- 29. 2018 Annual Public Debt Report (Ministry of Finance, Government of Ghana, 2019)**
- Integrated trade and debt datasets using R and Excel automation workflows to enable dynamic analysis on Ghana's trade balance trends and enhance updates to debt sustainability indicators and related commentary in Section 5 of the report.

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- Supported the assessment of multi-currency sovereign debt composition and associated risk exposure to identify that 67.2% of Ghana's external debt was USD-denominated which, in turn, shaped the debt strategy recommendations to manage exchange rate vulnerabilities and rebalance creditor exposure across currencies.
- Conducted fiscal risk analysis on contingent liabilities arising from public infrastructure projects and on-lent facilities to inform the report's assessment of credit risk in state-backed financing arrangements.
- Provided strategic input on the structure and implications of sovereign Eurobond issuances to ensure the alignment of amortization profiles with Ghana's debt sustainability targets and supporting liability management operations.
- Developed a framework to evaluate fiscal risks stemming from government guarantees and public-private partnerships (PPPs) to enable better oversight in outstanding guarantees and identify key projects with elevated risk exposure to future budget outflows.

Academic Research (Not Published)

30. **Master's thesis:** Exporting and Productivity: Panel Data Analysis of Saskatchewan and Manitoba's Traded Industries (University of Saskatchewan, 2021).
 - Wrote a 90+ page master's thesis drawing on trade theory and productivity literature to investigate the link between exporting and productivity using Statistics Canada's data covering 27 exporting industries in Saskatchewan and Manitoba.
 - Independently cleaned, structured, and analyzed over a decade of industry-level panel data and employed the Error Correction Mechanism (ECM) models to test whether productivity gains stem from self-selection into export markets (growth-driven export hypothesis) or learning-by-exporting effects (export-led growth hypothesis).
 - Used five variables, including exports, imports, labour productivity, exposure and GDP of Canada, to show that exporting firms are more productive and that self-selection, rather than post-entry productivity gains, explains the export-productivity relationship.
 - Explored causality and found a bidirectional causality between exports and productivity, which added to the possibilities of the existence of indirect causalities through other macroeconomic variables included in the study, like exposure and GDP of Canada.
31. **Research Paper:** The Effects of Stress on Smoking and Quitting Behaviour (University of Saskatchewan, 2020)
 - Conducted a comprehensive literature review and critical synthesis of academic studies that used health economics theory and data-driven methods to evaluate the causal relationship between stress and smoking behaviour.
 - Deduced policy-relevant insights and recommendations from the review of the complex findings and identified gaps in literature on the current health interventions targeting stress-induced smoking.
32. **Research Paper:** Link between Export and Productivity: Industry-Level Analysis (University of Saskatchewan, 2020)
 - Conducted an in-depth review of academic papers employing classical and modern trade theories to explore the causal relationship between exports and productivity (i.e export-led growth vs growth-driven export hypotheses).
 - Synthesized and assessed empirical literature, including firm- and industry-level studies from authors like Bernard & Jensen (1999), Melitz (2003), and Aw et al. (2000) to evaluate causality direction through the lens of exports, total factor productivity and other labour productivity indicators.
 - Reviewed literature on theoretical frameworks (e.g., the Melitz model, Krugman's New Trade Theory, and the Porter Hypothesis) and its nuanced perspective on the policy implications of export-productivity dynamics since the ascension of China into the WTO in 2001.
33. **Research Paper:** Gravity Models of Intra-EU Trade: Application to Heterogeneous Panels with Unobserved Common Time-Specific Factors for 91 Country Pairs (University of Saskatchewan, 2020)
 - Conducted an advanced empirical analysis of intra-EU trade flows using heterogeneous panel data models that incorporated unobserved common time-specific factors across 91 country pairs from 1960–2001.
 - Built and estimated multiple econometric models—including pooled OLS, fixed effects, and random effects models—to assess the impact of economic size, distance, currency union, and institutional integration on bilateral trade volumes in the EU.
 - Applied and critically evaluated gravity trade models, including Hausman-Taylor IV techniques, to address endogeneity and cross-sectional dependence for robust conclusions on the validity of theoretical and empirical trade frameworks.
34. **Research Paper:** Time Series Analysis of the Relation between the Canada-US Exchange Rate and Commodity Prices Specific to Canada (University of Saskatchewan, 2020)

