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National AI Strategies

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Abstract:

Purpose: *This study investigates national AI strategies across sectors with a primary goal to construct an AI model that aspiring countries can utilize to formulate their own tailored AI strategies.*
Design/Methodology/Approach: *We investigated 62 national AI strategies and policies across 12 sectors. Our investigations center on AI national interest, AI national priorities, AI national attention, AI national performance, AI national investments and AI national ranking. We use the python Google Colab programming library to build our model that tracks the number and amount of AI investments projects, investments priority for the 62 nations and predict the best nation with AI strategies.*
Findings: *The study analysis and evaluation of investment patterns as identified from the data published by OECD and TortoiseMedia. Our model successfully tracked and compared AI investments priorities for the 62 nations with a correlation coefficient metrics score of 0.999, 100, and 0.999 for all the training models. Based on our model, we then conceded that AI strategies vary across nations with regards to priority, number, and amount of AI investments projects due to technology, cultural, economic, social and political differences, laws, population density, and knowledge flows.*
Practical implications: *There exists global skepticism, fear, and discomfort on the application and use of AI due to limited knowledge of global AI strategic policies.*
Originality: *Artificial intelligence (AI) is the number one technological innovation that is revolutionizing sectors of a nation's economy. The scope and the significance of AI have attracted huge government investments. These huge investments seem like a nation's strategy and policy towards AI, but it isn't.*

Keywords: *Artificial intelligence, Economic sectors, AI investments, national AI strategies, national AI priorities, correlation metrics.*

JEL classification: *L15, M10, M16, R49.*

Paper type: *Research article.*

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1. Introduction

The interest in AI has a variety of objectives that draw strategic attention (Ulnicane, 2022). The strategic attention has to do with various reasons such as Innovative AI for Education, Innovative AI for Healthcare, Innovative AI for business development, Innovative AI for Transport, Innovative AI for Infrastructure development, Innovative AI for Telecommunications, Innovative AI for Media and social platforms, Innovative AI for defiance and security, Innovative AI for Agriculture, and Innovative AI for energy.

Although the above-mentioned strategies determine a nation's AI strategy, our investigations notice that a country's population, and view on infrastructure development and research, play a fundamental role in AI. AI requires human data and skill researchers to mimic real-world situations in training algorithms. Some countries have limited human data and skilled researchers.

An evaluation of AI strategies for the US, China, France, and Germany was conducted (Kaplan, 2016). The study examines the policy variation amongst these nations to determine the reason for the rush for AI by government-backed investments. The results show similarities in strategy by both nations in AI strategy.

The study goes further to say that the US, China, France, and Germany consider AI as an inevitable and massively disrupting technology. This means that both nations will build rhetorical devices that will enable them to engage in an international competition. Research shows a trigger of global dominance due to national AI policies and strategies, especially from giant companies.

The current rush for AI is pulling huge attention from various government The huge attractions come with lots of tactics and viewpoints. Governments are engaging AI at various levels which is sowing a global strategy race. The much attention from governments will lead to another era of global technology competition. The UK national strategy (Kazim *et al.*, 2021).

The UK national strategy signals a shift from national industrial, policy, regulatory, and geo-strategic agenda. The study revealed the UK government's optimism towards AI but feels there's going to be a blockage towards its achievements. The study stresses the challenge of ethical regulations that the UK has.

2. Literature Review

An investigation on national AI strategy for 24 countries was conducted by (Schiff, 2022). The investigated work examines the significance of AI in education. The study was surprised to find out about the insignificance of AI

policy conversation from policymakers. The study also identified huge attention on AI training and work- force but with less regard to ethical considerations.

There's more to broader ethical implications to befall the education sector. Since the waves of AI seem to go way beyond policy implementation, individual interest continues rising. An overview of democratic AI strategies and policies examined published political data (Paltieli, 2022). The study examines political democratic regulatory guidelines associated with the documentary.

There is heavy dependency on the political point of view towards the design, application, and implementation of AI strategies. Since AI doesn't operate in space, there is more to political desires compared to its actual application. The political democratic situation of the nation makes the AI strategies more complex. National AI Watch reports an investigation that encourages EU member states to develop individual AI strategies (Gong *et al.,* 2024).

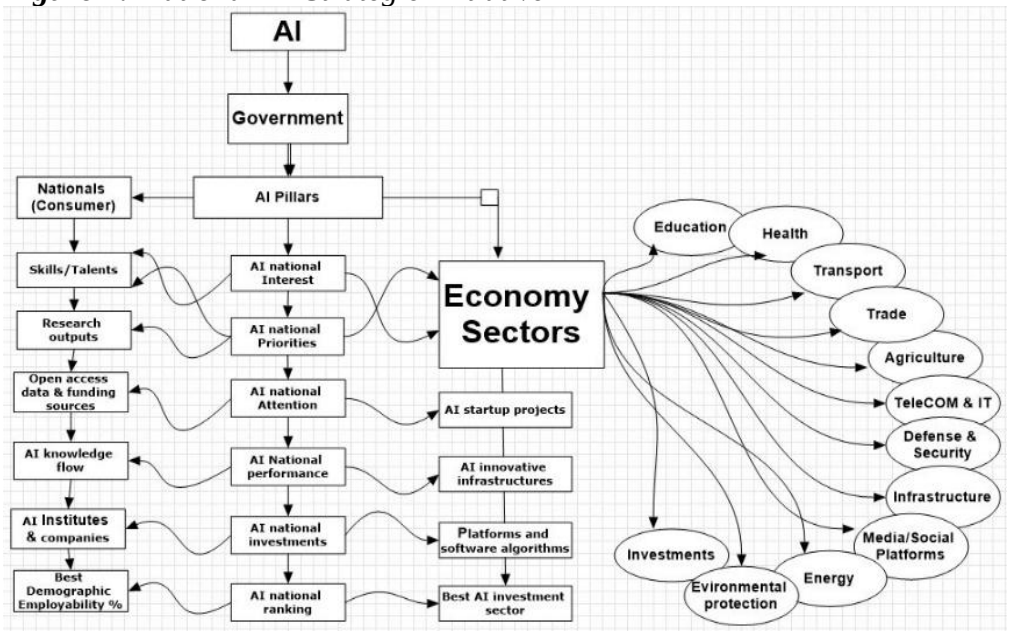
The report highlights elements such as educational development which aim to transform ideas into market products and services. The second highlight was collaboration and sharing of information in the form of networking. The third highlight was regulatory mechanisms that guide ethical issues, the rule of law, and standardization principles. The last highlight was the infrastructure that deals with data and telecommunications.

