

States sentiment towards Artificial Intelligence in international settings

Viktor Skog

Carl Vikberg

Department of political science

Stockholms Universitet

2024-01-04

Abstract:

AI is creating a global societal paradigm shift since it is a general purpose technology with seemingly unstoppable potential. Although large economic and societal advantages seem apparent, the technology is also recognised to pose an existential threat to humanity. Experts and politicians highlight these risks, however there is a lack of international regulation on the matter. Using international relations theory and previous research on AI governance, reasons for the absence of regulation is procured through analysis of states sentiments in the UN. Applying quantitative text analysis in combination with simple and multivariate regression, a correlative statistical pattern was researched. Sentiment analysis of states in the CCW and the UN General Assembly was therefore used as empirical data to analyse the presence of a correlative pattern. Results from the statistical analysis indicate that a country with a higher vested interest in AI also tends to express a more positive sentiment about AI. Viewing nations as moving towards multipolar power dynamics (from a unipolar one) is theorised to explain the shift in sentiments over time. This research paper's main contribution to the research of political science is the descriptive statistical analysis of the CCW debates and the General Assembly discussion on AI. Research contributions are also made with regards to international relations theory about the transition from a unipolar US hegemony towards a multipolar one, i.e. between Russia, China and the US.

Table of contents:

- 1. Introduction**
 - 1.1 Background**
 - 1.2 Research questions**
- 2. Previous research**
 - 2.1 Previous research on AI governance**
 - 2.2 Previous research in international relations about international regulation of technologies**
- 3. Theoretical framework**
- 4. Empirical method and material**
 - 4.1 Choice of data**
 - 4.2 Sentiment score**
 - 4.2.1 Data from General Assembly settings**
 - 4.2.2 Data from the CCW settings**
 - 4.3 AI Readiness Index**
 - 4.4 Statistical method**
- 5. Results**
 - 5.1 General Assembly**
 - 5.2 CCW Review conferences**
 - 5.2.1 CCW reviews**
 - 5.2.2 CCW Government body**
- 6. Discussion**
 - 6.1 General insights**
 - 6.2 A theoretical explanation to the results**
 - 6.3 A discussion on sources of errors and further improvements to the research paper**
 - 6.4 Conclusions**
- 7. References**
- 8. Appendix**

1. Introduction

1.1 Background

International agreements with regards to threats to human survival have existed for a long period of time and serve as a *raison d'être* for many international organisations. The coal and steel union which later blossomed to the EU is one such example, another is the UN. Both organisations serve the purpose of avoiding another world war. After their respective inceptions, these multi-national organisations have been channels and platforms to reach conclusive deals between nations which has promoted world peace and stability. Some examples include The Treaty on the Non-Proliferation of Nuclear Weapons, the Montreal treaty and the Paris Deal. However, more recently, regional organisations such as the EU has given directives and regulations in the interest for the general public with regards to digital technology, which is exemplified by GDPR¹ and The EU AI Act.²

Other large federal nations such as Brazil³ and the USA⁴, have also initiated their domestic processes for regulation of AI and the topic has been discussed both in the Swedish⁵ and British⁶ Parliaments. The regulation of AI is a societal and political issue since similar digital technologies have already been regulated and new regulatory measures of AI in particular have been discussed. Furthermore, there are evident risks with AI, much similar to that of global warming and nuclear holocaust since their implementations in lethal autonomous weapon systems (LAWS)⁷, nuclear

¹ The European Parliament and of the Council, *General Data Protection Regulation*, 27 April 2016
<https://gdpr-info.eu/>

² European parliament, *EU AI Act: first regulation on artificial intelligence*, 08-06-2023
<https://www.europarl.europa.eu/news/en/headlines/society/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>

³ Agência Senado, *Regulação de inteligência artificial é defendida no Conselho de Comunicação*, 05 June 2023
<https://www12.senado.leg.br/noticias/materias/2023/06/05/regulacao-de-inteligencia-artificial-e-defendida-no-conselho-de-comunicacao>

⁴ The White House, *Executive order on the safe, secure and trustworth development and use of artificial intelligence.*, 30 October, 2023
<https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>

⁵ The Swedsh Parliament “Risker och möjligheter med artificiell intelligens”, 22 August 2023
https://www.riksdagen.se/sv/webb-tv/video/interpellationsdebatt/risker-och-mojligheter-med-artificiell-intelligens_ha10374/

⁶ UK parliament, *The governance of artificial intelligence: interim report; Ninth Report of Session 2022–23*,
<https://publications.parliament.uk/pa/cm5803/cmselect/cmsctech/1769/report.html>

⁷ P. Scharre, *Army of None*, W.W.Norton & company, published:2019

weapons⁸ and its potential to contribute to democratisation of biological warfare⁹ can lead to disasters where humanity goes extinct (also known as “x-risk”¹⁰). Leading individuals in the field has signed a petition to stop all further AI development because of their concerns of the x-risk¹¹ and considering the risks of the technology one can suppose that there would be international regulations in place. International regulation is, however, still absent. The concerns domestically (as illustrated by committees and Parliamentary discussions) and internationally (the open letter) indicate that there would be a large demand for international cooperation on the matter, yet there seems to be seemingly no clear regulatory framework, neither in the general use and development of AI, nor in the specific application, such as LAWS, in place. Although international efforts to addresses AI like that of UNESCO’s “Recommendation on the ethics of Artificial intelligence”¹² do exist, the recommendations only urges for awareness with regards to the lack of ethics with AI, with neither awareness nor ethics being clearly defined concepts. These protocols are seemingly far from a tangible regulation.

Since most states have expressed an urge to regulate artificial intelligence due to safety concerns, it seems feasible to think that if there was a regulatory discussion between states, countries would come to an agreement. One example of this is the attempted regulation of LAWS in the UN CCW fifth and sixth convention, which has still not reached any conclusive result in spite of repeated negotiations.

Furthermore, weapons systems are explicitly designed to be dangerous applications of AI and therefore, regulation of it seems like the logical outcome keeping historic regulations in the CCW (regulation of laser weapons, landmines, incendiary weapons etc) in mind. The absence of regulation is strikingly odd considering the scale and the impact that AI is predicted to have in the future. Curiosity for close analysis of states behaviour in this setting is therefore sparked considering the aforementioned circumstances and illogical outcomes in relations to the predicted circumstances.

Analysing state’s sentiments and preferences in these international settings are hence seen as a gateway to knowledge about the absence of regulation for several reasons.

⁸ M.Horowitz, Paul Scharre, and Alexander Velez-Green *A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence*, December 2019 <https://arxiv.org/abs/1912.05291>

⁹ E.Soice et.al, *Can large language models democratize access to dual-use biotechnology?*, Media Laboratory, Massachusetts Institute of Technology, Cambridge, United States, 6 June 2023; SIPRI Yearbook 2021, P. 463

¹⁰ J.Ding & A.Dafoe, *Engines of power: electricity, AI, and general purpose military transformation*,

¹¹ Open letter from the “Future of life institute”, <https://futureoflife.org/open-letter/pause-giant-ai-experiments/>

¹² UNESCO *Recommendation on the Ethics of Artificial Intelligence*, 23 November 2023 <https://unesdoc.unesco.org/ark:/48223/pf0000381137>

Firstly, states' expressed sentiments can be interpreted as predictors for states behaviour in international settings. AI is a revolutionary technology, and regulation of it would most likely require global cooperation. Comprehending each state's sentiment could potentially guide the development of an improved regulatory framework.

Secondly, expressed sentiments from states could also mirror domestic politics which provides a benchmark for comparing domestic and international politics of states. For example, a country that is heavily invested in AI might be hesitant to support strict regulations and have a preference for domestic control. Contrarily, countries with the ambition of “catching up” with the leaders might advocate for temporary controls and regulations, showcasing a preference for regulation.

Thirdly, analysis of the sentiment of a country helps identify potential leaders in the international community with regards to AI. This knowledge is crucial for building coalitions and understanding the dynamics of international negotiations. For example, states with advanced AI capabilities might lead the way in imposing regulation efforts and standards whereas others might follow or resist based on their own national interests.

Lastly, sentiments can also be used as benchmarks for assessing the feasibility of international regulatory measures. If the majority of states express negative sentiment and opposition towards proposals, revision of regulatory frameworks and proposals to find an equilibrium between states is duly needed. On the other hand, if a sweeping support is present, the opposite (which seems to be the case at the onset of the study) should be true, i.e. regulation should be in place. Great curiosity has then been sparked by the lack of regulation from international organisations, since the above mentioned condition seems to hold, yet the axiomatically congruent regulation is absent. Therefore, the following research questions were posed as a result of these incongruences.

1.2 Research questions

What preferences¹³ do states have with regards to AI in international settings?
Why do states have the preferences they have in relation to AI in international settings?

2. Previous research

Two research fields of political science will see a contribution from this research paper; a) research on AI governance and b) international relations research about the regulation of technologies.

2.1 Previous research on AI governance

The amount of research in political science regarding the implementation of AI systems by states has been insufficient in some areas, and superfluous in others. Examples of the few research papers available with regards to political science and AI related to the institutions and actors behind AI development and how their interactions affect the geopolitical climate are discussed here.

Research surrounding the development of AI is quite limited and maintains a focus on the technology itself rather than the governance of it¹⁴. This research is often limited to defining the scope and capabilities of AI, but also how AI will shape public discourse depending on its future applications¹⁵. Research about how AI is developed and the incentives for actors developing AI is also existent.

Leung¹⁶ has researched this topic extensively and Leung's theory is summarised in short here, due to the important role it plays in framing the research issue at hand. A hypothesis regarding the supposition about the future control and governance of artificial intelligence and its subcomponents is developed in Leung's research paper.

¹³ Preferences are defined as the sentiments states express with regards to AI depending on the setting.

¹⁴ A. Dafoe, *AI Governance: A Research Agenda*, University of Oxford, 2018
<https://www.fhi.ox.ac.uk/wp-content/uploads/GovAI-Agenda.pdf>

¹⁵ J. Turner, *Robot Rules*, Palgrave MacMillan, 2019

¹⁶ J. Leung, *Who will govern artificial intelligence?*, University of Oxford
<https://ora.ox.ac.uk/objects/uuid:ea3c7cb8-2464-45f1-a47c-c7b568f27665>

The lengthy work outlines a wide array of issues and supposes a cyclical nature to development, implementation and regulation of general purpose technologies such as aerospace technology, cryptography, biotechnology and most importantly, AI. According to Leung, actors in general purpose technologies are limited to that of three parties; states (government departments, federal governments etc), firms (private enterprise, for-profit corporations, start-ups etc) and researchers (academics and employees of both the states and the firms in the related technology). Technological development and implementation follows a three stage cycle in this framework. In the first stage, called “emergence and promise”, the technology is novel and research is mostly funded by the state, meanwhile the primary actors spearheading the development are the researchers. At the second stage of the cycle, called commercialisation and proliferation, economic interest of the technology becomes apparent. Subsequently firms and private enterprise enter the sphere, investing money in R&D and also producing for-profit market adaptations of the technology. Primary actors in the second stage are firms and researchers, whereas states take a rather passive role. At the third and last stage, called consolidation and contestation, the apparent economic value seems to illuminate its military value as well. This stage is characterised by large and wide-scale investments into the technological applications in military equipment from states. This stage is characterised by states taking a dominant position, utilising the technology to compete on the international stage for control and supremacy, rendering them as hegemons, if successful. Researchers become the least prioritised in this cycle but have historically been the most adamant to reject the military application of the technology, according to Leung. When the paper was published in 2019, artificial intelligence was at the end of its second stage, according to Leung. Leung's research focuses on AI as a general purpose technology, however, there is a significantly larger amount of literature published on the negotiations on the regulations of LAWS (probably since the general purpose dynamic technology is difficult to encompass). The Swedish International Peace Research Institute (SIPRI) yearbook series have an extensive review of the regulatory negotiations of the CCW and LAWS ¹⁷. Great depths of research on LAWS in general, both in the field of political science and in international relations, is present. High level of detail in the research about AI's potential military applications and their risks

¹⁷ SIPRI Yearbook 2020, P. 506-507

have also been outlined in this research¹⁸. The majority of literature regarding AI governance is mostly published before the pandemic and this is quite evident in the literature since the war between Ukraine and Russia¹⁹, the war between Israel and Hamas²⁰, the 5 the coup d'etats in Africa²¹ and the Covid-pandemic itself has unfolded since then.

Therefore this research contributes by adding relevancy to the literature which serves to outline AI's impact on the changes in geopolitical conditions. Recent developments in AI have lead to an increased demand for further research in political science, highlighting the specificity of AI discourse between states in different contexts. This research paper also contributes as a case study extending on Leung's research on the hypothesised third stage of AI development. Most research in this subfield of political science either focuses on the technology's effect on the state or the state's effect on the technology. Diverging from this trend, this research paper analyses how states predefined vested interests in AI affects their interactions in an international setting over time.

2.2 Previous research in international relations about international regulation of technologies

Although the research on AI governance itself is an interesting area of research, it serves this research well to turn to previous research in international relations to gain a well-rounded theoretical framework. Previous research on the subject of weapons and technologies that pose existential challenges to the human race, most notably nuclear weapons and the incentives for states to proliferate them is vast. Usually, the issues are approached from institutionalist perspectives, typically categorised into three forms of views; rational choice, historical and sociological institutionalism²².

¹⁸ P.Scharre, *Army of None*, W.W.Norton & company, 2019; M.Horowitz, Paul Scharre, and Alexander Velez-Green, *A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence*, December 2019 <https://arxiv.org/abs/1912.05291>

¹⁹ Kyiv Independent News Desk, *PUTIN DECLARES WAR ON UKRAINE*, February 24, 2022, accessed <https://kyivindependent.com/putin-declares-war-on-ukraine/>

²⁰ S.George et al, *Israel formally declares war against Hamas as more than 1,000 killed on both sides*, Washington Post, Published 8 October 2023 <https://www.washingtonpost.com/world/2023/10/08/israel-hamas-war-gaza/>

²¹ AJLabs, *Mapping Africa's coups d'etat across the years*, Published: 30 August 2023 <https://www.aljazeera.com/news/2023/8/30/mapping-africas-coups-detat-across-the-years>

²² P.Hall & R.Taylor, *Political science and the three new institutionalisms*, Political studies 1996

These perspectives make different basic assumptions about the reasons states behave the way they do and have historically. Supplementary to this research there is a wide array of international relations research emphasising the power dynamics²³ in international organisations such as the UN from different perspectives. These theories include the world hegemonic theory and that of liberal international orders²⁴.

