



Parahyangan Catholic University
Faculty of Social and Political Sciences
Department of International Relations

Accredited A

SK BAN –PT NO: 451/SK/BAN-PT/Akred/S/XI/2014

**The Outer Space as the Strategic Asset of
the United States of America**

Undergraduate Thesis

By

Raihan Zahirah Mauludy Ridwan

2016330021

Bandung

2019



Parahyangan Catholic University
Faculty of Social and Political Sciences
Department of International Relations

Accredited A

SK BAN –PT NO: 451/SK/BAN-PT/Akred/S/XI/2014

**The Outer Space as the Strategic Asset of
the United States of America**

Undergraduate Thesis

By

Raihan Zahirah Mauludy Ridwan

2016330021

Supervisor

Adrianus Harsawaskita, S.IP., M.A.

Bandung

2019

Faculty of Social and Political Sciences
Department of International Relations



Thesis Approval Indication

Name : Raihan Zahirah Mauludy Ridwan
Student ID : 2016330021
Title : The Outer Space as The Strategic Asset of the United States of America

Has been examined during the Undergraduate Thesis Defense

On Friday, October 4th 2019
And declared **PASSED**

Team of Examiner

Chairman concurrently serving as the member

Idil Syawfi, S.IP., M.Si. :

Secretary (Supervisor)

Adrianus Harsawaskita, S.IP., M.A. :

Member

Dr. I Nyoman Sudira, Drs., M.Si. :

Approve,
Dean of the Faculty of Social and Political Sciences

Dr. Pius Sugeng Prasetyo, M.Si.

STATEMENT LETTER

I, the undersigned below:

Name : Raihan Zahirah Mauludy Ridwan

NPM : 2016330021

Major : International Relations

Title : The Outer Space as the Strategic Asset of the United States of
America

Hereby declare that this thesis is the result of my own scientific writing and is not a work that has been submitted to obtain an academic degree by another parties. The works or opinions of other parties which cited by this thesis proposal have been written in accordance with the applicable rules of scientific writing.

I make this statement responsibly and willing to accept any consequences according to the applicable rules if later someone discovered that this statement is incorrect.

Bandung, October 4th 2019

Raihan Zahirah Mauludy Ridwan

2016330021

Abstract

Name : Raihan Zahirah Mauludy Ridwan

NPM : 2016330021

Title : The Outer Space as the Strategic Asset of the United States of America

Amidst the advancement of technology and complexity of international relations, states seem to find other promising geopolitics space aside from air, land, and sea. Blessing in disguise, states start to expand their control of power into the outer space which could be perceived as the best of both worlds. However, the Article I of the Outer Space Treaty and Moon Agreement emphasizes that the exploration and use of the Outer Space “shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind” which called “common heritage of all mankind” or CHM. As the space transforming into the strategic assets, it means that every technology and facilities owned by states in outer space could be perceived as important assets since it could provide several capabilities and strategic values to pursue their national interests which contrary with the CHM. Then it comes to the question, how does the outer space could be considered as the strategic assets of United States to pursue their national interest. This thesis aims to identify the anomaly of CHM especially the outer space as the strategic assets of countries for their national security and part of their national interests. To answer the research question, this thesis uses the theory of meta-geopolitics, a theory encompasses analysis of space power and a multidimensional perspective of state capacities including hard power and soft power tools that manifested into the seven dimensions *inter alia* social and health issues; domestic politics; economics; environment; science and human potential; military and security issues; as well as international diplomacy. The thesis found that the United States perceived the outer space as their strategic asset since it administers benefits through the seven dimensions that important for their national security.