Artificial intelligence seems very simple in its application but very complex in practice (Kaggwa *et al.,* 2024). Some nations and governments feel AI is a technology for the systems, services, and sectors. Rather AI is a technology for the people, its governance, sectors, and services. AI doesn't operate in space and on its own but functions with knowledge acquired from people's data. To fully understand AI strategies, we dive into policy initiatives for the four most advanced economies such as the US, China, the EU, and Japan. Our aim here is to throw more light into what AI strategies represent for experienced nations before evaluating global perspectives.

3. Modelling AI Strategies

This section represents the technique and approach we used to investigate AI national strategy for the 62 nations. A lot of strategy investigations have been carried out especially in education sectors (Esmaeilzadeh, 2024), business sectors (Janani *et al.,* 2024) health sectors (Rinchi *et al.,* 2024), transport sector (Habbal *et al.,* 2024; Odejide and Edunjobi, 2024) and on investments projects (Huang *et al.,* 2024; Smuha, 2021; Erdélyi and Goldsmith, 2018). We proposed six pillars to investigate AI strategies for the 62 countries. Global AI talents competition remains a speculative competition and shows policy strength amongst AI leaders.

Figure 1. *National AI Strategic Initiative*



Source: *Own study.*

Figure 1 represents the sixth (6) AI pillars, selected economic sectors and the quality characteristics that we presume a national have, will attract government attention, more details on the figure will be given in subsections below.

A nation's strategies and policies are what make it unique from its neighboring nations and competitors. These studies investigate 62 national AI strategies and policies using OECD 12 AI sectors and Global AI Indexed 7 pillars published data. National AI strategies can be understood via the following pillars. AI national interest, AI national priorities, AI national attention, AI national performance, AI national investments, and AI national ranking helps us under- stand AI strategies.

The pillars allow understanding of a nation's relation with its government and citizens. To understand a nation's full AI strategy, it is mandatory to study its citizens AI strategy standpoint and that of its government.

National AI strategic initiatives remain a speculative competition and show political strength amongst AI leaders. From the preliminary investigation from the US, China, Germany, Japan, the UK, Australia and New Zealand, there is no unique strategy that is similar to another nation. The above-mentioned country's Strategies are routed in each nation's cultural, traditional, political, democratic, demographic, educational, bilateral and

religious settings and beliefs. Although most strategies seem similar in context, all are implemented differently.

3.1 Economic and Consumer AI Investments

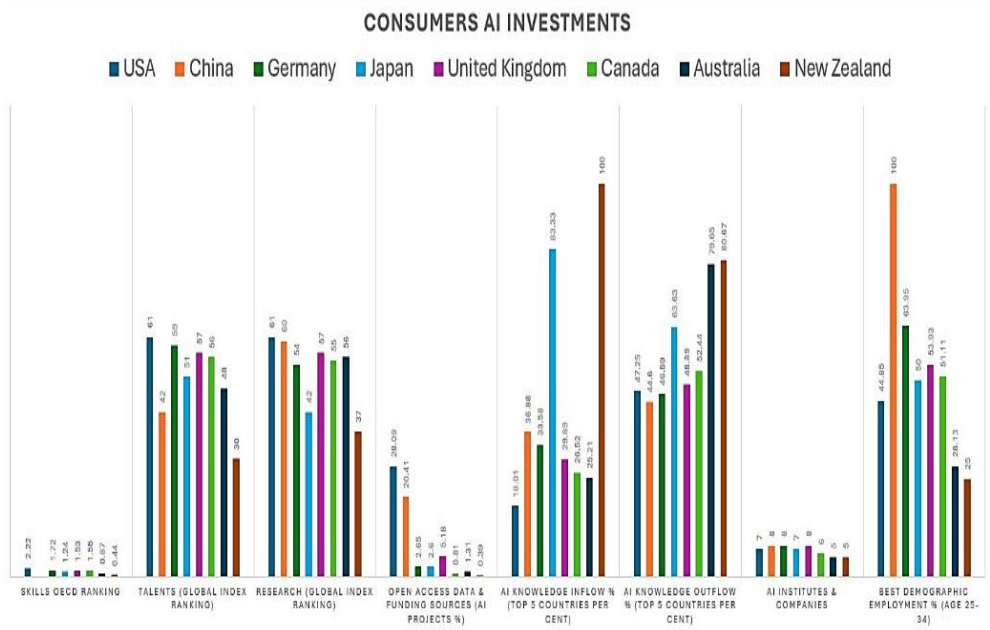
To investigate the differences in strategies we structure our findings into two levels, consumers (nationals) and economic sectors. Some nations are struggling to put in place a perfect regulatory system that will govern (Olorunfemi *et al.*, 2024). The authors went on to stress about technology increase visibility risks that has led to a louder call for regulators to look beyond the benefits of artificial intelligence.

As such, there is an urgent need to differentiate policies, regulations for consumers (national) and economic sectors (Allen and Kendeou, 2024). The struggled to address the myriad harms from AI due to inadequacy of existing initiatives (Yu and Hutson, 2024). Struggling to combine these two in the context of artificial intelligence would create more loopholes in the regulations.

3.1.1 Consumers AI Investments

The consumer level artificial intelligence proposed in this study should focus on peoples or consumer skills and talents, consumer research outputs, consumer open access data and findings sources, consumer AI knowledge flow, AI institute and companies, and consumer best demographic employment percentage.