Power dynamics between states, combined with the analysis of institutions, aims at describing why states behave and express themselves with the underlying reasoning for peculiar behaviour. In relation to proliferation of nuclear weapons, depending on the institutionalist framework chosen for analysis, reasons for obtaining nuclear weapons will depend on different frameworks of analysis²⁵. Some claim that norms about powerful nations dictate states decisions to attain nuclear weapons whilst others claim that due to imperfect information and the “anarchic nature between states”, seeking security²⁶ drives states to avoid regulation and proliferate weaponry that can lead to extinction²⁷. Whichever institutionalist approach opted for, the vast majority of research is performed using qualitative text analysis and deductive reasoning around states incentives and interactions with one another²⁸. In utilising a qualitative text analysis, focus tend to be exclusively on “the big players” such as the US, the UK, France, China and Russia²⁹. Although these nations are important there are a large quantity of other countries that express themselves and affect the international

²³ J. Mearsheimer, *Bound to Fail: The Rise and Fall of the Liberal International Order*, International Security, 2019 pages. 7–50,

<https://direct.mit.edu/isec/article/43/4/7/12221/Bound-to-Fail-The-Rise-and-Fall-of-the-Liberal>

²⁴ R.Kwon, *Hegemonies in the World-System: An Empirical Assessment of Hegemonic Sequences from the 16th to 20th Century*, Sociological Perspectives, Vol. 54, No. 4 (Fall 2011), pp. 593-617 (26 pages)

<https://www.jstor.org/stable/10.1525/sop.2011.54.4.593?seq=19> ; D. Puchala, *World Hegemony and the United Nations*, International studies review, 2005, p580

https://www.google.com/url?q=https://www.jstor.org/stable/3699675?searchText%3D%26searchUri%3D%26ab_segments%3D%26searchKey%3D%26refreqid%3Dfastly-default%253Ac9e109f6b8b8e2e0309b394eab6ed7a0&sa=D&source=docs&ust=1701774963712448&usg=AOvVaw1Px CzamiZ-FDig_egDNo6j ; J. Ikenberry, *Why the Liberal World Order Will Survive*, Cambridge University Press, 2018; J. Ikenberry, *After victory*, Princeton University Press, 2001,

https://www.jstor.org/stable/pdf/j.ctv3znx0v.13.pdf?refreqid=fastly-default%3Ad9224921920b8f88f9b915825c35e00f&ab_segments=&origin=&initiator=&acceptTC=1

²⁵ S.Sagan, *Why do states build nuclear weapons*, International security, MIT Press 1996-1997

²⁶ R.Jervis, *Cooperation under the security dilemma*, World politics, 1978

²⁷ S.Armstrong, *Racing to the Precipice: a Model of Artificial Intelligence Development*, <https://www.fhi.ox.ac.uk/wp-content/uploads/Racing-to-the-precipice-a-model-of-artificial-intelligence-development.pdf>

²⁸ E.Fournier-Tombs, *Towards a United Nations Internal Regulation for Artificial Intelligence*, Sage Journals Home, 2021

<https://journals.sagepub.com/doi/full/10.1177/20539517211039493>

²⁹ J.Butcher & I.Beridze, *What is the State of Artificial Intelligence Governance Globally?*, RUSI Journal, Vol. 164, 2019, pages. 88–96

<https://www.tandfonline.com/doi/epdf/10.1080/03071847.2019.1694260?needAccess=true>

discourse which, if excluded, leaves an analysis that does not fully encompass the entirety of the discourse. Furthermore, the nature of the theories tend to either be so grand-scale and vast that trying to disprove or prove the theory is infeasible.

The reverse might be true as well, i.e. the researchers' conclusions are case specific to the point that there is little to no applicability in the research of international relations outside the specific research context.

Usage of qualitative text analysis is prone to bias from the researcher since open-text coding can be influenced by the researchers' preconceived notions on the subject matter and may thus ad hoc choose cases that fit the explanatory theory, rather than encompassing potentially countering cases, weakening the validity of the studies proposed conclusions upon peer review and further inspection. Therefore, the vital aim of this study is to try and avoid such a method's shortcomings and also deepen the understanding in the study of international relations by providing an alternative method to the qualitative text analysis method. Wishing to avoid selection bias, the method used in this study will not transfer vague and discreditable notions of power as a discriminatory requisite of analysis. Instead all states that appear in the international setting of the UN will be included in the analysis. Furthermore, the quantitative practice of text analysis is reproducible and can, in practice, be reproduced, configured and most importantly, improved. Quantitative text analysis is thus adaptable outside the range of the specific negotiations and settings proposed by this paper counteracting the downside of qualitative analysis which seldom provides reproducibility. Research contributions in this field can also be found at the level of analysis, since predictions about state sentiments expressed can be verified or unverified by the statistical significance observed in the statistical analysis. International relations studies related to the area of regulation of technology has not seen a wide scale usage of this method. The author wishes to see many future iterations of this method used upon other contemporary research problems in the near future. Originality can also be attributed to the attempt of finding correlations between AI and sentiment, which has not been done before.

In short, the main contribution of this study is that it provides a simple outline of states' sentiments about AI in the UN. This provides a tangible descriptive outline to what states express in the UN context about AI with a method that is reproducible and

cross functional (meaning that the method can be applied on other relationships one wishes to analyse). Lastly this study synthesises the international relations studies about regulation of technologies and AI governance, bridging the gap between theories about regulation of technologies and states expressions about AI governance in an international setting.

3. Theoretical framework

This outline of the theoretical framework to understand the international setting states are in will be presented from a framework of international relations here. Theoretical interpretations of the contemporary geopolitical conditions that exist are shown to illustrate the context in which AI development is seen by states in today's geopolitical climate.

The recent Ukraine-Russia conflict³⁰ serves as a pivotal example illustrating the waning influence of the US and its European allies. Contrary to the expectations set by liberalist theories, which posit that increased trade interdependencies and economic sanctions should effectively deter military aggression, the conflict has unfolded with little restraint. This situation has exposed the limitations of traditional Western powers in influencing global events, particularly in regions where their geopolitical interests are directly challenged. Another telling instance is Mali's decision to favour Russian aid over assistance from the European Union, which marks a significant deviation from past alignments and suggests a broader realignment of global alliances³¹.

Moreover, various instances of geopolitical instability signal this shift in global power dynamics. The conflict between Hamas and Israel³² and the series of coups across the

³⁰ Kyiv Independent News Desk, *PUTIN DECLARES WAR ON UKRAINE*, February 24, 2022, accessed <https://kyivindependent.com/putin-declares-war-on-ukraine/>

³¹ J.Irish, *Deal allowing Russian mercenaries into Mali is close - sources*, Reuters, Published 13 of September 2023
<https://www.reuters.com/world/africa/exclusive-deal-allowing-russian-mercenaries-into-mali-is-close-sources-2021-09-13/>

³² S.George et al, *Israel formally declares war against Hamas as more than 1,000 killed on both sides*, Washington Post, Published 8 October 2023
<https://www.washingtonpost.com/world/2023/10/08/israel-hamas-war-gaza/>

African continent³³ are manifestations of a changing political situation. These events, coupled with the challenges in NATO's expansion efforts³⁴ and the strategic withdrawal of US and NATO troops from regions like Afghanistan and Iraq³⁵, highlight a diminishing capacity of the US and its allies to assert their influence and control as they historically have. Declining influence is not just a matter of military might but also an issue that reflects an inability to steer global political narratives and maintain international order.

Thus geopolitical trends are marked by the profound shifts of power which is manifested by the emergence of three distinct groups of nations. This drastic departure from the established liberal international order which dominated international relations theory for decades indicates a new beginning in international relations. A new dynamic similar to the Cold War era, which was characterised by a complex interplay of multipolar power struggles seems to arise. Theoretical insights from John Mearsheimer's analysis of global power structures³⁶ in conjunction with the Puchala's insights³⁷ are particularly relevant highlighting this evolving geopolitical climate. According to this framework, the world is divided into three main camps: the US and G7 nations, representing the traditional liberal hegemony; a neutral bloc, comprising predominantly developing or non-aligned states; and an emerging counter-hegemonic coalition led by China, Russia and their allies. This tripartite division is reshaping the global order, challenging long-standing alliances and power balances. Consequently, leaders of each block have made it a key issue to further the development of AI in order to secure future prosperity and might on the international playing field.

In this changing geopolitical context, the role of AI is becoming increasingly critical

³³ AJLabs, *Mapping Africa's coups d'etat across the years*, Published: 30 August 2023

<https://www.aljazeera.com/news/2023/8/30/mapping-africas-coups-detat-across-the-years>

³⁴ G. Pappin *This is why Sweden might not join NATO after all*, Published on 06/10/2023, Euronews

<https://www.euronews.com/2023/10/06/this-is-why-sweden-might-not-join-nato-after-all>

³⁵ K. Schaeffer, *A year later, a look back at public opinion about the U.S. military exit from Afghanistan*, Published: 17 August, 2022

<https://www.pewresearch.org/short-reads/2022/08/17/a-year-later-a-look-back-at-public-opinion-about-the-u-s-military-exit-from-afghanistan/>

³⁶ J. Mearsheimer, *Bound to Fail: The Rise and Fall of the Liberal International Order*, International Security, 2019 pages. 7–50,

<https://direct.mit.edu/isec/article/43/4/7/12221/Bound-to-Fail-The-Rise-and-Fall-of-the-Liberal>

³⁷ D. Puchala, *World Hegemony and the United Nations*, International studies review, 2005, p580

and central. The technological arms race of the Cold War, which was predominantly defined by nuclear capabilities, finds a contemporary parallel in the race for AI supremacy. According to Jade Leung's theory of technological development stages³⁸ AI is believed to now be in its third stage, characterised by a heightened focus on military applications. This stage is crucial as it signifies a shift from AI being a tool for economic advancement and innovation to becoming a pivotal element in national security and defence strategies. Nations across the globe are recognizing the potential of AI to redefine power dynamics, leading to an escalation in the development and deployment of AI-driven technologies in military contexts.

The political science theory around this phenomenon is similar to that of the security dilemmas of the past, particularly in the context of nuclear arms races³⁹. In a security environment where technological superiority can equate to survival and strategic advantage, nations are driven to adopt a reactive posture. This is especially evident in the context of AI, where the opacity surrounding each nation's capabilities fuels a cycle of preemptive development and deployment. For instance, if the United States suspects that China might incorporate AI into its nuclear arsenal, the response is not merely to seek confirmation but to ensure parity or superiority in AI capabilities. This mindset, driven by the uncertainty and potential risks posed by AI in military applications, sets the stage for an arms race, with each major power – including China and Russia – following suit. This dynamic ought to affect the sentiments expressed on an international stage when discussions about the technology arise since the underlying power dynamic has an influence on the states positioning in the international setting.

The implications of AI in military applications also extend beyond traditional warfare. Lethal Autonomous Weapons Systems (LAWS), powered by AI, present a new frontier in military strategy. These systems offer significant economic benefits, transforming the economics of war by potentially reducing the human and financial costs associated with maintaining and deploying traditional military forces.

³⁸ J. Leung, *Who will govern artificial intelligence?*, University of Oxford
<https://ora.ox.ac.uk/objects/uuid:ea3c7cb8-2464-45f1-a47c-c7b568f27665>

³⁹ S. Armstrong, *Racing to the Precipice: a Model of Artificial Intelligence Development*,
<https://www.fhi.ox.ac.uk/wp-content/uploads/Racing-to-the-precipice-a-model-of-artificial-intelligence-development.pdf>; R. Jervis, *Cooperation under the security dilemma*, World politics, 1978; S. Sagan, *Why do states build nuclear weapons*, International security, 1996.1997, MIT Press

Furthermore, AI systems lack the self-preservation instincts inherent in human soldiers, potentially leading to a new era of warfare that is more efficient yet raises serious ethical and strategic concerns.

Smaller nations with advanced AI capabilities stand to gain disproportionately from this technological shift. In a world where military might has traditionally been correlated with population size and industrial capacity, AI levels the playing field. These nations can now exert influence far beyond what their conventional military capabilities would allow, changing the global balance of power. Military applications of AI, and therefore military might, will thus also affect states expressed sentiments in international settings since their interest in pursuing an increased level of autonomy and strategic independence becomes more feasible. It is thus thought that a potential AI arms race can be identified through several key indicators. A notable increase in military spending on AI and related technologies by various nations is a clear sign. This uptrend in investment reflects the growing importance of AI in national defence strategies. Additionally, heightened geopolitical tensions, particularly in regions like the Middle East, Africa, and Eastern Europe, can be partially attributed to the strategic uncertainties introduced by AI since “proxy wars”⁴⁰ are a common theme of a multipolar dynamic. Finally, the reluctance of key states, especially those challenging US hegemony, to engage in negotiations and regulate AI, is another indicator. This resistance not only reflects a shift in global power dynamics but also underscores the strategic importance placed on AI as a tool for altering the traditional geopolitical landscape.

Under these contemporary geopolitical conditions, the US and China are confronting each other vis-a-vis and artificial intelligence is the catalyst and main driver of this race. In conjunction with the aforementioned examples of faltering NATO influence, one can turn to the indicators of changing status quo due to technological development. In many respect the status quo is changed, not only in geopolitical terms as illustrated in the examples above, but also by previous geopolitical analyses⁴¹. The changing of status quo due to AI's effect on power structures already affect how states

⁴⁰ A. Mumford, *Proxy Warfare and the Future of Conflict*, The RUSI Journal, 2013

⁴¹ A. Polcumpally, *Artificial intelligence and global power structure: understanding through Luhmann's systems theory*, AI & SOCIETY, 2022 <https://link.springer.com/article/10.1007/s00146-021-01219-8>

express themselves in domestic settings, expressing differing sentiments depending on how well established their own subsequent AI development is. One such example is “Beijing’s 2017 ‘Next Generation AI Development Plan’ which identified AI as a core ‘strategic technology’ and ‘international competition.’. China’s official goal is to ‘seize the strategic initiative’... and achieve ‘world-leading levels’ of AI investment by 2030; targeting more than US\$150 billion in government investment”⁴².