Keywords: Meta-Geopolitics, Outer Space, Strategic Asset, United States

Abstrak

Nama : Raihan Zahirah Mauludy Ridwan

NPM : 2016330021

Judul : The Outer Space as the Strategic Asset of the United States of America

Di tengah kemajuan teknologi dan kompleksitas hubungan internasional, negara-negara tampaknya menemukan ruang geopolitik lain yang menjanjikan selain dari udara, darat, dan laut. Hal yang baik yang terlihat buruk pada awalnya, negara-negara mulai memperluas kendali kekuasaan mereka ke luar angkasa yang bisa dianggap sebagai situasi ideal. Namun, Pasal I Perjanjian Luar Angkasa dan Kesepakatan Bulan menekankan bahwa eksplorasi dan penggunaan Luar Angkasa "harus dilakukan untuk keuntungan dan kepentingan semua negara dan akan menjadi wilayah seluruh umat manusia" yang disebut " warisan bersama seluruh umat manusia " atau CHM. Seiring dengan berubahnya luar angkasa aset strategis, hal tersebut berarti bahwa setiap teknologi dan fasilitas yang dimiliki oleh negara di luar angkasa dapat dianggap sebagai aset penting karena dapat memberikan beberapa kemampuan dan nilai strategis untuk mengejar kepentingan nasional mereka yang bertentangan dengan prinsip CHM. Kemudian muncul pertanyaan, bagaimana luar angkasa dapat dianggap sebagai aset strategis Amerika Serikat untuk mengejar kepentingan nasional mereka. Skripsi ini bertujuan untuk mengidentifikasi anomali CHM terutama luar angkasa sebagai aset strategis negara untuk keamanan nasional mereka dan bagian dari kepentingan nasional mereka. Untuk menjawab pertanyaan penelitian, skripsi ini menggunakan teori meta-geopolitik, sebuah teori yang mencakup analisis kekuatan luar angkasa dan perspektif multidimensi kapasitas negara termasuk kekuatan keras dan kekuatan lunak yang dimanifestasikan ke dalam tujuh dimensi antara lain masalah sosial dan kesehatan; politik dalam negeri; ekonomi; lingkungan Hidup; sains dan potensi manusia; masalah militer dan keamanan; serta diplomasi internasional. Skripsi ini menemukan bahwa Amerika Serikat menganggap luar angkasa sebagai aset strategis mereka karena dapat memberikan manfaat melalui tujuh dimensi yang penting bagi keamanan nasional mereka.

Kata Kunci: *Amerika Serikat, Aset Strategis, Luar Angkasa, Meta-Geopolitik*

FOREWORD

Let the author expresses her infinite gratitude to Allah SWT because of his grace, the author could complete the thesis titled “The Outer Space as the Strategic Asset of the United States of America” within two weeks without any obstacles. During the journey in becoming the Bachelor of International Relations, the author possesses wide relations with other peoples. Although the author cannot mention it one by one, but the author would like to express her gratitude to several important peoples which give a significant impact to the author’s life *inter alia*:

1. Let the author expresses her infinite gratitude to parents, Ridwan and Rina Marlina Djamaludin who have given permission and support the author morally and financially to consistently work hard and strive for the excellence during the journey as well as motivate the author to participate in the Pemilihan Mahasiswa Berprestasi 2019 and abundant of competitions. They are parents who never say no to something that the author want to achieve. The author strongly believes about the maxim “*Ridha Allah, Ridha Orang tua.*” When parents approve something that the author want to achieves, Allah surely gives a smooth pathway to achieve it.
2. The author would like to delivers her highest gratitude to the supervisor in finishing this thesis, namely Mas Adrianus Harsawaskita, S.IP., MA who has fully supported the author, has response quickly, and has provided constructive suggestions for the perfection of this thesis. He is a lecturer who put high standard of thesis. Fortunately, the author met his expectations

with no major revision. He is a person who gave moral support and lesson to the author.