Figure 2. *Consumers AI investments*



Source: *Own study.*

Figure 2 represents statistics for artificial intelligence consumer performance for the fiscal year 2023. These studies believe that policy makers whom are championing the fight for the AI services directly impacting humans (consumer) should focus only on the this services (consumer). On the other hand, policy makers who are fighting for the economic sectors should focus on these sectors. By doing so, there will be more attention on guiding each other.

3.1.2 Economic Sectors AI investments

The economy level artificial intelligence strategies should pay attention to the economic sectors, talent and AI startup projects, AI innovative infrastructure, platforms and software algorithms and best AI investment sector. The Economic sectors AI investments act as a great environment for various governments to effectively manage what their citizens are consuming. These sectors help nations monitor the use of AI.

Figure 3. *Economic Sectors AI Investments*

Economic Sectors AI Investments

Strategic Attention	Academics						Healthcare		Transports		Agriculture	Trade				Investments		
Attributes	Education & training number of investments	Education & training sum of investments (USD Millions)	All publications	AI Publications	All Citations	AI Citations	AI Health, drugs & biotech investments	AI Health, drugs & biotech Invests (USD million	Mobility & Auto investments	Mobility & Auto investments (USD millions)	Consumer products invests (USD millions)	Finance & Insurance investments (USD millions)	AI GDP per capita	Government Strategy	Number of Investments	Sum Invested (USD millions)	AI Talents/ Skill jobs	AI Software developments
USA	30	0	634141	105430	287119	85831	268	6248	61	3232	235	0	70219	54	1690	55000	61	13.2
China	14	96	77934	208681	485300	187789	178	1187	136	7484	0	407	12618	59	1190	17000	42	2.3
Germany	6	18	176234	30399	81870	2335	22	89	7	137	0	238	51204	60	159	2100	59	2.6
Japan	9	15	113950	18930	44860	9799	56	174	19	153	60	90	39827	44	370	1400	51	1.2
United Kingdom	14	88	201121	37825	108821	38184	54	558	11	298	0	271	46586	52	290	3000	57	3.8
Canada	0	32	106589	20611	57082	19751	24	226	6	0	0	327	52359	57	160	1800	56	2.9
Australia	0	0	96389	18080	62832	23634	8	48	4	10	0	36	60445	48	59	600	48	0.8
New Zealand	0	0	13876	2437	7321	2205	2	10	0	0	0	54	49996	13	8	139	30	0.1

Source: *Own study.*

Figure 3 represents artificial intelligence statistics for economic sectors performance for 2023 for the US, China, Japan, Germany, the UK, Australia, and New Zealand.

Figure 3 above indicate the US, China, Japan, Germany, the UK, Australia, and New Zealand national AI strategic initiative for its citizens (consumers) and sectors of their economy. From the statistics, we can deduce nations that are culturally, traditionally, politically, democratically, demographically, educationally, bilaterally and religiously incline with the following.

- Both consumers (nationals) and economic sectors,
- Only consumers (nationals),
- Only economic sectors.

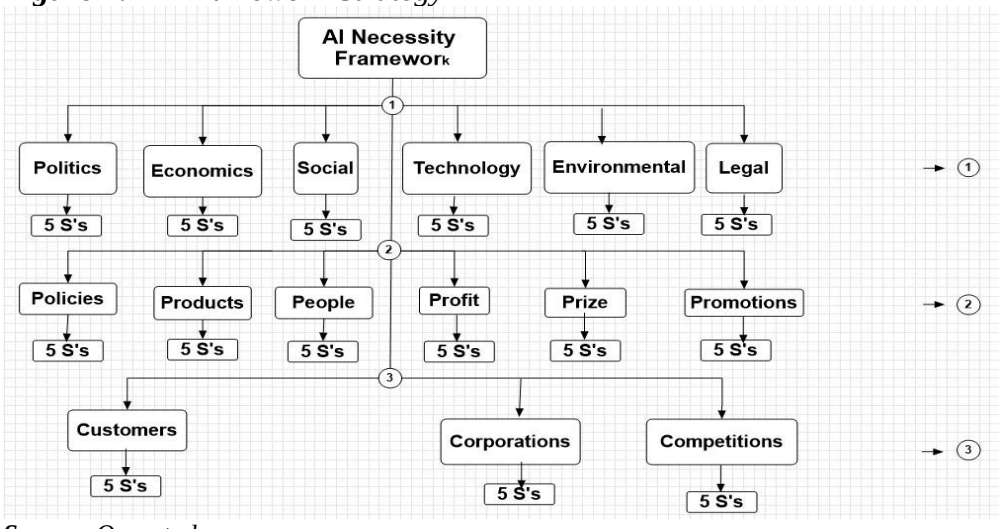
The above-mentioned factors can easily assist regulators understand the motive, agenda, and intentions of artificial intelligence and how it can be guided to build a nation's AI strategic initiative.

4. AI Framework Necessary for Strategies Developments

One of the major and a significant aspect compulsory to building an AI model is a framework. Framework provides transparency and support factors directly impact the well-being of an AI strategy. AI framework provides management tools needed for engineers to build a well fit AI strategy with key deliverable guided efficiency to use and implement. Advancements in the technology of AI have necessitated the need for crucial attention in its deployment (Banipal *et al.*, 2024, March). Aspects where concerns have been raised regarding the deployment of AI are societal, ethical, and legal regulation concerns in the information technology (IT) systems.

This study structures the AI necessary framework required to build strategies into three levels. The first level comprises the PESTEL analysis, 6 P's and lastly 3 C's. The PESTEL analysis is made up of the politics, economics, social, technology, environmental, and legal aspects of any given country, organizations, institution, and company. While the 6 P's are made up: People(consumes), Policy (government), product (goods or services), prize (reward), profit (return) and promotion (Information sharing). The 3 C's are made up of customers, corporations and competitors. The 5 S's guiding every level development consists of structure, system, skills, shared values, and staff.