In contrast with the statements made by China one can turn to the US department of defense (DOD) own report on the matter in where the DOD predicts AI to be a driving force for a change in the unipolar environment⁴³. “First ... they [challenging states to the US according to the DOD] may offer competing visions of the future, and these may compete for influence within swing states in global competition. This is only one potential facet of influence between states, but it can be highly significant as it was in the twentieth century. This is particularly the case if large countries develop particular types of domestic regimes, such as Russia in the early twentieth century (i.e. the Soviet-style Communist regime) or potentially China during its rise in the 21st Century”.

As illuminated by this specific discourse, the US DOD is adamantly highlighting its interpretation of China and other states as direct threats to its hegemony status. This domestic concern also highlights Leung’s third stage in technological advancements wherein states start to emphasise technological applicability on two dimensions, both one of security and one of threat. Much like the Baruch plan as well⁴⁴, the illustrative pattern of interdepartmental play raising concerns and making drastic predictions about the technology’s ability to change power dynamics is apparent from this framework. The domestic discourse is then supposed to be influential in a state’s international expressions as well.

AI’s inherent power and its effect on geopolitical conditions ought therefore be thought of as an increase in probability for states to have differing intentions and

⁴² J.Johnson., *The end of military-techno Pax Americana? Washington’s strategic responses to Chinese AI-enabled military technology*, Pacific Review,P.361, Published online: 21 Oct 2019
<https://www.tandfonline.com/doi/epdf/10.1080/09512748.2019.1676299?needAccess=true>

⁴³ Wright et al ,*AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives*, <https://apps.dtic.mil/sti/trecms/pdf/AD1066673.pdf> , chapter 2, US Department of Defence, December 2018

⁴⁴ W.Zaidi & A. Dafoe, *International control of powerful technology: Lessons from the Baruch plan for nuclear weapons*, Centre for the governance of AI, Future of humanity institute, 2021

hence preferences regarding AI and the regulation of it. For example, the US might push for regulations to hinder China from getting a “first movers” advantage because it ensures continued hegemony for the US. Illustrations of this would be visible through low sentiment expressed in a setting of general discourse (such as the UN General Assembly) by the US. The opposite would be true for China, since the country has the ambition to be the leader in the field of AI, the country will express itself positively in a general setting and context of discussion of AI. On the other hand, in a regulatory setting (such as the CCW governmental expert body or conference), the intention of the US will be to push for regulation because it would ensure a proliferation of unipolar conditions in the international setting. Therefore, the US would want to express a positive sentiment in a regulatory context. On the other hand, China would express a negative sentiment in the regulatory setting since it would not want to be hindered by regulation, since its expressed plan is to overcome the unipolar dynamic and be in the lead of AI development. China could either be expressing negative sentiment in this setting or be absent in the discussions in order to avoid commitment to a plan that disputes its expressed national interest and goals.

To the end of analysing the preferences (and therefore sentiments) of states in international settings, this study observes the sentiment of states within the UN since it is thought of as a revealing path to understand contemporary shifts in power dynamics in the global order. Analysing these dynamics can be done through analysing a relationship between the vested interest of each state and their sentiments in different UN settings. Depending on which context and setting, states will display different sentiments due to their differences in their subsequent vested interests into AI. How states position themselves within the geopolitical context also affects the outcome of their sentiment depending on the context the discussions are taking place. This will be affected by each state's allegiance in the multipolar world, their vested interest in AI and their economic and military capabilities. Particularly how states prepare and develop themselves for the AI development is hypothesised to have the largest impact on the sentiment expressed by the states in this general setting since it will affect the propensity to partake and push for, or against regulation. In order to verify if this hypothesis is valid, this research uses statistical analysis in order to procure a correlative pattern between states' sentiment expressed and their vested interest in AI as will be described in the “Empirical method and material” section, where the specific indices, data gatherings processes and indices will be outlined.

With the above theoretical outline in place, the following hypothesis are made;

H1: The more developed and vested interest a state has in AI, the more positive their sentiment is expressed in a general setting.

H2: The effect that vested interest of AI has on countries' preferences will depend on the setting the country is expressing itself in.

H3: Contemporary geopolitical conditions make vested interest in AI a catalyst for a shift from a unipolar to a multipolar world. This will be reflected by states clustering in sentiment with their allies.

4. Empirical method and material

4.1 Choice of data

In order to try the hypotheses, a statistical method ⁴⁵ with quantitative text analysis⁴⁶ (syuzhet)⁴⁷ was chosen to pursue answers to the research questions. The main sources of data gathered was related to state expression in international settings of the united nations. Therefore statements of states in the UN General Assembly⁴⁸, the CCW fifth⁴⁹ and sixth⁵⁰ review conferences and the governmental expert bodies in the discussion of addition of LAWS in the CCW the year 2020⁵¹ and 2023⁵² was used. The reason for using the UN General Assembly statements is because the statements align with what the study aims at researching, namely, how states behave in an

⁴⁵ J.Moses & T.Knutsen, *Ways of Knowing*, third edition, 2019, pages 69-93

⁴⁶ L.Hansson et al, *R för samhällsvetare*, 2021, Studentlitteratur ab Lund, pages 201-342

⁴⁷ M.Jockers, *Introduction to the Syuzhet Package*, Published: 2023-08-11

<https://cran.r-project.org/web/packages/syuzhet/vignettes/syuzhet-vignette.html>

⁴⁸ S.Jankin, A.Baturo, N.Dasandi, *United Nations General Debate Corpus 1946-2022*, <https://doi.org/10.7910/DVN/0TJX8Y>, Harvard Dataverse, V11, 2017

⁴⁹ UN office for disarmament affairs, *fifth review conference*, 2016

<https://meetings.unoda.org/ccw-revcon/convention-certain-conventional-weapons-fifth-review-conference-2016>

⁵⁰ UN office for disarmament affairs, *sixth review conference*, 2021

<https://meetings.unoda.org/ccw-revcon/convention-certain-conventional-weapons-sixth-review-conference-2021>

⁵¹ UN office for disarmament affairs, *Governmental experts on lethal autonomous weapons*, 2020

<https://meetings.unoda.org/ccw/convention-certain-conventional-weapons-group-governmental-experts-lethal-autonomous-weapons>

⁵² UN office for disarmament affairs, *Governmental experts on lethal autonomous weapons*, 2023:

<https://meetings.unoda.org/meeting/67246/statements>

international setting. Statements that are in the General Assembly debate setting, where states are free to choose which topics to highlight, and thus, once a state has highlighted the topic, the sentiment analysis is matched to these statements, ensuring a proper sentiment analysis is done in its correct setting. This form of setting provides a rather important analysis from a theoretical perspective since analysing the general context statements of a state is indicative of its more general stance. Statements in this setting are thought of as indicative of how a state would frame and highlight the technology. If rather negative sentiment is expressed, the state might express concern and open itself for regulation. Positive sentiment would therefore be considered the negating axiom of this position, rendering the country in protest of regulatory measures.

The CCW review and their subsequent governmental expert bodies that were formed from the conference reviews are used as they are examples of specific international regulatory settings for states to interact and express their preferences regarding AI regulation. Unlike the General Assembly, where states are free to choose what topic to discuss, the governmental expert bodies represent specific attempts at regulating AI. This means that the data will represent quite clearly a specific context in which states do express themselves. Contextual sentiment is important since it can highlight many of the differences between states with regards to their perception of capabilities in this field. The CCW data is also good as it is cross sectional data at different points in time. This allows for tracking unipolar to multipolar power dynamics between states within the UN context over time, which is crucial in analysing trends in geopolitical contexts.

4.2 Sentiment score

Sentiment analysis, as used in this study, is ascribing a negative or positive value to words into a list called a “dictionary”. Each statement is matched with the dictionary, looking for matches between the words in the document and the dictionary. Sentiment score is this study’s indicator for states preferences and thus the dependent variable for the analysis. The sentiment scores are interpreted as an attempt at defining the

preference of states with regards to AI. R and RStudio was used in order to make the sentiment analysis using the dictionary syuzhet.

4.2.1 Data from General Assembly settings:

Data has been gathered from Harvard's dataset on the UN general debate corpus which is data of countries statements in the UN General Assembly that stretches from 1946 to 2022 ⁵³.

The entire dataset was searched through for the following keywords:

Artificial intelligence, Artificial general intelligence, GPT, General purpose technology, Lethal autonomous weapons systems and Lethal autonomous weapon system.

Once a file had been found containing the search term, the document was sectioned containing the section before and the section after the section where the search word was found. Each file was read through by R and had sentiment scores (by syuzhet scores) performed on each word. The score was then matched to each country. This was later distilled into the bar chart that can be found in the appendix (See 8. Appendix).

Supplementary to the Harvard dataset, sentiment data was gathered from the UN digital library ⁵⁴ containing the word "Artificial Intelligence"⁵⁵ in the search term and filtered to the General Assembly. The data differ from the Harvard dataset, since the Harvard dataset includes debate corpus whereas the digital library contained a wider variety of documents. The same sentiment analysis method was used for the UN digital library by reading through its PDF-files, converting them to txt-files and then performing sentiment analysis. The inclusion of this data was done in order to improve the n-value, since the general opinions of states are of interest since it

⁵³ Jankin, Slava; Baturo, Alexander; Dasandi, Niheer, 2017, "United Nations General Debate Corpus 1946-2022", <https://doi.org/10.7910/DVN/0TJX8Y>, Harvard Dataverse, V11

⁵⁴ UN digital library, <https://digitallibrary.un.org/record/4021973?ln=en>

⁵⁵ UN digital library, *Search term: Artificial intelligence*, [https://digitallibrary.un.org/search?ln=en&rm=&sf=&so=d&rg=50&c=Resource Type&c=UN Bodies&c=&of=hb&fti=0&fct__2=General Assembly&fct__3=2023&fti=0&p=artificial intelligence](https://digitallibrary.un.org/search?ln=en&rm=&sf=&so=d&rg=50&c=Resource+Type&c=UN+Bodies&c=&of=hb&fti=0&fct__2=General+Assembly&fct__3=2023&fti=0&p=artificial+intelligence)

ensures more congruent statistical analysis in many regards. The years where the documents were searched and downloaded from were from 2017 to 2022.

4.2.2 Data from the CCW settings⁵⁶:

The first instance of a mentioning of LAWS inside the UN was in 2013⁵⁷. For this study, only states having expressions about LAWS is interesting, therefore the data that was gathered from the CCW fifth⁵⁸ and sixth⁵⁹ conferences of revision of the CCW only pertains to the expression of states (NGOs and UN organs are excluded). The expert panels on LAWS, and their discussions for 2020⁶⁰ and 2023⁶¹ was included for analysis again, only pertaining to the expressions of states within this context.

Data was gathered by manually downloading the PDF files from these conferences. Some of the important statements by states were unavailable or not found during the data gathering process. As the statements of the US and China was considered too important to be left out of the analysis and if these countries statements were not found on the CCW digital platform it was gathered from elsewhere ⁶².

A two step process was done where the files were first entered into a computer in order to simplify the coding process and then translating the relevant files so that all the files were in English. This is because syuzhet becomes consistent when only using English as the language of analysis. The files that were not in English were hence translated using chatgpt.

⁵⁶ All the data can be found in this link:

https://drive.google.com/drive/folders/1-_6jX_au8CBpbKpKTRoymnn2QzymT6T0?usp=sharing

⁵⁷ UN Office for disarmament, *Lethal Autonomous Weapon Systems (LAWS)*, Published: 2023

<https://disarmament.unoda.org/the-convention-on-certain-conventional-weapons/background-on-laws-in-the-ccw/#:~:text=UN%20Special%20Rapporteur%20on%20extrajudicial%2C,Human%20Rights%20Council%20in%202013>

⁵⁸ UN office for disarmament affairs, *fifth review conference*, 2016

<https://meetings.unoda.org/ccw-revcon/convention-certain-conventional-weapons-fifth-review-conference-2016>

⁵⁹ UN office for disarmament affairs, *sixth review conference*, 2021

<https://meetings.unoda.org/ccw-revcon/convention-certain-conventional-weapons-sixth-review-conference-2021>

⁶⁰ UN office for disarmament affairs, *Governmental experts on lethal autonomous weapons*, 2020

<https://meetings.unoda.org/ccw/convention-certain-conventional-weapons-group-governmental-experts-lethal-autonomous-weapons>

⁶¹ UN office for disarmament affairs, *Governmental experts on lethal autonomous weapons*, 2023:

<https://meetings.unoda.org/meeting/67246/statements>

⁶² US fifth review statement

<https://geneva.usmission.gov/2016/12/12/u-s-opening-statement-at-the-fifth-review-conference-of-the-convention-on-conventional-weapons-ccw/>

All files were stored in the .txt format and a sentiment analysis gathering the scores from them was done. The countries were ascribed their names in isocode2c in R which made merging of data frames simpler.

In some cases, groups of nations had made joint statements, such as in the case of the 2020 and 2023 governmental expert review. All the countries within the group were, when unnested, assigned the exact same sentiment score. The reasoning behind this assignment of sentiment score was that the states found the statements acceptable and therefore adhere to the same sentiment as the spokesperson the group.