3. The author would like to convey her gratitude to all lecturers in the International Relations Department of Parahyangan Catholic University who have contributed to the development of the author and provided abundant knowledge.
4. The author would like to convey her gratitude to UNPAR's Board of Rectors started from Bapak Mangadar Situmorang Ph.D. (Rektor), Bapak Tri Basuki Joewono, Ph.D. (WR Bidang Akademik), Ibu Dr. Nia Juliawati (WR Bidang Organisasi dan Sumber Daya), Romo C. Harimanto Suryanugraha, OSC, Drs., SLL. (WR Bidang Kemahasiswaan dan Alumni), and Dr. Paulus Sukpto, Ir., M.B.A (Former WR Bidang Kemahasiswaan dan Alumni) who have fully supported the author to participate in the Pemilihan Mahasiswa Berprestasi National 2019 participate in abundant competitions representing UNPAR.
5. The author would like to thank Mrs. Sylvia Yazid, Ph.D. as a Head of the Department of International Relations who has fully supported, provided input and assisted further for the perfection of the author's work and performance amidst her super busy life. She is a person who has helped the author by changing the way the author see a problem and how the author presenting something.
6. The author would like to thank the Bureau of Student and Alumni (BKA UNPAR) especially Pak Matheus Setiyanto, Mas Gugi and Mas Gunawan

who have facilitated the Pemilihan Mahasiswa Berprestasi 2019 and supported the author in terms of administration for the smoothness in participating abundant competitions.

7. The author would like to convey her special gratitude to the one of the lecturers in the International Relations of Parahyangan Catholic University, Vrameswari Omega Wati, S.IP., M.Sc (Han) who is willing to sacrifice her time and energy to guide the author started from the brainstorming process, mind-mapping until the final selection process during the Pemilihan Mahasiswa Berprestasi 2019. She is not the lecturer rather she is the author's sister since she always gives the author intensive motivation, preaches, and speeches regarding anything started from education, life, friends, movies, politics, love, gossips, etc. She is the most humble and wise person the author has ever met.
8. The author would like to deliver her gratitude to the Board of Directors of renowned state-owned (BUMN) and private companies (BUMS) mostly several Alumni of UNPAR who have supported the author financially to participate in every international competition.
9. Dearest friends started from the beginning of university life, namely Alya Regita, Tiara Noor Osniarni, Kireyna Samantha, Nabila Nurul Ayna, and Trisha Asyifa who has fully supported the author both in the easiest and hardest part of the journey.
10. Dearest delegation of Canada Diplomacy in Practice 2019, namely Bella Dominica, Rangga Cesario, Mahira Kanya, Rayvindira Athena, Sunjoyo

Jatmiko, Nikolas Aditya, Veronica Acintya, Cahyadi Tampake, Christ Moudy, and Nabila Aulia who has fully supported the author and putting their trust on the author to contribute to the development of the delegation.

These persons are the parties who always gave the author constructive suggestions that can improve herself so she could break a leg and bite the bullet. Well begun is half done. Being the Most Outstanding Student of UNPAR 2019, the Most Outstanding Student of West Java-Banten 2019, and the Top 6 of the Outstanding Student of Indonesia is such a significant milestone for the author's life. Through the complicated preparation and selection process, the author learned a lot of things which absolutely change the way how the author see a problem and how to solve it even though the author was exasperated but every cloud has silver lining. Perhaps, there are few peoples who misunderstand regarding the author's "ambitious" personality which reflected by the author's participation in abundant of competitions. Make hay while the sun shines. The reason why the author joined Pemilihan Mahasiswa Berprestasi 2019 and abundant of competitions is the author want to utilize her potentiality and her ability to become a highly-qualified person since the integral aspect of ourselves that we will leave in our community is history, legacy, quality, and reputation. The author also would like to become a competitive person that could be useful in the community and motivate other students to do the extra miles. Subsequently, the author want to utilize her problem-solving skill to solve one of the urgent issues in Indonesia related to the SDGs 11.4 since the clouds

already on the horizon and the author strongly believe that a stitch in time saves nine.

Last remarks, come rain or shine, doing both academics and non-academics life is like making two friends with one gift. Out there, the sea of life is so vicious. There will be storms and waves that hit our life. But if we can control our ship well, we will get through.