Figure 4. *AI Framework Strategy*



Source: *Own study.*

Six framework components for learning purpose-based AI were proposed (Xue and Guo, 2024). According to the investigators, the six frameworks emphasize the importance of developing an in-depth comprehension on how AI application systems work and how they can foster collaborative relationships with humans and AI application systems. Figure 4 represents the purpose of three levels of AI necessity framework for strategy development.

The proposed framework can be reproduced to suit any type of policy implementation for every given country, institution, organization, establishment, enterprise, company and firm. A Context Aware Auto-AI framework was proposed that identify and incorporate relevant contextual data into an AI model (Mügge, 2024). The model aims to reduce the duration of time utilized to achieve the right hyperparameters.

Currently, there exists several challenges to understand why certain countries have AI strategies that seem unfriendly. For example, a lot of mixed sentiment to the policy and strategy implementation of China's artificial intelligence has echoed waves since its launching. Some research indicated that China would dominate AI (Ofosu-Ampong, 2024) over the US in near future, some feel the EU will and so on (Ghio, 2024). But little has been said about this country's different political, economic, social, technological, environmental, and legal viewpoints.

Although countries strive to maintain democracy all over the world, aspects of democracy are different tremendously. The social aspects of life differ a lot. The economic aspect of living differs. Views on environmental issues differ. The legal aspects for most countries are not the same.

AI framework was investigated by examining research current issues in AI 2020-2023, AI research methodologies 2020-2023, AI analysis level 2020-2023, and AI concept techniques 2020-2023 respectively (Pan *et al.*, 2019; Buye, 2021). A total of 82 articles on AI were studied to extract the volume of knowledge. created on AI. The study recovered an advance theoretical understanding of AI concept.

The politics, economic, social, technology, environmental and legal aspects of any given institution or country impacts AI strategy development and implementation. PESTEL on economic productivity for some selected countries.

The study aimed at developing a better theoretical understanding of the system that provides unique guidance for formulating AI strategies to enhance constructive productivity (Schober *et al.*, 2018). PESTEL analysis assists institutions, establishments, organizations, and companies identify aspects they're doing perfectly well and in which aspects they can improve (Kim *et al.*, 2024).

5. Investments Comparative Analysis of National AI Initiative

The evaluation of correlation coefficient (r or R) revealed data in a closeness of two variables. This study assesses national AI initiatives for 62 nations across twelve sectors of the economy. Correlation coefficient is usually used to compare two variables (Pignalberi *et al.*, 2024).

Correlation metrics drive multilevel learning (Senthilnathan, 2019). Investigating feature in datasets was examined using correlation coefficient (Gogtay and Thatte, 2017). We utilize correlation metrics to learn investment strategies for various nations. These studies evaluated national AI priorities and investments of 62 nations across twelve economy sectors using correlation coefficient (r or R) to reveal data in a closeness of variables at multiple investment levels.

Our goal was to track down artificial intelligence strategies and most importantly each nation's interest and priority. When planning to build an artificial intelligence strategy, it is essential to consider the following:

- Investigate other nation's AI priorities.
- Investigate other nation's AI GDP per Capita.
- Perform a monthly, bi-annual, and annual global correlation metrics a of AI strategies across sectors.

The importance of constant evaluation is to enable a unique artificial intelligence strategy that is unique in funding, priority, and AI GDP.

In this section, we compare national AI strategies using the above-mentioned points. We are able to learn artificial intelligence strategies for all the 62 nations listed by OECD. This study builds an artificial intelligence model that traces a nation's priority. The model was used to analyze artificial intelligence investments at the international level and at the national level. The following figures represent simulation comparison at the national and international level.

Correlation coefficient step utilized to evaluate investigations initiative for the 62 nations utilized in the study. The figure can be interpreted as follows:

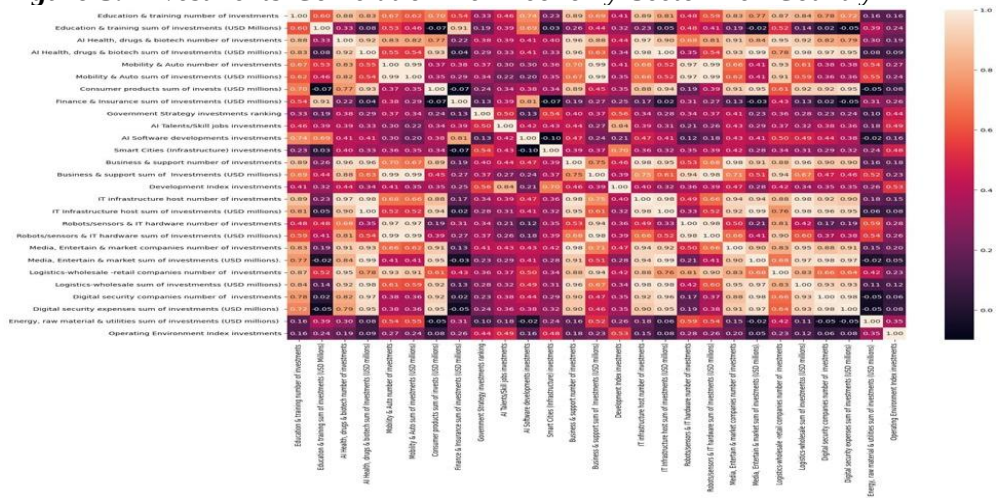
Positive correlation strength:
A correlation of r=0.9 to 1 is equal to perfect correlation.
A correlation of r=0.5 to 0.9 is equal to strong correlation.
A correlation of r=0.1 to 0.5 is equal to weak correlation.
A correlation of r=0 to 0.1 equal to uncorrelated.

Negative correlation strength:
A correlation of r=-0.9 to -1 is equal to perfect correlation.