In some cases, the EU expressed a statement on behalf of all the states in the EU. However, many nations provided individual statements on the matter in the same round, leaving space for interpretation. In such cases all EU countries were unbundled and ascribed their subsequent AI index score, however, they were all given the same sentiment score as the EU. If the country had expressed themselves individually, their individual statement sentiment score was kept and their EU score was discarded. The reasoning behind is that if the nation felt a strong need to express itself separately from its EU statement, then that would be more representative of the country's stance, rather than the statement through the EU. For the fifth and sixth reviews, only the general statements were used for sentiment analysis. All the text for the fifth review was searched through for certain keywords related to LAWS (since the fifth review was not specifically related to LAWS). Therefore two nations were excluded from the sentiment analysis, Belgium and Laos, since neither mentioned LAWS in their statements. For the fifth review, there were many preparatory commentary files available, however most of the countries that had done preparatory statements either opted to join in on a group statement or they decided to abstain from making a statement in the discussion. Out of all the CCW data, the 2016 general review is that of least significance in the discussion of LAWS for two reasons. Firstly, it is the oldest one and thus the farthest from a multipolar order, secondly, the review did not have LAWS as a specific point of interest on the agenda.

The reliability of the syuzhet dictionary can be flawed in some aspects. Firstly, dictionaries should really be as specific as possible when it comes to sentiment analysis, whereas syuzhet is rather general. Secondly, context is often lost since parts

where a state might express AI as a solution to problems but opt to frame their statement in the UN with colouring adjectives, that in syuzhet would ascribe their stance as a negative sentiment. In reality, the stance is more moderate and/or positive. Thirdly, there are some positive and negative words that are outside the scope of the syuzhet method's scope and is therefore not captured in full width of the statement's sentiment. Fourthly, there are issues in translation of certain documents since there are cases during the translation process in chatgpt where contextual understanding might have been lost in translation or the adjectives have been wrongly translated from Spanish, French, Arabic or Russian. These technical issues have not been reprimanded and can affect the outcome of the statistical analysis since mechanical translations can often translate in an incorrect fashion. One example is that in many cases the words “lethal autonomous weapons systems” were translated to “autonomous lethal weapons” due to semantic differences between the languages. However, many of the adjectives still remain in the source text and are thus considered reliable for analysis and have then been kept for the framework of analysis of this paper.

There is a question if the validity of sentiment scores is representing the states own preference. It could be argued that the method of syuzhet might not align with a state's actual preference since it favours certain keywords over others. A risk exist that the result is skewed towards a faulty preference due to diplomatic niceties and jargon in the UN. Although room for concern is warranted, the sheer volume of data points with regards to the repeated studies of countries' sentiments expressed over different contexts are assumed to incorporate this concern. This is done by tracking the discussions in the CCW over time and also having large n-value as analysis in general setting is done. Preference indicators might be affected by context and substance, however, the quantitative analysis outlined by repeated analysis over time and different contexts reprimands these concerns and ensures the validity of the data.

4.3 AI Readiness Index

In order to analyse the relationship between states and their AI development, some unit of measure for states with regards to AI development must be suitable for an

analysis. Therefore, using the “AI readiness index”⁶³ for the years 2023⁶⁴, 2022⁶⁵, 2020⁶⁶ is used in this study. The index analyses the readiness of governments to provide and implement AI into public services. This is measured on three pillars; a government pillar (which measures government AI strategies), technology sector (which measures the country’s technology sector)and the country's availability to data and infrastructure (related to AI development). The index serves well for this statistical analysis since it is an independent variable from the expressed sentiment of states in international settings and it captures the essence of the states respective stance and ranking towards other states with regards to artificial intelligence. The advantages of these indices is that they can be matched with the sentiment data from different time periods. This accounts for changes in states' artificial intelligence scores as different nations emphasise development of the technology differently. Readiness is also considered an appropriate measure in real terms since the vast and full capabilities of AI has not yet come into fruition. The scale of the index spans from 0 to 100

The AI index is a good tool to see this “readiness” of the countries with regards to AI, however, in the context of power dynamics on the international stage, this AI index might not serve all too well if it remains the sole variable of analysis in correlative terms to the sentiment scores of states in the international setting. A more developed index with regards to “AI power”, that would encompass a host of variables related to political science, such as nuclear weapons capabilities, cybersecurity infrastructure, propaganda/disinformation capabilities and more, would be of great importance for future iterations of this study with regards to relevancy of the technology’s military applications. Initially, a different index with more variables were included ⁶⁷ but this index was discarded due to the low n-values of countries and its static nature (only available for the year of 2023).

⁶³ Oxford Insights, *AI Readiness Index*, <https://oxfordinsights.com/ai-readiness/ai-readiness-index/>

⁶⁴ Oxford Insights, *Government AI Readiness Index 2023*, 2023
<https://oxfordinsights.com/wp-content/uploads/2023/12/2023-Government-AI-Readiness-Index-1.pdf>

⁶⁵ Oxford Insights, *Government AI Readiness Index 2022*, 2022
https://oxfordinsights.com/wp-content/uploads/2023/11/Government_AI_Readiness_2022_FV.pdf

⁶⁶ Oxford Insights *Government AI Readiness Index 2020*, 2020
<https://oxfordinsights.com/wp-content/uploads/2023/11/AIReadinessReport.pdf>

⁶⁷ Cesareo. S & White. J, *The Global AI Index*, 2023
<https://www.tortoisemedia.com/intelligence/global-ai/#rankings>

4.4 Statistical method

Once all the tables were set up containing the three columns of country code, sentiment score and AI index, a regression was performed on the variables.

For a simplified version of the formula, here's how it looks

$$Y = \alpha + \beta * X + \epsilon^{68}$$

Where Y is the dependent variable (sentiment score), α is the intercept where the regression line crosses the Y-axis, β is the coefficient to the variable, i.e. how much change a one unit increase in X affect Y, X is the independent variable, i.e. the AI readiness and lastly ϵ , which are the unaccounted for error terms in our model.

This was done in R using the “lm(*dependent variable ~ independent variable*)” function, which uses the ordinary least square⁶⁹ method to create the regressors that are displayed (see 5. Results). The simple linear regression of sentiment score as a dependent variable and AI readiness index as an independent variable is done in order to analyse the hypothesis. The method makes it possible as an individual to check whether there is a correlation between the variables with statistical certainty.

Although indicative of correlative patterns a full ended regression analysis is prone to be faulty in estimating causal relationships. Regression analysis can illustrate correlative patterns with high statistical certainty, however, factors of error such as omitted variable bias, measurement errors and reverse causality are factors to account for when trying to outline the relationships present in this model. AI readiness might be the result of positive sentiment and vice versa. It can also be that some other confounding variable affects *both sentiment and AI readiness at the same time*. To account for this, control variables have been introduced.

The hypotheses provided do include other factors such as military might or power in the international arena. These factors are not incorporated in the AI readiness index and thus, to account for states real capabilities in this regard, one can turn to military spending, economic production capabilities and human capital in order to analyse the

⁶⁸ J.Moses & T.Knutsen, *Ways of Knowing*, third edition, 2019, p.88-91

⁶⁹ J. Stock & M. Watson, *Introduction to econometrics*, Fourth edition, 2020, p.148-151

strength of the AI readiness in isolation. These control variables' purpose is that of incorporating the dynamic nature of AI and power on the international stage that can be hypothetical confounders to this analysis, affecting both the sentiment and the AI readiness index. Human capital is included since it is seen as the most important production factor for AI development ⁷⁰ (since AI is mostly based on know-how of technological structures and software development). Military spending⁷¹ is used as a control due to the effect the military might have on world politics with regards to power dynamics. This is also contrasted by GDP⁷² since the production capabilities of a country also plays a significant role when considering the capabilities of a country to invest and allocate resources towards AI development.

The multivariate regression model looks like this:

$$Y = \alpha + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \beta_4 * X_4 + \epsilon^{73}$$

Where:

X_1 = AI readiness

X_2 = Military expenditure

X_3 = GDP PPP

X_4 = Human capital index.

These control variables were also checked for multicollinearity using the preprogrammed variance inflation factor.

This was done in R using the “*lm(dependent variable ~ independent variable control variable1 + ...)*” function. The variables' purpose was to analyse potential confounding variables that may affect both the sentiment and the AI readiness.

5. Results

Regression analysis, trying to verify or diversify correlation between AI readiness and

⁷⁰ World Bank, *Human Capital Index (HCI)*, 2020 <https://data.worldbank.org/indicator/HD.HCI.OVRL>

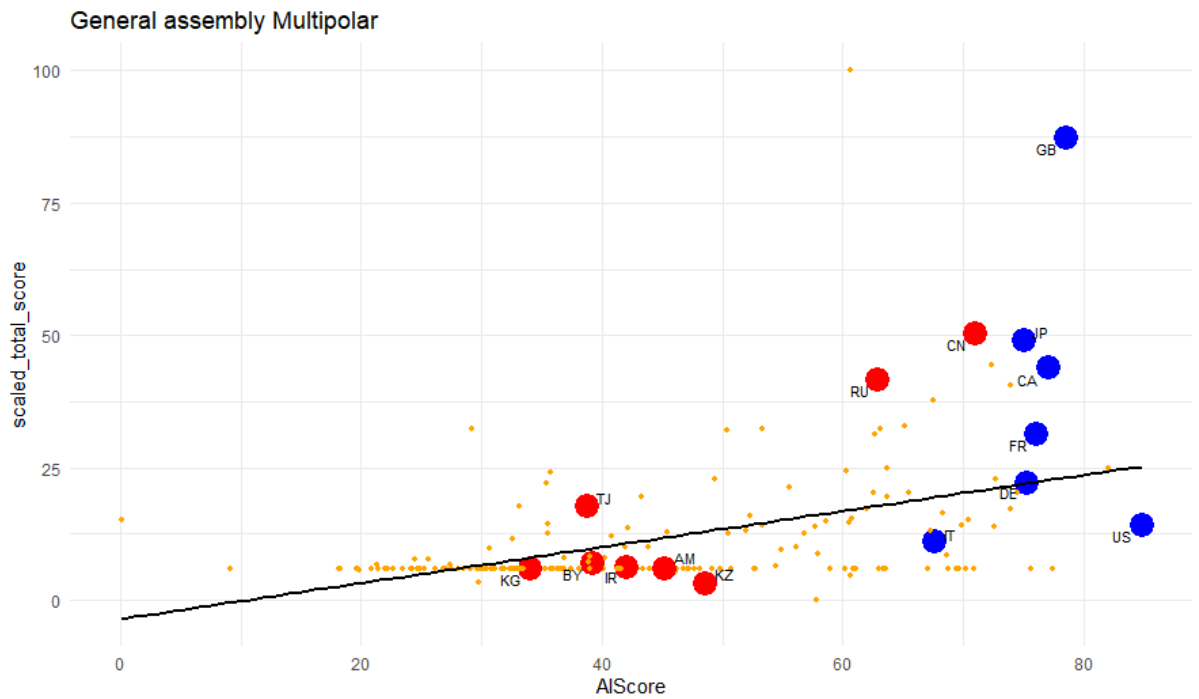
⁷¹ SIPRI, *SIPRI Military Expenditure Database*, 2022 <https://www.sipri.org/databases/milex>

⁷² World Bank, *GDP, PPP (current international \$)*, 2016, 2020, 2021, 2022 <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD>

⁷³ J. Moses & T. Knutsen, *Ways of Knowing*, third edition, 2019, p.81-88

sentiment score from states sentiments in the UN has been performed and garnered results about the correlations of the variables.

5.1 General Assembly



(Figure 1. Sentiment score for General Assembly data, G7 Nations in blue and China and the collective security treaty organisation countries in red. Other nations are in orange)

Dependent variable:		

AI Readiness	0.356*** (0.047)	0.255* (0.140)
Military expenditure		-0.00005** (0.00002)
GDP (PPP)		0.000*** (0.000)
Human Capital Index		0.121 (0.156)
Constant	-4.318* (2.277)	-7.037 (4.361)

Observations	193	143
R2	0.227	0.275
Adjusted R2	0.223	0.254
Residual Std. Error	11.021 (df = 191)	12.096 (df = 138)
F Statistic	56.090*** (df = 1; 191)	13.065*** (df = 4; 138)
=====		
Note:	*p<0.1; **p<0.05; ***p<0.01	

(Table 1: UN General Assembly regression)

In the UN General Assembly there is a positive correlation between AI readiness and sentiment expressed. For each unit of increase in AI readiness, there is a 0.356 increase in sentiment. Sentiment has been scaled from the highest score (value of 100) to the lowest score (value of 0). This means that there is a 0.356 increase in scaled sentiment (sentiment relative to the UN General Assembly context) for each increment in AI readiness. The strength of the correlation between AI readiness and sentiment is therefore established. It is also guaranteed on the 99% confidence interval. The R-squared value was 0.227 which is clearly illustrated by the fact that many nations simply do not express themselves at length in a polemic fashion, but are

yet included in the General Assembly discussions as seen in the data. The number of observations were 193, which is a very high n-value, considering that many nations in for example Africa, which are included in the data, have not as well established AI sectors as Asia, Europe and North America.

When looking at the multiple regression however, there is a significant decrease in statistical significance from the 99% confidence level to the 90% confidence interval. The other variables, military spending for example, has a negative effect on sentiment score e.g. a larger defence budget has a negative impact on the sentiment expressed in the General Assembly. GDP in PPP had no effect on the sentiment which is determined at the 99% confidence level. It is worth noting that the number of observations in the multiple regression decreased from 193 to 143. The decrease was caused by removal of NA values in the merging of different datasets. Removing the NA values was done on the basis that ascribing random values to the variables would make the data speculative and faulty.

The General Assembly setting has thus shown that there is a correlation between levels of AI readiness and sentiment expressed. When accounting for confounding variables such as defence spending, GDP and human capital are accounted for, there is a decrease in statistical certainty of this correlation, however, it is still within the 90% confidence interval.