Bandung, June 4th 2019

Raihan Zahirah Mauludy Ridwan

TABLE OF CONTENTS

COVER	i
THESIS APPROVAL INDICATION	iii
STATEMENT LETTER	iv
ABSTRACT	v
ABSTRAK	vi
FOREWORD	vii
TABLE OF CONTENTS	xii
LIST OF FIGURES	xv
LIST OF CHARTS	xvi
LIST OF TABLES	xvii
LIST OF ABBREVIATIONS	xviii
CHAPTER I INTRODUCTION	1
1.1 Background of the Problem.....	1
1.2 Problem Identification.....	2
1.2.1 Problem Description.....	2
1.2.2 Scope of the Problem.....	3
1.2.3 Research Questions.....	3
1.3 Research Purposes and Utilities.....	3
1.3.1 Research Purposes.....	3
1.3.2 Research Utilities.....	4

1.4 Literature Reviews.....	4
1.5 Framework.....	7
1.6 Research Method and Data Collection Technique.....	12
1.6.1 Research Method.....	12
1.6.2 Data Collection Technique.....	12
1.7 Thesis Organization.....	13
CHAPTER II THE OUTER SPACE POLICY.....	14
2.1 The Outer Space in General.....	15
2.2 The Space Power Countries.....	23
2.3 The United States of America.....	31
2.3.1 The Rationale of The United States of America.....	32
2.3.2 The Outer Space Policy of The United States of America.....	33
CHAPTER III THE OUTER SPACE AS THE STRATEGIC ASSET OF	
THE UNITED STATES OF AMERICA.....	39
3.1 The Social and Health Issues.....	39
3.2 Domestic Politics.....	45
3.3 Economics.....	48
3.4 Environment.....	60
3.5 Science and Human Potential.....	70
3.6 Military and Security Issues.....	74
3.7 International Diplomacy.....	85

CHAPTER IV CONCLUSION	96
BIBLIOGRAPHY	102

LIST OF FIGURES

Figure 1	Four regions of space.....	16
Figure 2	Space Policy Formulation Process.....	47
Figure 3	NASA's Earth Science Satellites.....	62

LIST OF CHARTS

Chart 1	NASA Annual Budget.....	52
Chart 2	Department of Defense Annual Budget.....	53

LIST OF TABLES

Table 1	United States Commercial Satellites.....	54
Table 2	NASA Environmental Missions.....	67
Table 3	United States' Science Satellites.....	73
Table 4	United States' Military Satellites.....	80
Table 5	United States' Satellites Used During Gulf War.....	82

LIST OF ABBREVIATIONS

ARPANET	: Advanced Research Projects Agency Network
ASAT	: Anti-satellite weapon
ASOR CHI	: American Schools of Oriental Research Cultural Heritage Initiatives
CBMs	: Confidence Building Measures
CHM	: Common Heritage of Mankind
CIA	: Central Intelligence Agency
COE	: Telehealth Centers of Excellence
DoD	: Department of Defense
EB THNP	: Evidence-Based Tele-Behavioral Health Network Program
EOSSPO	: Earth Observing System Project Science Office
ESA	: European Space Agency
EU	: European Union
FSP	: Federal Space Program
G-8	: Group of Eight
G-20	: Group of Twenty
GCOS	: Global Climate Observing System
GDP	: Gross Domestic Product
GOES	: Geostationary Environmental Satellite Program
GPS	: Global Positioning System
HRSA	: Health Resources and Services Administration
IAEA	: International Atomic Energy Agency