A correlation of r=-0.5 to -0.9 is equal to strong correlation.
A correlation of r=-0.1 to -0.5 is equal to weak correlation.
A correlation of r=-0 to -0.1 equal to uncorrelated.

In this study, we utilize correlation analysis to compare multiple data. Our aim was to showcase the potential AI investments put in place by various governments. Our study shows the importance of artificial intelligence in the development of systems supporting government sectors and where some nations prioritize.

Figure 5. *Investments Correlation Per Economy Sector Per Country*



Source: *Own study.*

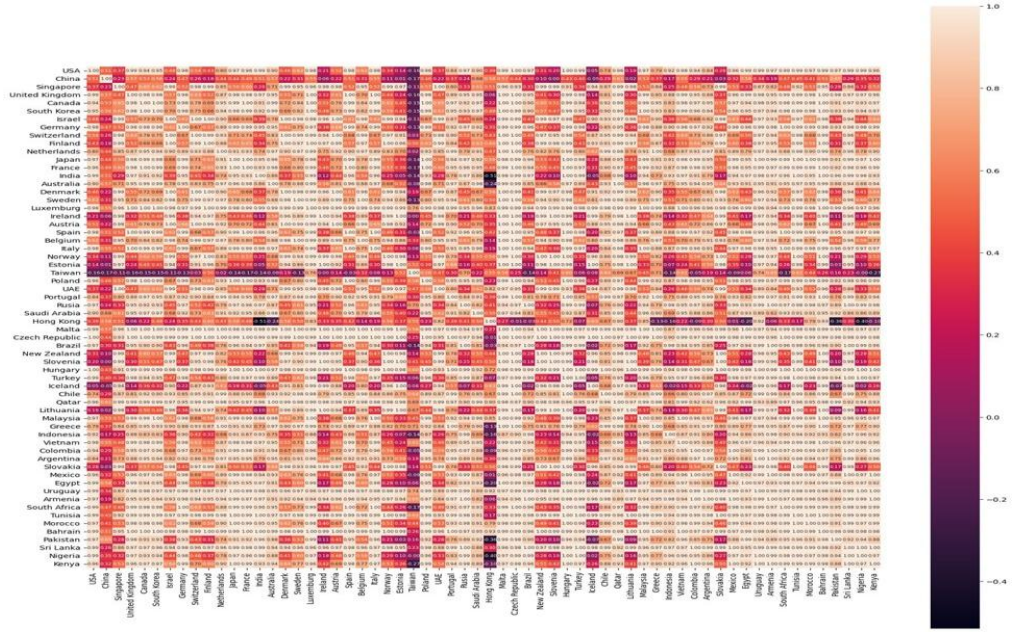
Figure 5 represents the positive and negative correlation strength for investment per country compared to other countries: In our investigation the following data relates for positive correlation.

A correlation of r=0.9 to 1 is equal to perfect correlation investment ability compared to the rest of the 62 nations.
A correlation of r=0.5 to 0.9 is equal to strong correlation investment ability compared to the rest of the 62 nations. A correlation of r=0.1 to 0.5 is equal to weak correlation investment ability compared to the rest of the 62 nations.
A correlation of r=0 to 0.1 equal to uncorrelated investment ability compared to the rest of the 62 nations.

The correlation coefficient heatmap shows that out of the 62 nations that Invested in artificial intelligence, more than half experienced weak investments compared to the nations. Some nations did not invest at all for some sectors. Especially underdeveloped countries.

The investment pattern for the developing world is very shallow. The investment pattern for developed economies is very impressive.

Figure 6. *Nations Internal Sectors Correlations*



Source: *Own study.*

Figure 6 represents the positive and negative correlation strength for investment sectors of an individual country compared to its sector and other countries. The statistics in the correlation heatmap show that investments per sector compared to other sectors are very poor.

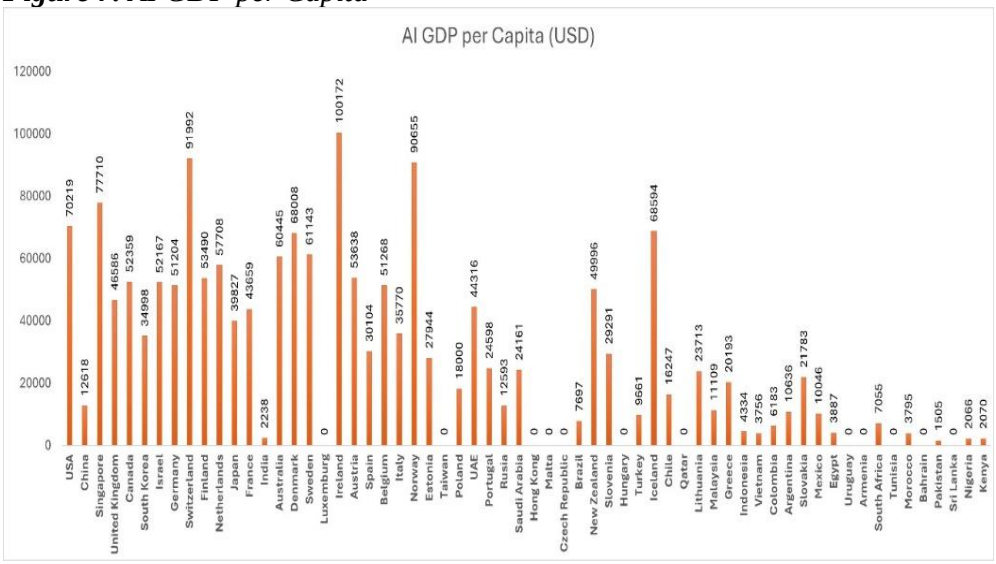
The model draws its analysis based on the investment amount to other sectors compared to some. Some economic sectors received huge attention with heavy investments while some sectors did not receive any investments. The usefulness of artificial intelligence analysis was emphasized (Gamel *et al.*, 2024).