5.2 CCW Review conferences

General results:

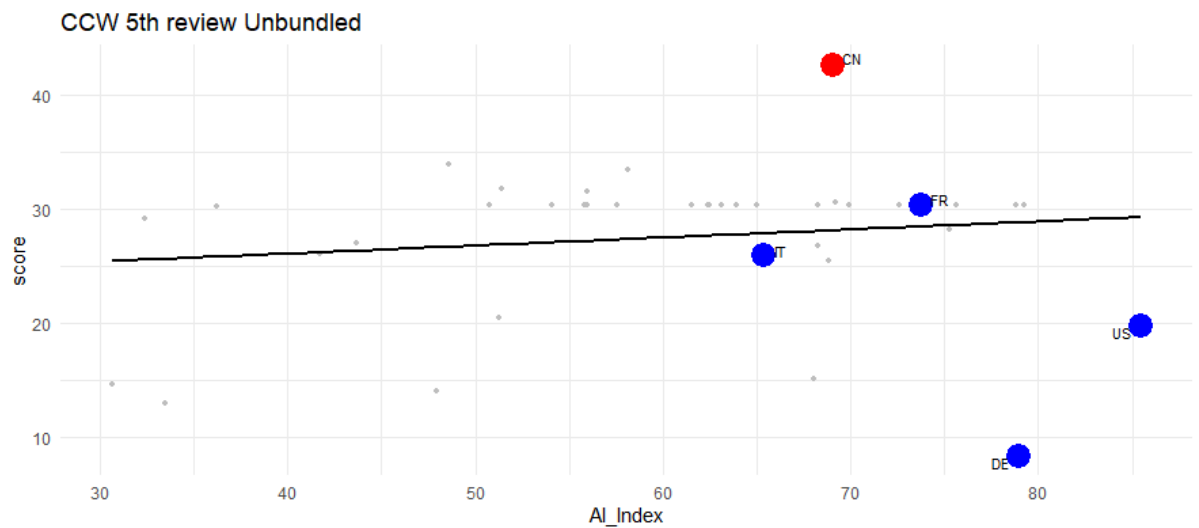
Dependent variable:				
	(2016)	(2020)	(2021)	(2023)
AI Readiness	0.071 (0.079)	0.994 (0.666)	0.760*** (0.181)	0.624*** (0.175)
Constant	23.268*** (4.861)	24.615 (44.271)	-4.669 (11.033)	9.647 (11.020)
Observations	39	27	60	54
R2	0.021	0.082	0.233	0.196
Adjusted R2	-0.005	0.045	0.219	0.181
Residual Std. Error:	6.714 (df = 37)	49.176 (df = 25)	20.368 (df = 58)	14.877 (df = 52)
F Statistic:	0.806 (df = 1; 37)	2.229 (df = 1; 25)	17.572*** (df = 1; 58)	12.715*** (df = 1; 52)
Note: *p<0.1; **p<0.05; ***p<0.01				

(Table 2: Summary table of all the coefficients in the simple linear regression of AI readiness as independent variable and sentiment scores as dependent variable)

5.2.1 CCW reviews

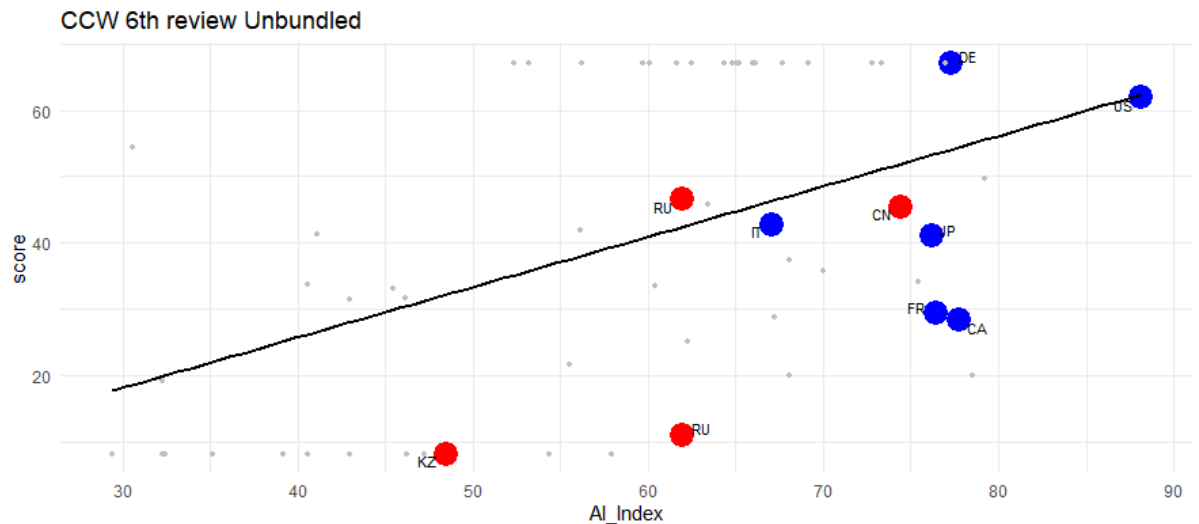
The CCW reviews are divided into two sessions, the fifth review, held in 2016, and the sixth review held in 2020. In the fifth review there was no correlation that could be determined by the statistical significance levels since the regressor was not

statistically different from zero.



(Figure 2, Sentiment score for CCW 5th review conference in 2016, G7 Nations in blue whereas China and the collective security treaty organisation countries are in red. The other nations are in grey)

In the sixth review, however, there was a statistical significance on the 99% confidence level. The regressor value was 0.760. Scaling, as done in the UN General Assembly context, was not done here for two reasons. Firstly, when unbundling the group of states statements and EU statements and converting the score to a scaling system was tried and made the scaling lean heavily on these values since they sometimes contained a large portion of the countries in the context of the discussion. This meant that the scaling would go from large and small values extremely quickly. Secondly, scaling from 0 to 100 tends to favour outliers, and in the case of the CCW review, where quite large differences are observed in the sentiment score, between the highest and lowest, making a scaling rendered the results as quite inconclusive. The score of 0.760 should then be interpreted as follows; for every unit increase in AI readiness, there is a 0.760 increase in sentiment score. This means, assuming the data is sufficient in the context, that in order to get a one unit increase in the sentiment score (as defined by a +1 syuzhet score) one needs an increase in AI readiness of about 1,315 on the AI readiness index, i.e. there needs to be a larger than one unit increase in AI readiness for a 1 unit increase in sentiment.



(Figure 3. Sentiment score for CCW 6th review conference in 2021, G7 Nations in blue and opponents in red)

However, this correlation is almost non-existent in the multivariate regression. There is no statistical significance on any of the variables in this context. This indicates that other factors affect state sentiment more than the AI readiness index (See 8.Appendix).

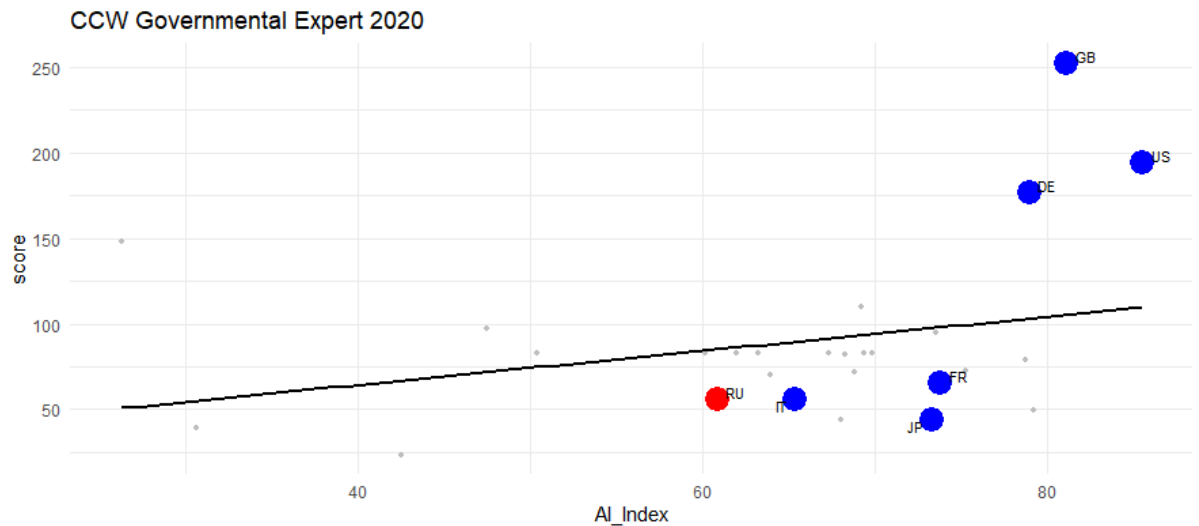
5.2.2 CCW Government body

In the governmental body context, states are free to express themselves on the exact specific context of the AI implementation into lethal weapons. In order to interpret the results, one ought to remind oneself of what the sentiment displays. The data is the expressed sentiment of the different countries in this specific regulatory setting, hence indicating their preferences. Low sentiment score in this context is then interpreted as preference to not follow through on regulation. Preference for regulation is showcased in the reverse case of this scenario (high sentiment score is present).

The 2020 government body showed no statistical significance in the simple linear regression on the 99%, 95% and the 90% confidence interval. The results are thus inconclusive in this context.

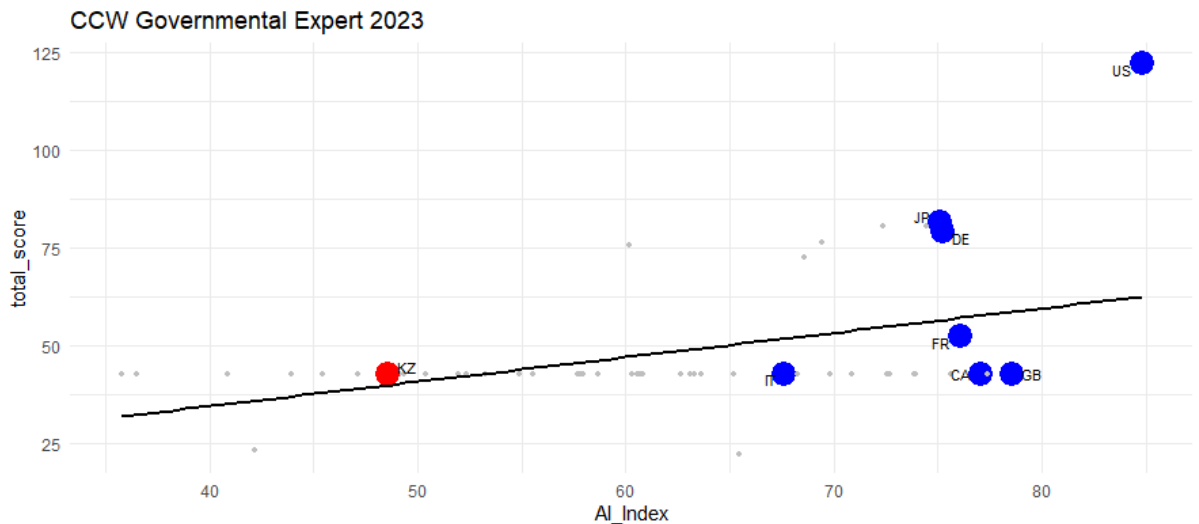
However, turning to the multivariate regression (See 8.Appendix), there is a statistical significance on the 95% confidence level in the AI readiness, whereas there is no

correlation on any other variable. This change in statistical significance can be due to the diminishing of three observations due to the exclusion of the NA values. It can also be due to the multicollinearity as observed by the variance inflation factor values of the military expenditure and the GDP.



(Figure 4, Sentiment score for CCW government expert body 2020, G7 Nations in blue and opponents in red)

The simple linear regression of the governmental body of 2023, one sees a statistical significance on the 99% confidence level in the simple linear regression. If taken at face value as a true and consistent estimator of the relationship between the variables, one could claim that a one unit increase in AI readiness is conducive to a 0.624 sentiment score increase in the governmental body review session. The values are correlated with the sixth review session since the 2023 discussion is the result of the sixth review conference's decision to create the governmental expert body.



(Figure 5, Sentiment score for CCW government expert body 2023, G7 Nations in blue and opponents in red)

However, as there is a multivariate regression performed, the statistical significance disappears. The N-values remain the same through the multivariate regression and also there is a substantial increase in adjusted R2 value.

6. Discussion

What follows below is a discussion on the results from the sentiment analysis and the regression performed. The following discussion is outlined as follows:

- 1) General insights
- 2) A theoretical explanation of the results
- 3) A discussion on sources of errors and further improvements to the area of research.

6.1 General insights

There is a correlation in the General Assembly context between sentiment and AI readiness (with 99% statistical significance), even when confounding variables are taken into account (90% statistical significance). The fifth review conference, and the government expert body that was created by that conference's coefficient has no correlation of statistical significance on a 99%, 95% or 90% confidence level.

However, the sixth review and its subsequent coefficients in the government expert body has a statistical significance on the 99% confidence level. All multivariate

regressions have no coefficients of statistical significance except the one of the government expert body of 2020, when analysing the CCW context. This is however not a reliable correlation since the simple linear regression could not provide a correlation of statistical significance. Therefore, most states that have a vested interest in AI as judged by the AI readiness index, also express a more positive sentiment towards it in the international settings of the UN, aligning with *H1* (see 3. Theoretical framework for hypotheses).

Looking at some key player states, one will find that states such as the US, Russia and China will display differing sentiments depending on which context they are in. The US is more positive in the CCW discussions (both conference and governmental expert body) than in the General Assembly setting. Germany is an example of a country that is more negative than expected for the CCW fifth review and the General Assembly setting, but drastically more positive than expected in the regulatory setting of 2020, 2021 and 2023. This illustrates that the second hypothesis (*H2*) seems to follow this pattern, however statistical significance can only be definitely asserted at the 99% confidence level in the simple regression. The multivariate regression seems to indicate confounding variables in this regard.

Since there is a shift in statistical significance over time, only having a statistical significance of 99% present after 2021 indicates that the recent developments after 2020 have shown that as states develop AI technologies over time, demand for regulation has risen. The lack of communication from Russia in the 2023 discussion and also the severely negative statement in the review conference statement of 2021 and governmental expert review of 2020 seem to contrast the drastic change of uni- to multipolarity in the UN. Supposition of *H3* seems to align with the data, however, larger certainty surrounding the circumstances would be evident by a specific Russian statement inside the regulatory framework discussions of 2023. The same can be said of China. The statistical significance of the correlation between AI readiness and sentiment seems to have been realised by the changing geopolitical landscape from a unipolar one (2016 and 2020) to a multipolar one (2021 and 2023), however, this is an interpretative conclusion and could be due to other geopolitical conditions.