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- Conducted original empirical research exploring the long-run relationship between the Canada-US exchange rate and Canadian commodity price indices by applying advanced time-series econometric techniques, including unit root and cointegration testing.
 - Collected and transformed over 40 years of monthly macroeconomic and price index data from Statistics Canada and the U.S. Bureau of Labor Statistics; implemented data cleaning, deflation, and log transformation to ensure econometric validity.
 - Designed and executed a two-part econometric framework inspired by Chen et al. (2010) that leveraged both Engle-Granger and Johansen methodologies to assess the presence of cointegrating relationships and causal dynamics between exchange rates and commodity prices.
35. **Bachelor's thesis:** Cost and Benefit Analysis of the Electronic Medical Records System in the University of Ghana Hospital (University of Ghana, 2017)
- Conducted a comprehensive cost-benefit analysis for my BA thesis to assess the long-term financial and operational viability of the newly piloted Electronic Medical Records (EMR) system at the University of Ghana Hospital.
 - Quantified direct and indirect costs and benefits while using economic evaluation tools such as Net Present Value (NPV) and Payback Period to estimate long-term financial impacts and demonstrate the EMR system to be a cost-effective investment with significant efficiency gains.
 - Collected and synthesized qualitative and quantitative data from hospital records and stakeholder interviews (including IT staff and medical personnel) to produce actionable recommendations for health system digitization and efficiency improvement.
36. **Research Paper:** Industrial Policy of Ghana and Firm Growth (University of Ghana, 2017)
- Conducted an in-depth policy analysis of Ghana's industrial development strategies by evaluating their historical evolution, implementation mechanisms, and impact on firm-level growth, productivity, and competitiveness.
 - Assessed key national industrial policy frameworks, including the Ghana Industrial Policy (GIP) and the Ghana Shared Growth and Development Agenda (GSGDA), through comparative analysis with East Asia's industrialization models to highlight best practices for export-led industrialization.
 - Identified institutional, infrastructural, and financial barriers to industrial growth in Ghana and suggested actionable policy recommendations to support the development, value addition, and regional integration of small and medium-sized enterprises (SMEs).
37. **Research Paper:** On-the-Job Training and Skills Development in Ghana (University of Ghana, 2017)
- Used structured interviews and quantitative analysis to conduct an empirical case study at the Ghana Standards Authority that analysed how on-the-job training contributed to workforce skills development.
 - Assessed Ghana's training policies and practices under the Labour Act 2003 (Act 651) to identify key organizational challenges and opportunities for improving employee development across the public sector.
 - Developed actionable policy and organizational recommendations to enhance the design, delivery, and feedback mechanisms of on-the-job training programs for sustainable human capital development.

Co-authored books

38. WE HAVE A DREAM: 201 Countries, 201 Dreams with Sustainable Development Goals (pg. 88-89, WORLD DREAM PROJECT, 2021).

Blog Publications/Op-eds

39. Africa in the Post-Pandemic 2020s: Five Epic Battles (Africa.com, 2021).
40. A 'new deal' for Africa: Is this the best chance for a generation? (Global Voices, 2021).
41. United States of Africa: An African Elitist Agenda? (Face2Face Africa, 2020; republished by African Liberty, 2020).
42. Why corruption in Africa is now a full-blown culture affecting the continent's DNA (Face2Face Africa, 2019; republished by Africa.com in 2019 as Corruption In Africa – The Crisis of Our Time?).