The research emphasizes that correlation analysis techniques are similar to quantitative analytical studies. This study uses correlation techniques to further emphasize the importance of correlation analysis in extracting essential data required for decision making. There are various importance of correlation matrix and its application (Moher Alsady *et al.*, 2024). This study View correlation analysis as an essential tool when dealing with large volumes of information.

One of the sectors of the economy already actively utilizing correlation matrix is the healthcare sector. Medical experts often require drawing inferences concerning the association of information.

Several studies have employed the use of correlation analysis in investigating some societal challenges such as healthcare, education, industry, and agriculture.

Figure 7. *AI GDP per Capita*



Source: *Own study.*

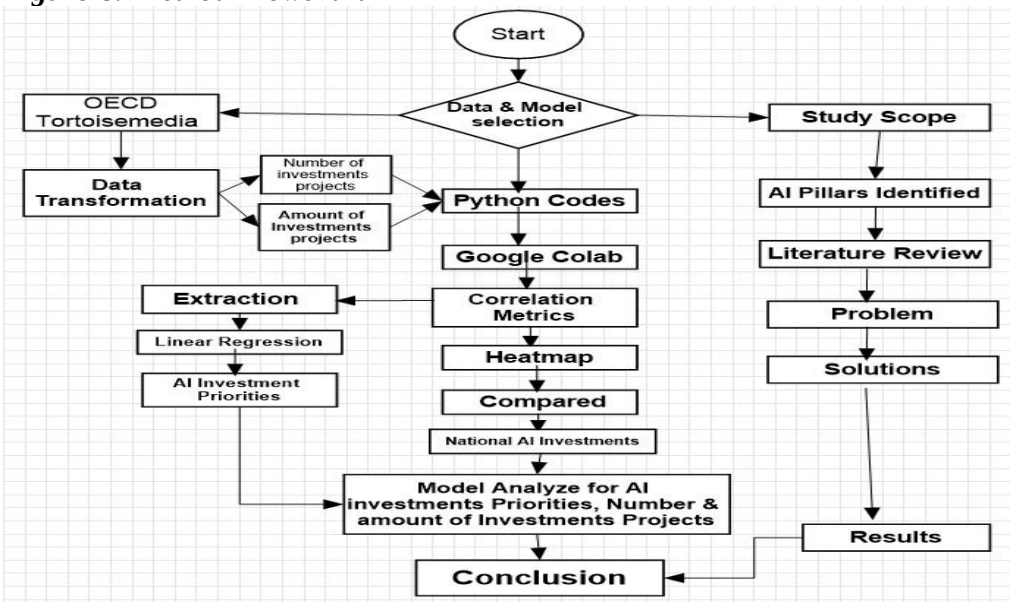
Figure 7 represents the 2023 AI GDP per Capita for the 62 nations investigated for this study. As mentioned in the recommendation, it is important to understand AI GDP per capita for other countries. AI GDP per Capita helps a nation to measure its ability to fund certain levels of technology and skills needed to boost AI strategies and policy implementation. Without competitive evaluation, it will be difficult for some nations to understand their capacity for AI technology.

6. Applied Method

In our investigations of national artificial intelligence strategies, we utilize Pearson correlation to measure the strength of linear relationships between 62 countries investing in AI across 12 economic sectors.

In our study the following sectors represent artificial intelligence for the 62 countries listed in Figure 5. The 62 countries are listed in the heatmap correlation graph in Figure 6. To better explain the stages involved in the development and implementation of artificial intelligence strategy model, we present a well-defined flowchart.

Figure 8. *Method Flowchart*



Source: *Own study.*

Figure 8 represents the study implementation flowchart. In the beginning of our study, we brainstorm and come up with the following steps presented in Figure 12. We began by identifying our data sources and model structure. When this section was of data identification and information sourcing was done. We pre- process the data collected from OECD and TortoiseMedia.

The next step was to select the programming language. We chose Python Google Colab. In our programming library, we chose a correlation method to extract investment priorities for the 62 nations and compared investments using correlation heatmap. Then we analyze our model.

On the other hand, we define study scope, identify six AI pillars for the study, source for relevant literature review, identify studies problems, suggest solutions and draw results. We then conceded to the model analysis to conclude our findings. We assess the performance of our training model, 15 sectors were identified as priority areas for the 62 nations.

$$\frac{\sum(x_i-\bar{x})(y_i-\bar{y})}{\sqrt{\sum(x_i-\bar{x})^2\sum(y_i-\bar{y})^2}} \quad (1)$$

Where:

- x_i is an individual value of one variable for example AI investments per

sector for a given country economy sector.

- y_i is an individual value of the other variable for instant, an investment of another country economy sector.
- $\bar{x}$ represents the mean value of the X variable of AI investments.
- $\bar{y}$ represents the mean value of the Y variable of AI investments.
- r here represents the Pearson correlation coefficient.

Mean Values:

- $\bar{x} = \frac{\Sigma x_i}{n}$ where n is the number of AI investments data points.
- $\bar{y} = \frac{\Sigma y_i}{n}$.

Deviation Scores:

- $x_i - \bar{x}$ represents the deviation of each x_i from the mean $\bar{x}$.
- $y_i - \bar{y}$ represents the deviation of each Yi from the mean $\bar{y}$.

Covariance:

- The numerator $\sum(x_i - \bar{x})(y_i - \bar{y})$ calculates the covariance for X and Y.

Standard Deviations:

- The terms $\sum(x_i - \bar{x})^2 \ and \ \sum(y_i - \bar{y})^2$ calculate the variance of X and Y AI investments respectively.
- The square roots of these variances give the standard deviations of X and Y of AI investments.

Correlation Coefficient:

- r is the ratio of the covariance to the product of the standard deviations of X and Y, indicating the strength and direction of the linear relationship between the two variables of all the AI investments.