6.2 A theoretical explanation to the results

The descriptive scatterplot of countries' sentiments as a result of this paper serves as an important contribution to the field of political science since it outlines states expressed sentiments in a comprehensive manner. AI is new to the framework of political institutions as the technology has not existed for long. Following Leung's theory on GPT governances, AI entered its later stages of the second stage just as of 2019. Therefore, the correlations that this study is trying to research is a difficult one to observe due to the rapidly changing character of the technology observed over the last couple of years. Further developments with regards to geopolitical tensions evidently affect the results of the regression as well, in specific. Russia's decision to not offer statement at the government expert body review and then criticising the UNs proposal of the LAWS regulation in place is indicative of the interplay between geopolitics and the UN ⁷⁴. This could be seen as a tangible example of how geopolitical factors shape states preferences in the UN since Russia's invasion of Ukraine is likely to heavily incentivise the country to avoid international law on the matter, rendering a window of opportunity to develop LAWS and other AI arms applications. Contrasting this with the high sentiments displayed by the US in the LAWS discussion, and also the G7 countries high sentiments, one finds that the hegemony theory might still be relevant in this situation, showing how the United States still tries to leverage its supposed strong position in the international liberal order pushing for regulation in order to maintain power on the international arena. In order to see if a state has expressed sentiment that is positive or negative, one can use the regression line in the scatterplot as a benchmark. If the country is on the regression line, one can think that the country is behaving the way the model predicts. If it is above the regression line, the country is deviating from its predicted value and thus expresses a rather positive sentiment given its AI readiness. When a country on the other hand is below the regression line, the country is expressing itself negatively. In general, this rule of thumb holds up in the case of the US with regards to its hegemony status. Looking at the General Assembly data, the US falls below the regression line, rendering the country's statements more negative than expected. In the

⁷⁴ UN Meetings coverages and press releases, *First Committee Approves New Resolution on Lethal Autonomous Weapons, as Speaker Warns 'An Algorithm Must Not Be in Full Control of Decisions Involving Killing'*, 1 November 2023 <https://press.un.org/en/2023/gadis3731.doc.htm>; Klare. M ,*Russia Blocks Move on Killer Robots Ban*, Arms control association, November 2023 <https://www.armscontrol.org/act/2019-01/news-briefs/russia-blocks-move-killer-robots-ban>

fifth review, the US still remains under the regression line. However, in the expert review, the US falls above the regression line, indicating that the country expresses strong positive sentiment in this context of a regulatory setting. However, the regression line in these two cases still does not hold due to the lack of statistical significance. This means that when interpreting the sixth review conference, the US falls almost exactly on the line. The US falls far above the regression line on the governmental expert body in 2023 as well. The US expresses a far above expected positive sentiment in comparison to the expected AI readiness that it has. Contrasting this with the results of a nation like Russia, one finds Russia above the regression line in the General Assembly, absent in the fifth review and both below and above in the sixth review. This means that in the sixth review, where there was a more general discussion about LAWS, the country found itself slightly above the regression line. However, looking at the 2020 review the country is below the regression line and opted not to provide a statement in the 2023 government expert review, and even criticised its conclusions. In this study, China finds itself far above the regression line in the General Assembly. It also finds itself above the regression line in the fifth review conference. However, for the sixth conference, it is a bit below the regression line. This indicates that as China has progressed and challenged the liberal world order, the country expresses itself less positively when speaking in a general situation. China did not hand in a statement in the expert government body review of 2020 and abstained from voting on the 2023 expert body review.

This pattern follows the transition from a unipolar world to a multipolar one, where one finds that the powers are positioning themselves in sentiment, from this theoretical interpretation, based on their relative power structures and positioning in the global arena. China and Russias positioning in conjunction with the US positioning can be seen through the lens of world hegemony theory. One can also view the positioning through an arms race dynamics where all states predict that sooner or later there will be a regulation of AI. All parties involved (in this case G7 and Russia & Chinas allies), know that AI lays at the forefront for geopolitical power challenges ahead. The US will want to push for regulation to avoid being challenged in the arms race since they already have a head start. Russia and China on the other hand see it as a great opportunity to try and tip the scales in their favour on the international arena in this regard. Delaying and actively fighting firm commitments

might be the tactic that US opponents opt for in order to not fall behind in this arms race. The main assumption in this dynamic is that there is an inevitable “pause” or stop to the development, and the most firm commitment that has stopped arms races historically is that of UN regulations much like the The Treaty on the Non-Proliferation of Nuclear Weapons. Only time will tell if this dynamic will come into fruition, however, it is worth mentioning that these theories might sometimes overestimate the rationality in states actions and forget that there are other factors at play. Bureaucratic models and incentive structures illustrate that leaders capable of instigating regulation in the international space might fail to do so for motives that remain unaccounted for in this model. Career progression and short-term political incentives on a domestic level might be the leading reasons for international regulations to fall short, as was illustrated in the Baruch plan⁷⁵. The symbolic value of having AI, just like the symbolic value of nuclear arms had for a states status on in 1970’s ⁷⁶ might be the driving factors for states to avoid regulation and invest heavily into AI application. Although these perspectives would be quite interesting fields of research, forming and making such an analysis can not be made using this method of quantitative text research. Therefore, this research is well suited for generalisable interpretations of contemporary sentiments about AI in international settings. Bureaucratic and sociological institutionalism might explain the intricacies and specificities of the issues of this regulation, which serves an important role for the political science literature as a whole. The purpose of this study is not to refute the existence of alternative theoretical explanations to the expressed sentiments in this dataset, but decided to opt for that of liberal international order, hegemony theory and the arms race theory.

6.3 A discussion on sources of errors and further improvements to the research paper

It is herein the faults of this study become apparent. A researcher opting for a statistical method will keep in mind that although the aim of a statistical method is to find generalisability, the research is only as good as its data. In this specific study,

⁷⁵ W. Zaidi & A. Dafoe, *International control of powerful technology: Lessons from the Baruch plan for nuclear weapons*, Centre for the governance of AI, Future of humanity institute, 2021

⁷⁶ Sagan. S, *Why do states build nuclear weapons*, International security, 1996.1997, MIT Press

there are issues with the data and the method.

The problem with the data pertains to the N-values in some of the contexts analysed. In some cases, the n-value is under 30. Small N makes the data skewed on the outliers and removes the generalisability of the conclusions that can be drawn from this research. However, this is partly due to the fact that AI is quite a new technology in the sphere of the public sector and for states in general. The first discussions regarding LAWS did not come up until 2016, which is rather late in comparison with other mutually assured destruction technologies and weapons.

Also the data has a high levels of multicollinearity in the multivariate regressions. This does not mean that the data is faulty per se, rather, it leaves room for improvement with choice of control variables and development of different independent variables for further iterations in the regressions.

Translations that are done mechanically are susceptible to flaws since word for word translations can losing the original meaning or be mistranslated. An element of the human factor also exists since the author has manually downloaded the files instead of using a webscraping methods. This leaves room for misunderstanding. Also, human factor flaws such as confusion and losing track of files could have occurred, but since it is due to the human factor, self correction is hard. Therefore, peer-review of the data gathering process would be a good addition to this research. The method of syuzhet is potent in its general applicability, however, for a more comprehensive research, another form of dictionary and application of sentiment scores could have been used. Due to the particularity of the diplomatic jargong of the UN, and also the differences in jargong and style of different departments within the UN, new and topic-specific dictionaries has the possibility to improve the validity of the study.

The strengths in the chosen method, however, is in its reproducibility, improvability and transparency of the method (making it completely repeatable). Furthermore, the research is improvable on all steps, so anyone daring to delve into the sentiment analysis themselves can do so, not only on this dataset, but on all datasets containing .txt-files.

6.4 Conclusions

The sentiment analysis is only statistically significant on the 99% confidence level for the UN data, the sixth review conference and the government expert review in 2023 when checked for the AI readiness index. They differ in size and strength, but the correlation is present in the simple regression. When the multivariate regression is performed, there are no significance levels that are acceptable for the CCW reviews and expert bodies but there is, however, a statistical significance level present for the UN General Assembly. Therefore a correlation exists between states expressing themselves positively and their AI readiness index score. Different contexts render different sentiments for states which are dependent on their subsequent positioning in a multipolar world. The data also displays strong positive sentiment from the US in congruence with previous hegemonic theory research. As a whole, the choice of sentiment score method is deemed worthy to use for analysis, however further research is needed in order to establish a well rounded method and dictionary that can encompass some of the shortcomings highlighted in this text. Summarising using the hypothesis, there is a correlation between increased AI readiness and increased sentiment. Countries express different sentiments depending on which context they are in. A change from a unipolar to multipolar power dynamic seems to be congruent with the data. Future iterations of political science studies related to the field of AI and international relations should thus keep in mind that a higher vested interest in AI is correlated with a higher sentiment expressed in different UN contexts. Even though x-risk is a potent long-run threat, international regulation of AI seems to be hindered by the vested interest in AI between nations, with multipolar power dynamics being its culmination. Contribution to existing literature from this study is in providing a descriptive statistical overview of states sentiments expressed in the UN, both in the General Assembly setting and in the CCW setting. Future iterations of statistical analysis can be followed up in the related field (discussion about AI), adding analysis to the research about state behaviour in international settings. The format of analysis can also be applied to political science literature outside the scope of AI.

7. References

Agência Senado, *Regulação de inteligência artificial é defendida no Conselho de Comunicação*, 05 June 2023 Accessed:

<https://www12.senado.leg.br/noticias/materias/2023/06/05/regulacao-de-inteligencia-artificial-e-defendida-no-conselho-de-comunicacao>

Ahmed. S, Bajema. N, Bendett. S, Chang. B, Creemers. R, Demchak. C, Denton. S, Ding. J, Hoffman. S, Joseph. R, Kania. E, Kerr. J, Kostopoulos. L, Lewis. J, Libicki. M, Lin. H, Miura. K, Morgus. R, Odell. R. E., Pauwels. E, Saalman. L, Snow. J, Steckman. L, Weber. V, *AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives*, Accessed:

<https://apps.dtic.mil/sti/trecms/pdf/AD1066673.pdf> , chapter 2, US Department of Defence, December, 2018

AJLabs, *Mapping Africa's coups d'état across the years*, Published: 30 August 2023

Accessed:

<https://www.aljazeera.com/news/2023/8/30/mapping-africas-coups-detat-across-the-years>

Armstrong. S, *Racing to the Precipice: a Model of Artificial Intelligence Development*, Future of Humanity Institute, Oxford University ,Technical Report #2013-1, Accessed:

<https://www.fhi.ox.ac.uk/wp-content/uploads/Racing-to-the-precipice-a-model-of-artificial-intelligence-development.pdf>

Butcher. J & Beridze.I, *What is the State of Artificial Intelligence Governance Globally?*, RUSI Journal, Vol. 164, 2019, pages. 88–96, Accessed:

<https://www.tandfonline.com/doi/epdf/10.1080/03071847.2019.1694260?needAccess=true>

Cesareo. S & White. J, *The Global AI Index*, Tortoise Media 2023, Accessed:

<https://www.tortoisemedia.com/intelligence/global-ai/#rankings>

CCW Data: Accessed:

https://drive.google.com/drive/folders/1-_6jX_au8CBpbKpKTRoymnn2QzymT6T0?usp=sharing

Dafoe. A, *AI Governance: A Research Agenda*, University of Oxford, 2018 Accessed:

<https://www.fhi.ox.ac.uk/wp-content/uploads/GovAI-Agenda.pdf>

Ding. J & Dafoe. A, *Engines of power: electricity, AI, and general purpose military transformation*, Cambridge University Press, 2023

Fournier-Tombs. E, *Towards a United Nations Internal Regulation for Artificial Intelligence*, Sage Journals Home, 2021,
Accessed: <https://journals.sagepub.com/doi/full/10.1177/20539517211039493>

European Parliament and council, *General Data Protection Regulation*, 27 April 2016, Accessed: <https://gdpr-info.eu/>

European parliament, *EU AI Act: first regulation on artificial intelligence*, 08-06-2023, Accessed:
<https://www.europarl.europa.eu/news/en/headlines/society/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>

George. S, Dadouch. S, Parker. C & Rubin. S , *Israel formally declares war against Hamas as more than 1,000 killed on both sides*, Washington Post, Published 8 October 2023,
Accessed:
<https://www.washingtonpost.com/world/2023/10/08/israel-hamas-war-gaza/>

Hall. P & Taylor. R, *Political science and the three new institutionalisms*, Political studies 1996.

Hansson. L, Hegelund. E, Ingman. G, *R för samhällsvetare*, 2021, Studentlitteratur AB Lund, pages 201-342.

Horowitz. M., Scharre. P, and Alexander Velez-Green ,*A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence*, ,December 2019,
Accessed: <https://arxiv.org/abs/1912.05291>

Ikenberry J., *Why the Liberal World Order Will Survive*, Cambridge University Press, 2018.

Ikenberry. J, *After victory*, Princeton University Press, 2001, Accessed:
https://www.jstor.org/stable/pdf/j.ctv3znx0v.13.pdf?refreqid=fastly-default%3Ad9224921920b8f88f9b915825c35e00f&ab_segments=&origin=&initiator=&acceptTC=1

Irish. J, *Deal allowing Russian mercenaries into Mali is close - sources*, Reuters, Published 13 of September 2023, Accessed:
<https://www.reuters.com/world/africa/exclusive-deal-allowing-russian-mercenaries-int-o-mali-is-close-sources-2021-09-13/>

Jade Leung, *Who will govern artificial intelligence?*, University of Oxford, Accessed:
<https://ora.ox.ac.uk/objects/uuid:ea3c7cb8-2464-45f1-a47c-c7b568f27665>

Jankin, Slava; Baturo, Alexander; Dasandi, Niheer, 2017, "United Nations General Debate Corpus 1946-2022", Accessed: <https://doi.org/10.7910/DVN/0TJX8Y>, Harvard Dataverse, V11.

Jervis. R, *Cooperation under the security dilemma*, World politics, 1978.

Jockers. M., *Introduction to the Syuzhet Package*, Published: 2023-08-11, Accessed: <https://cran.r-project.org/web/packages/syuzhet/vignettes/syuzhet-vignette.html>

Johnson J., *The end of military-techno Pax Americana? Washington's strategic responses to Chinese AI-enabled military technology*, Pacific Review, P.361, Published online: 21 Oct 2019, Accessed: <https://www.tandfonline.com/doi/epdf/10.1080/09512748.2019.1676299?needAccess=true>

Schaeffer. K., *A year later; a look back at public opinion about the U.S. military exit from Afghanistan*, Published: 17 August, 2022, Accessed: <https://www.pewresearch.org/short-reads/2022/08/17/a-year-later-a-look-back-at-public-opinion-about-the-u-s-military-exit-from-afghanistan/>

Klare. M., *Russia Blocks Move on Killer Robots Ban*, Arms control association, November 2023, Accessed: <https://www.armscontrol.org/act/2019-01/news-briefs/russia-blocks-move-killer-robots-ban>

Kyiv Independent News Desk, *PUTIN DECLARES WAR ON UKRAINE*, February 24, 2022, Accessed: <https://kyivindependent.com/putin-declares-war-on-ukraine/>

Kwon. R., *Hegemonies in the World-System: An Empirical Assessment of Hegemonic Sequences from the 16th to 20th Century*, Sociological Perspectives, Vol. 54, No. 4 (Fall 2011), pp. 593-617 (26 pages), Accessed: <https://www.jstor.org/stable/10.1525/sop.2011.54.4.593?seq=19>

Mearsheimer. J., *Bound to Fail: The Rise and Fall of the Liberal International Order*, International Security, 2019 pages. 7–50, Accessed: <https://direct.mit.edu/isec/article/43/4/7/12221/Bound-to-Fail-The-Rise-and-Fall-of-the-Liberal>

Moses. J & Knutsen. T, *Ways of Knowing*, third edition, Springer Nature, 2019

Mumford A. , *Proxy Warfare and the Future of Conflict*, The RUSI Journal, 2013

Open letter from the Future of life institute, *Pause Giant AI Experiment*, 2023 Accessed: <https://futureoflife.org/open-letter/pause-giant-ai-experiments/>

Oxford Insights, *AI Readiness Index*, 2023 Accessed: <https://oxfordinsights.com/ai-readiness/ai-readiness-index/>

Oxford Insights, *Government AI Readiness Index 2023*, 2023 Accessed: <https://oxfordinsights.com/wp-content/uploads/2023/12/2023-Government-AI-Readiness-Index-1.pdf>

Oxford Insights, *Government AI Readiness Index 2022*, 2022 Accessed:
https://oxfordinsights.com/wp-content/uploads/2023/11/Government_AI_Readiness_2022_FV.pdf

Oxford Insights *Government AI Readiness Index 2020*, 2020 Accessed:
<https://oxfordinsights.com/wp-content/uploads/2023/11/AIReadinessReport.pdf>

Puchala. D, *World Hegemony and the United Nations*, International studies review, 2005, p580 Accessed: https://www.google.com/url?q=Accessed:https://www.jstor.org/stable/3699675?searchText%3D%26searchUri%3D%26ab_segments%3D%26searchKey%3D%26refreqid%3Dfastly-default%253Ac9e109f6b8b8e2e0309b394eab6ed7a0&sa=D&source=docs&ust=1701774963712448&usg=AOvVaw1PxCzamiZ-FDig_egDNo6j

Polcumpally, A, *Artificial intelligence and global power structure: understanding through Luhmann's systems theory*, AI & SOCIETY (2022) 37:1487–1503 Accessed:
<https://link.springer.com/article/10.1007/s00146-021-01219-8>

Sagan. S, *Why do states build nuclear weapons*, International security, MIT Press 1996-1997

Scharre. P, *Army of None*, W.W.Norton & company, 2019

SIPRI, *SIPRI Military Expenditure Database*, 2022 Accessed:
<https://www.sipri.org/databases/milex>

SIPRI, *SIPRI Yearbook 2020*, 2020, P. 506-507

SIRPI, *SIPRI Yearbook 2021*, 2021, P. 463

Stock. J & Watson. M. W, *Introduction to econometrics*, Fourth edition, Pearsons publishing, p.148-151

Soice, E, Rocha. R, Cordova. K, Specter. M, Esvelt. K, *Can large language models democratize access to dual-use biotechnology?*, Media Laboratory, Massachusetts Institute of Technology, Cambridge, United States, 6 June 2023

The Swedsh Parliament, *Risker och möjligheter med artificiell intelligens*, 22 August 2023 ,Accessed:
https://www.riksdagen.se/sv/webb-tv/video/interpellationsdebatt/risker-och-mojligheter-med-artificiell-intelligens_ha10374/

The White House, *Executive order on the safe, secure and trustworthy development and use of artificial intelligence.*, 30 October, 2023 Accessed:
<https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>

Turner, J, *Robot Rules*, Palgrave MacMillan, 2019

UK parliament, *The governance of artificial intelligence: interim report; Ninth Report of Session 2022–23*, Accessed: <https://publications.parliament.uk/pa/cm5803/cmselect/cmsctech/1769/report.html>

UN office for disarmament affairs, *fifth review conference*, 2016 Accessed: <https://meetings.unoda.org/ccw-revcon/convention-certain-conventional-weapons-fifth-review-conference-2016>

UN office for disarmament affairs, *sixth review conference*, 2021 Accessed: <https://meetings.unoda.org/ccw-revcon/convention-certain-conventional-weapons-sixth-review-conference-2021>

UN office for disarmament affairs, *Governmental experts on lethal autonomous weapons*, 2020 Accessed: <https://meetings.unoda.org/ccw/convention-certain-conventional-weapons-group-governmental-experts-lethal-autonomous-weapons>

UN office for disarmament affairs, *Governmental experts on lethal autonomous weapons*, 2023, Accessed: <https://meetings.unoda.org/meeting/67246/statements>

UNESCO, *Recommendation on the Ethics of Artificial Intelligence*, 23 November 2023, Accessed: <https://unesdoc.unesco.org/ark:/48223/pf0000381137>

UN digital library, Accessed: <https://digitallibrary.un.org/record/4021973?ln=en>

UN digital library, *Search term: Artificial intelligence*, Accessed: [https://digitallibrary.un.org/search?ln=en&rm=&sf=&so=d&rg=50&c=ResourceType&c=UN+Bodies&c=&of=hb&fti=0&fct__2=GeneralAssembly&fct__3=2023&fti=0&p=artificial intelligence](https://digitallibrary.un.org/search?ln=en&rm=&sf=&so=d&rg=50&c=ResourceType&c=UN+Bodies&c=&of=hb&fti=0&fct__2=GeneralAssembly&fct__3=2023&fti=0&p=artificial+intelligence)

UN Meetings coverages and press releases, *First Committee Approves New Resolution on Lethal Autonomous Weapons, as Speaker Warns ‘An Algorithm Must Not Be in Full Control of Decisions Involving Killing’*, 1 November 2023 Accessed: <https://press.un.org/en/2023/gadis3731.doc.htm>

UN Office for disarmament, *Lethal Autonomous Weapon Systems (LAWS)*, Published: 2023 Accessed: <https://disarmament.unoda.org/the-convention-on-certain-conventional-weapons/background-on-laws-in-the-ccw/#:~:text=UN%20Special%20Rapporteur%20on%20extrajudicial%2C,Human%20Rights%20Council%20in%202013>

US fifth review statement, 2016 Accessed: <https://geneva.usmission.gov/2016/12/12/u-s-opening-statement-at-the-fifth-review-conference-of-the-convention-on-conventional-weapons-ccw/>

World Bank, *Human Capital Index (HCI)*, 2020 Accessed: <https://data.worldbank.org/indicator/HD.HCI.OVRL>

World Bank, *GDP, PPP (current international \$)*, 2016, 2020, 2021, 2022 Accessed: <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD>

Zaidi. W & Dafoe. A, *International control of powerful technology: Lessons from the Baruch plan for nuclear weapons*, Centre for the governance of AI, Future of humanity institute, 2021

8. Appendix

General Assembly:

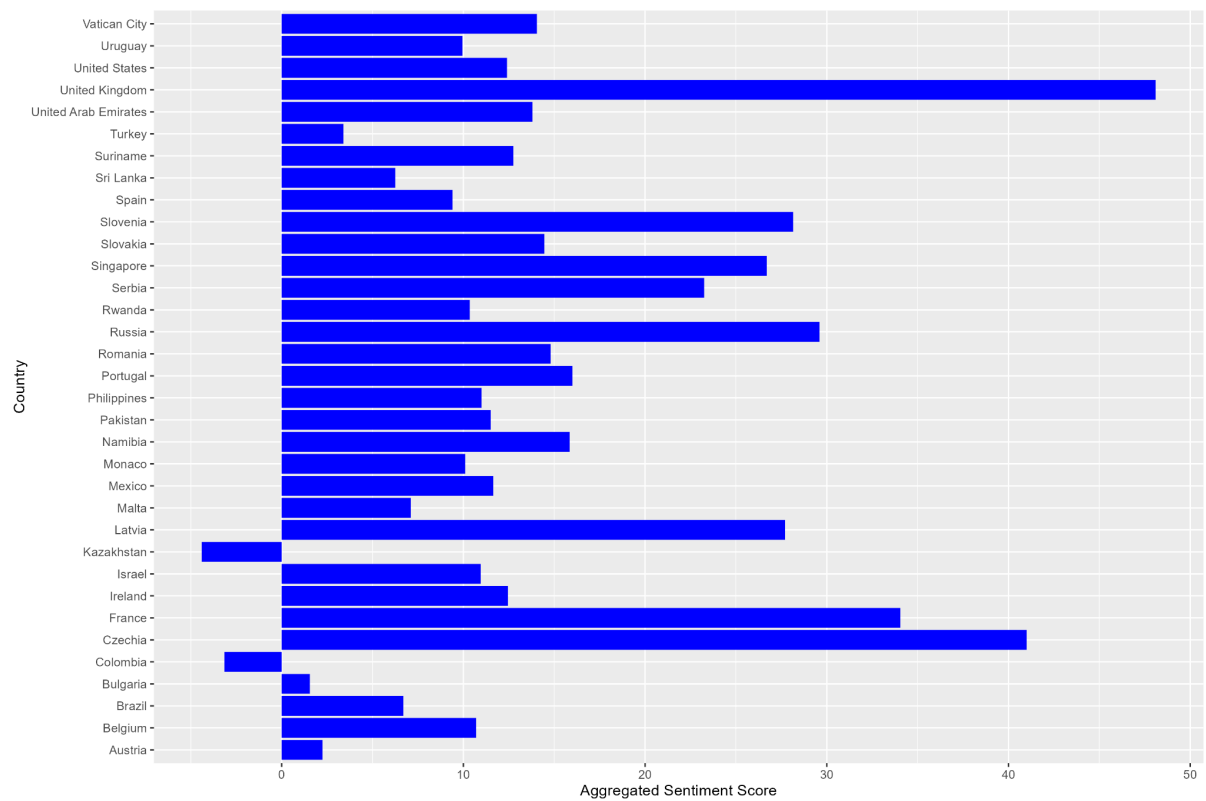


Chart 1. Aggregated sentiment score per country in the UN General Assembly.

UN Digital library

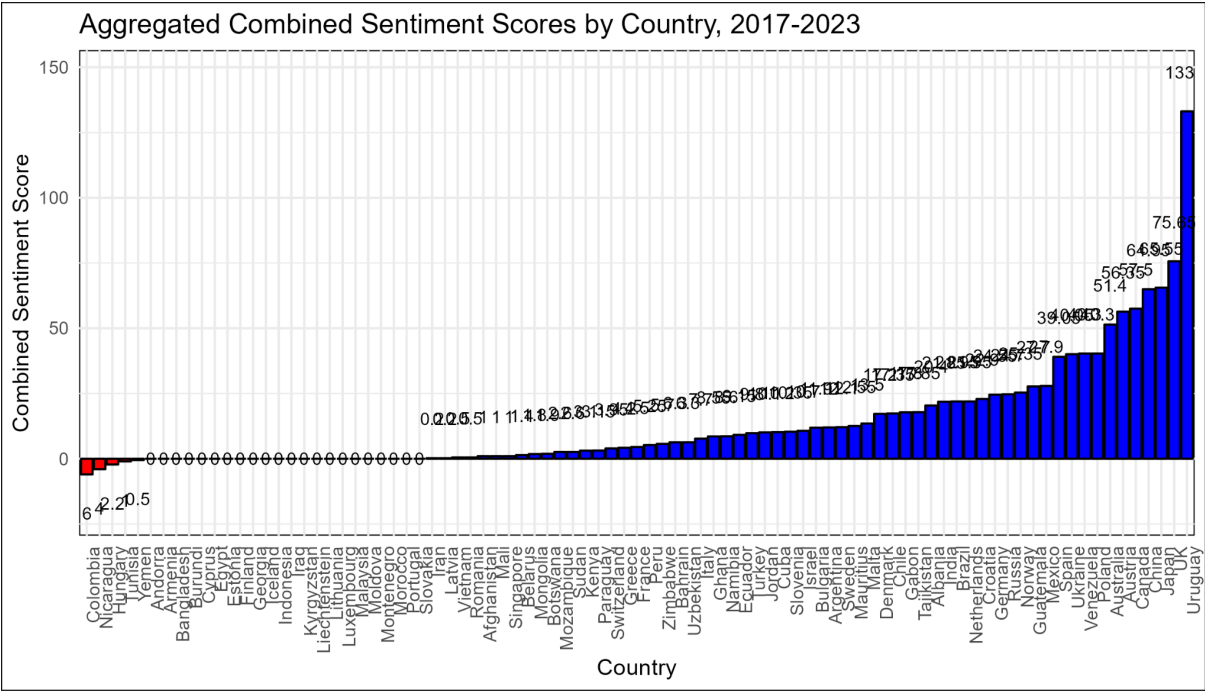
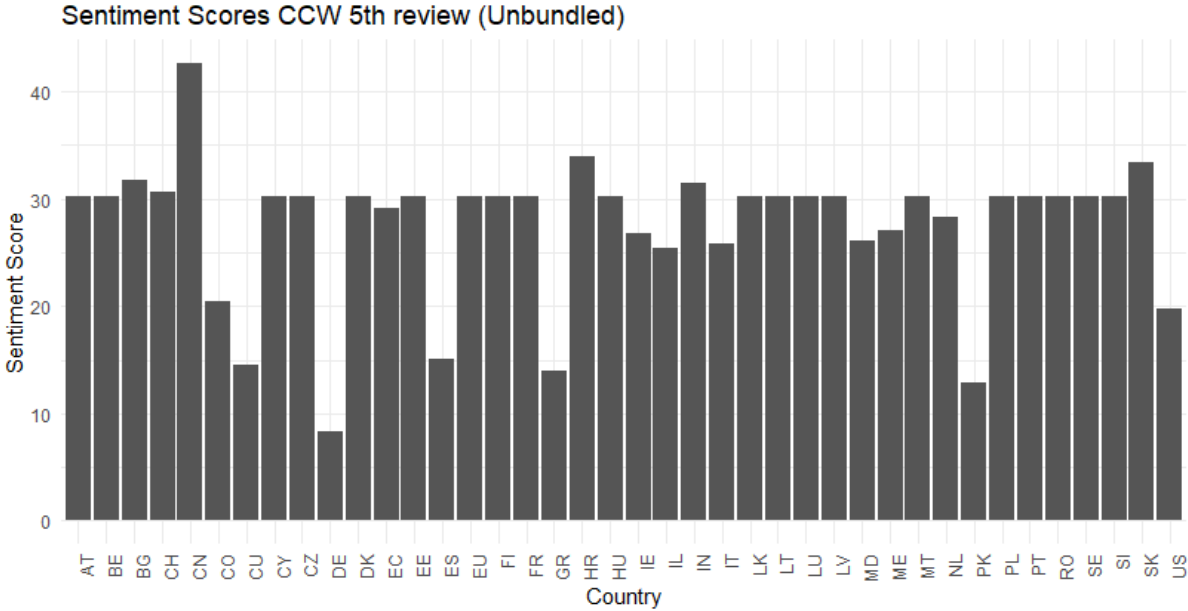