This formula is a statistical indicator measures and indicates the level to which there exist strong variables between two related linear values. When values of r which ranges between -1 and 1 exist, the following conditions hold:

- r=1 shows that there exists a perfect positive linear relationship,
- r=−1 shows that there exists a perfect negative linear relationship,
- r=0 shows that there is no linear relationship.

Slope and Correlation:

- In our experiment, the slope β1 of our linear regression model as shown in the results section, shows a directly proportional to the Pearson correlation coefficient. We then standardized the slope to be equal to r.

Coefficient of Determination (R^2):

- The square of the Pearson correlation coefficient, r^2, is known as the coefficient of determination. It represents the proportion of the variance in the dependent variable that is predictable from the independent variable(s).
- R^2 ranges from 0 to 1, where:
- R^2 =1: Perfect fit; the model explains all the variability of the response data around its mean.
- R^2 =0: The model does not explain any of the variability of the response data around its mean.

6.1 Practical Applications in Machine Learning

Feature Selection:

During the evaluation process, and feature selection, we prioritized all features within the AI investments for all the 62 nations, but keen attention was placed with high correlation with the AI investments target variable. Our reason was because high correlation variables contribute more to the predictive power of the model and thus will enable us to understand the most AI investments priorities.

Multicollinearity Check:

We did perform a thorough checking of the correlation among independent variables. This process helps us identify multicollinearity, which helps prevent inflation of the variance of the coefficient estimates. This also helps our model to be more stable. Failure to identify multicollinearity inflate the variance of the coefficient and makes the model unstable.

Model Evaluation:

We pay attention to high r values between predicted and actual values of all AI investments in the test set which helps to indicate how good our model performance.

Model Interpretation:

We lay down a step-by-step r evaluation and validation. The simplification of the correlation coefficient enables us to better understand the Pearson correlation. The simplification of r helps in enabling us gain inside into the data variables for each individual country, making the model more explainable.

When the Pearson correlation coefficient takes values in the range (−1, 1) in a case where $Corr\ (X,\ Y) = 0$. This means that the variables X and Y have no linear correlation. In the case where $Corr\ (X,\ Y) < 0$. This means that the

variables X and Y are in negative linearly related. Lastly, when $Corr\ (X, Y) > 0$. This means that the two random variables are positively related.

Spearman's coefficient was examined in comparison to Pearson correlation coefficient according to the evaluation, when ps(X, Y) is the Pearson correlation coefficient is ranked as X and Y, referred to as ρ(a, b). Whenever there exist or ties are found in the data evaluating, the tied is ranked typically as an average in the Spearman's coefficient.

But in Pearson's correlation coefficient ρ, when measuring a linear relationship between two variables of a random nature, Spearman's correlation coefficient ps takes into consideration the monotonic association and it is also far less restrictive.

In our investigation, we utilize Pearson correlation metrics. The following paragraphs explain the process we employ. The paragraphs also explain how we utilize Pearson correlation to build our model In our investigation, we utilized 12 economic sectors that were the same for all the 62 nations. The unique economic sectors help to only concentrate on building our model that compares investments for the 62 nations. The difference in investment amounts and abilities further provide more information to our model to sort the investment difference. In the training model, 15 sectors were identified as priority areas for the 62 nations.

7. Results

Pearson correlation coefficient metrics and Linear Regression technique was utilized to build a model that predicted investment priorities for 62 nations. A variety of studies have effectively used Pearson correlation to solve statistical issues (Van Roy, 2020). Ventilation of lung diseases were investigated using Pearson correlation (Roberts *et al.,* 2024). In our study, we use Pearson correlation to investigate AI investments priorities.

In our investigation, the investment priority categories below were distributed as follows. The results analyzed and presented in this section were actual investments for the 62 nations. The predicted result based on the Pearson correlation coefficient metrics and Linear Regression technique in figure 9 are as per figure 8.

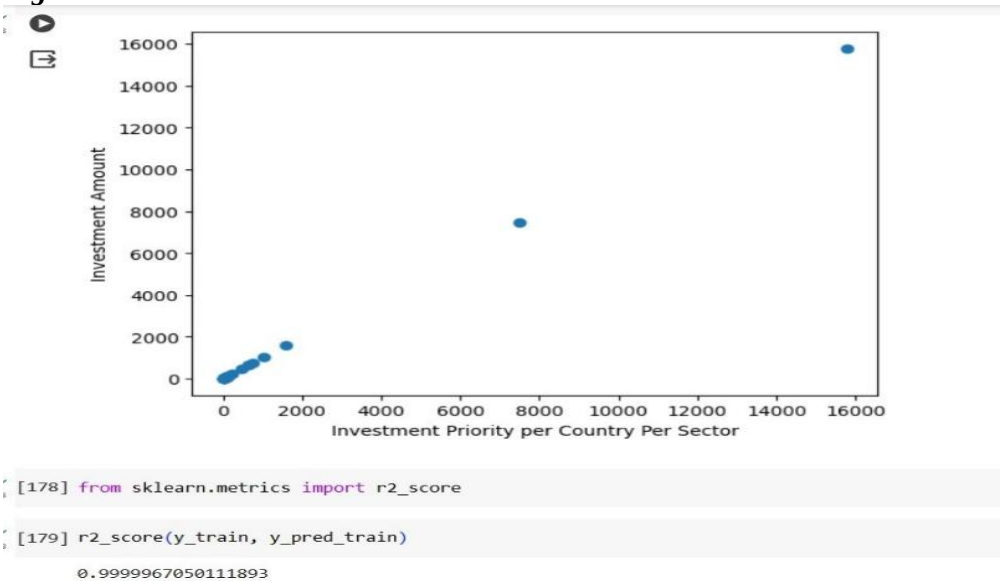
Based our trainning AI model predicting for the 62 nations top priority investments of their individual artificial intelligence as shown in Figure 11 below. Following indicates that the following investments related to one or more of the nations. Three (3) nations heavily prioritize media, entertainment, and marketing. One nation invested in mobility and auto. Three (3) nations invested in logistics-wholesale.