Chart 2. UN digital library sentiment scores

CCW:Fifth review



Coefficient:

=====

Dependent variable:

score

	(1)	(2)

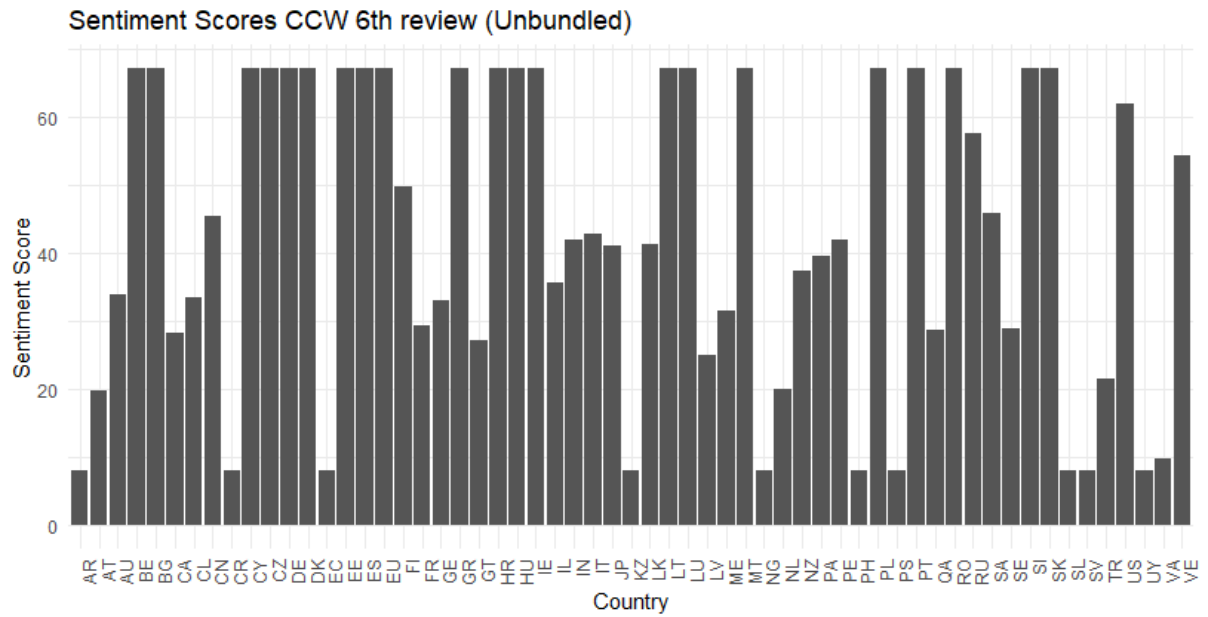
AI_Index	0.071 (0.079)	-0.160 (0.139)
Military		-0.00004** (0.00002)
NY.GDP.MKTP.PP.CD		0.000** (0.000)
Scaled_HCI		0.351* (0.200)
Constant	23.268*** (4.861)	12.256 (8.929)

Observations	39	38
R2	0.021	0.179
Adjusted R2	-0.005	0.080
Residual Std. Error	6.714 (df = 37)	6.173 (df = 33)
F Statistic	0.806 (df = 1; 37)	1.804 (df = 4; 33)
=====		
Note:	*p<0.1; **p<0.05; ***p<0.01	

Variance inflation factor

AI_Index	Military	NY.GDP.MKTP.PP.CD	Scaled_HCI
3.256932	3.865802	4.442113	2.964922

Sixth review



(Figure 5. Sentiment score for CCW 6th review conference in 2021)

Dependent variable:		
	score	
	(1)	(2)
AI_Index	0.760*** (0.181)	0.356 (0.412)
Military		0.00002 (0.00004)
NY.GDP.MKTP.PP.CD		-0.000 (0.000)
Scaled_HCI		0.750 (0.502)
Constant	-4.669 (11.033)	-30.896* (17.063)
Observations	60	59
R2	0.233	0.310

Adjusted R2	0.219	0.258
Residual Std. Error	20.368 (df = 58)	19.957 (df = 54)
F Statistic	17.572*** (df = 1; 58)	6.052*** (df = 4; 54)

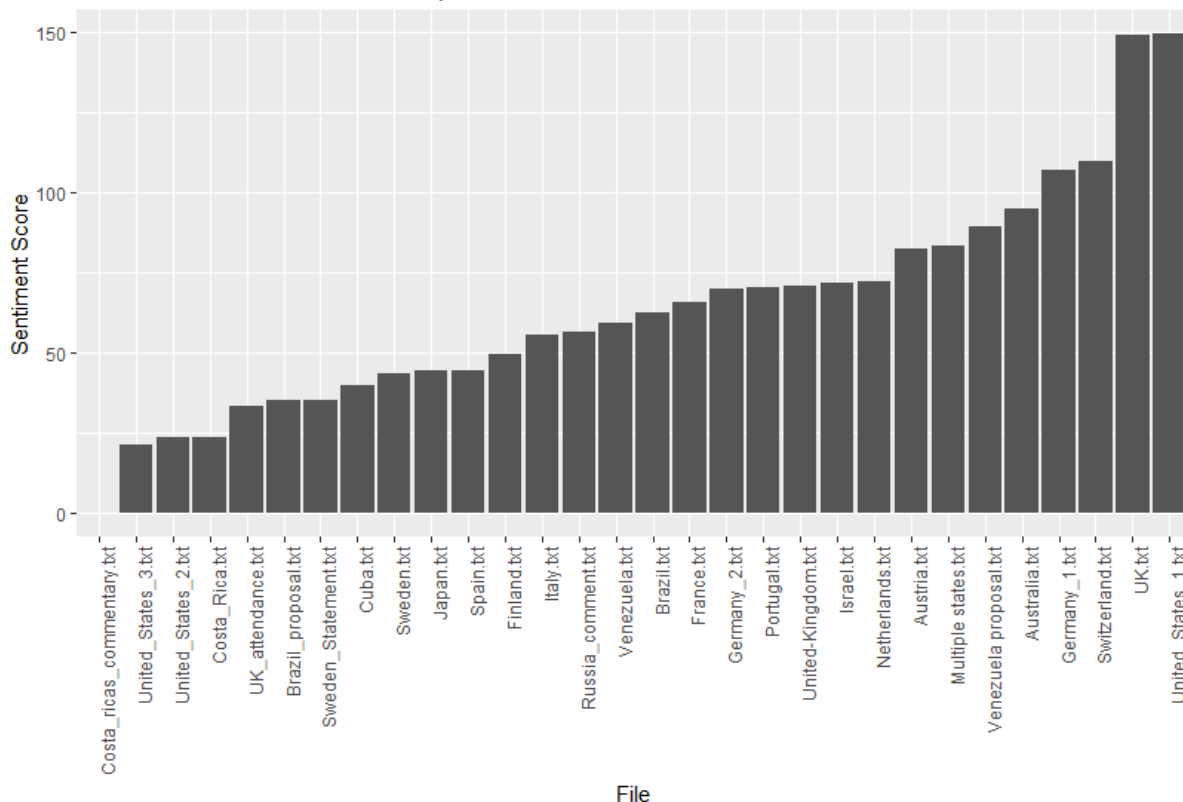
Note: *p<0.1; **p<0.05; ***p<0.01

Variance inflation factor

AI_Index	Military	NY.GDP.MKTP.PP.CD	Scaled_HCI
5.027048	3.449717	3.600509	4.384455

Gov 20

Sentiment Of Governmental expert review in 2020

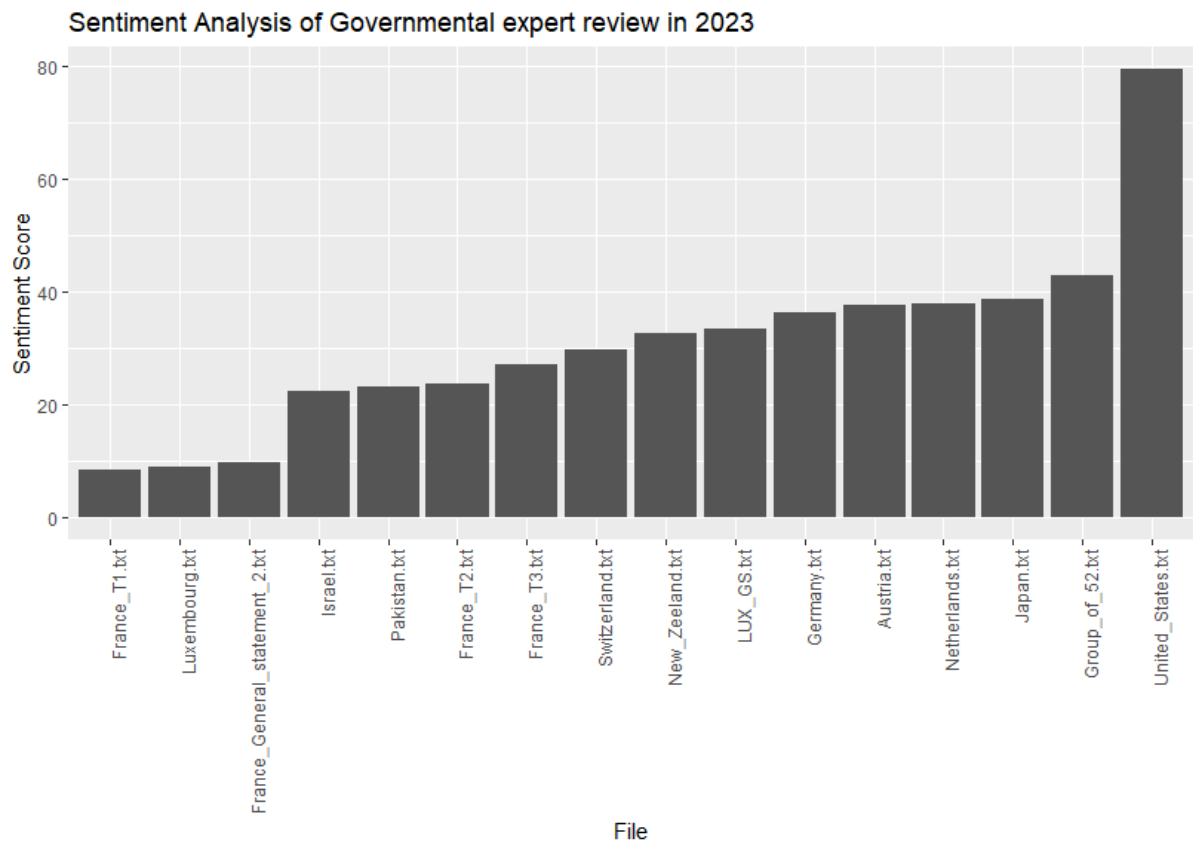


Dependent variable:

	(1)	(2)
score		
AI_Index	0.994 (0.666)	3.843** (1.721)
Military		-0.00004

AI_Index	Military	NY.GDP.MKTP.PP.CD	Scaled_HCI
4.094099	14.439772	14.881673	3.578006

Gov 23



Dependent variable:		
	total_score	
	(1)	(2)
AI_Index	0.624*** (0.175)	0.015 (0.319)
Military		-0.00001 (0.0001)
NY.GDP.MKTP.PP.CD		0.000* (0.000)
Scaled_HCI		0.335 (0.355)
Constant	9.647 (11.020)	19.624 (12.378)
Observations	54	54
R2	0.196	0.503
Adjusted R2	0.181	0.462
Residual Std. Error	14.877 (df = 52)	12.055 (df = 49)

F Statistic	12.715*** (df = 1; 52)	12.393*** (df = 4; 49)
-------------	------------------------	------------------------

=====

Note: *p<0.1; **p<0.05; ***p<0.01

Variance inflation factor

AI_Index	Military	NY.GDP.MKTP.PP.CD	Scaled_HCI
5.058044	15.813151	17.387058	4.164107