Seven (7) nations Invested in OT infrastructure. Two (2) nations invested in digital security. Five (5) nations invested in business and support. One (1) nation Invested in robots/sensors and IT hardware. Nine (9) nationsinvested in operational environment.

Four (4) nations Invested in finance and insurance. Two (2) nations invested in AI health, drugs and biotechnology One (1) nation invested in energy raw material and utilities. Nine (9) nations invested in smart cities. Eight (8) nations invested in government strategy. One (1) nation invested in development. Six (6) nations invested in AI talents/skill jobs.

From the above statistics, our model prediction was to visualize these statis- tics in a linear regression graph. Our aim was to see a correlation metrics plotted graph with fifteen linear scatter plots.

Figure 9. *Investments Priorities Predicted Results*

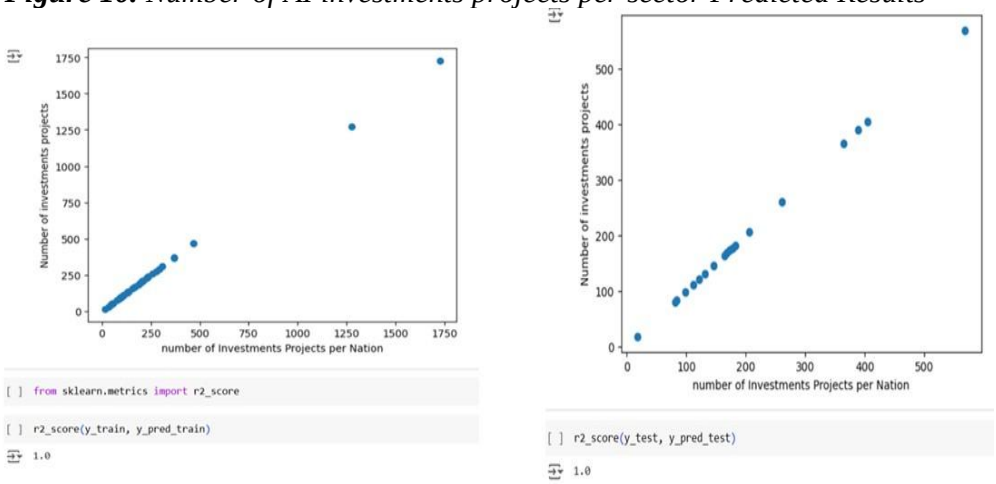


Source: *Own study.*

Figure 9 represents our model output and its accurate predictions. In our investigation, we identified the following statistics that we visibly represented in our final training graph.

In our study, the USA invested 15772, China invested 7484, Sweden invested 1596, India invested 1040 and the rest of the nation's investments fell below a thousand. In our linear regression all the statistics were accurately predicted with a score of 0.999.

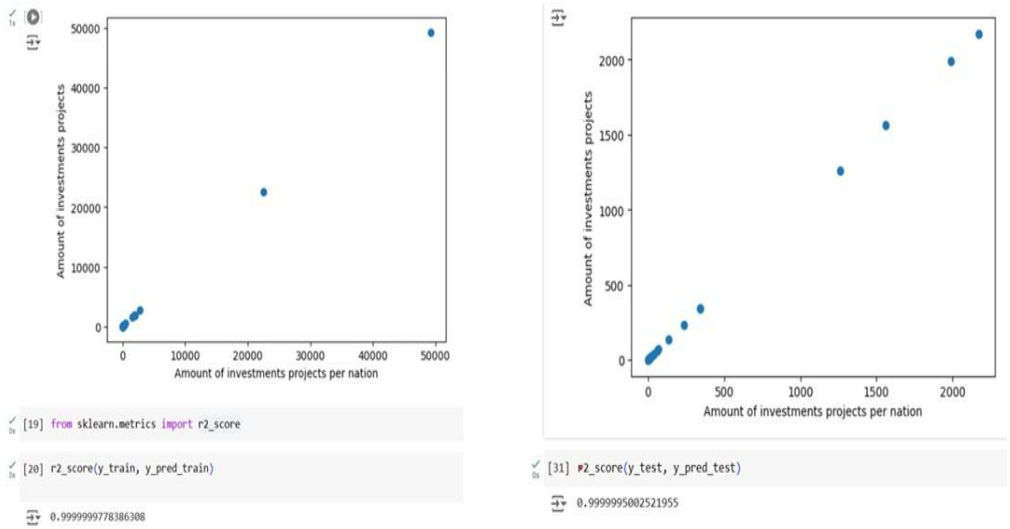
Figure 10. *Number of AI investments projects per sector Predicted Results*



Source: *Own study.*

Figure 10 represents the number of investments projects per sector for each individual nation amongst the 62 nations investigated in this study. From the statistic, the US and China republic top lead in the overall number of investments projects in artificial intelligence.

Figure 11. *Amount of AI investments projects per sector Predicted Results*



Source: *Own study.*

Figure 11 represents the sum of amount in millions of US dollars investments projects per sector for each individual nation amongst the 62 nations investigated in this study. From the evaluation, the US and China Republic top lead in the overall total sum of investments projects in artificial intelligence.

8. Conclusion

Based on the correlation analysis, comparison, evaluation, literature review, proposals, and recommendations of artificial intelligence investigations for this study. We concluded that the US and China have the best artificial intelligence initiatives. These two giant nations should be used as a point of reference when in need of artificial intelligence strategies. Our study can be utilized as a point of reference when developing AI models.

Our results further revealed that the US and China top the lead on AI strategies and policies. Three observations were drawn:

1) The US and China implement high investments on talent (citizens), IT infrastructure (open access to data) and operations that promote good regulatory policies, national opinion, and nationwide public AI strategies).
2) The US and China heavily prioritize innovative research (funds publications and encourages credible publishing). The US and China fund development of platforms and software algorithms that have innovative AI systems.
3) The US and China have specialized committees and huge national investment budgets for AI startup projects than any other nations.

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