IBRD	: International Bank for Reconstruction and Development
IDA	: International Development Association
IDCSP	: Initial Defense Communication Satellite Program
IFC	: International Finance Corporation
IMBLMS	: Integrated Medical and Behavioral Laboratories and Measurement Systems
IMF	: International Monetary Fund
INSAT	: Indian National Satellite
IPCC	: Intergovernmental Panel on Climate Change
IRS	: Indian Remote Sensing
ISS	: International Space Station
ISRO	: Indian Space Research Organization
ITU	: International Telecommunication Union
KSTC	: Kentucky Space and Technology Corporation
LPGP	: Licensure Portability Grant Program
MIGA	: Multilateral Investment Guarantee Agency
MIT	: Massachusetts Institute of technology
NASA	: National Aeronautics and Space Administration
NATO	: North Atlantic Treaty Organization
NOAA	: National Oceanic and Atmospheric Administration
NPT	: Non-Proliferation Treaty
NSBRI	: National Space Biomedical Research Institute
NSC	: National Security Council

NSDD	: National Security Decision Directive
NSIL	: Newspace Indian Limited
NSPD	: National Security Presidential Directive
NTM	: National Technical Means
PAROS	: Prevention of an Arms Race in Outer Space
PNT	: Position Navigation and Timing
PPWT	: Treaty on the Prevention of the Placement of Weapons in Outer Space
PSLV	: Polar Satellite Launch Vehicle
RVHAP	: Flex Rural Veterans Health Access Program
SAT TNGP	: Substance Abuse Treatment Telehealth Network Grant Program
SARSAT	: Search-And-Rescue Satellite
SBSP	: Space-Based Solar Power
SDI	: Strategic Defense Initiative
SGEEI	: Space Grant Education and Enterprise Institute
SSLV	: Small Satellite Launch Vehicle
STARPAHC	: Space Technology Applied Rural Papago Health Care
STRATCOM	: Strategic Command
TCP/IP	: Transmission Control Protocol and Internet Protocol
TDRSS	: Tracking and Data Relay Satellite System
TNGP	: Telehealth Network Grant Program
TRCP	: Telehealth Resource Center Program
UCS	: Union of Concerned Scientists

UN	: United Nations
UNFCCC	: United National Framework Convention on Climate Change
UNIDIR	: United Nations Institute for Disarmament Research
UN COPUOS	: United Nations Committee on the Peaceful Uses of Outer Space
UNEP	: United Nations Environment Program
UN OOSA	: United Nations Office for Outer Space Affairs
UN Space	: United Nations Space
U.S	: United States
USDA	: United States Department of Agriculture
USGS	: United States Geological Survey
UTHSCA	: University of Texas Sciences Center at San Antonio
WMO	: World Meteorological Organization
WTO	: World Trade Organization

CHAPTER I

INTRODUCTION

1.1 Background of the Problem

The article I of the Outer Space Treaty and article IV of the Moon Agreement emphasizes that the exploration and use of the Outer Space “shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind.”¹ It could be inferred that outer space was perceived as the “common heritage of all mankind” or CHM which possess several principles *inter alia* interdiction of acquisition of exercise of sovereignty over the particular area or resources, bestowment of rights to resources in question for humankind as the whole, reservation of the area in question for peaceful purposes, safeguarding the environment, an equitable sharing of advantage which revolves from exploitation of the resources in question, pay attention to the needs and interests of developing countries, and establish governance through common management regime.² States will always prioritize their national interests in the development and execution of space capabilities which contrary with CHM. The underlying reason of the writer choose this topic because space transforming into the strategic asset of countries and most of countries behavior is contrary with the principle of CHM. This topic is

¹ United Nations, *United Nations Treaties and Principles on Outer Space ST/SPACE/11* (New York: United Nations, 2002) 4.

² John E. Noyes, *The Common Heritage of Mankind: Past, Present, and Future*, 40 *DENV. J. INT’L L. & POL’Y* 447 (2012).

important since there is an anomaly in the implementation of CHM in the international realm which could be explained through the theory of meta-geopolitics.

1.2 Problem Identification

1.2.1 Problem Description

As the space perceived as strategic assets which means that every technology and facilities owned by states in outer space could be perceived as important assets since it could provide several capabilities and strategic values to pursue their national interests which contrary with the CHM. In this case, the United States of America's space programs indicated to contrary with the CHM since there are several programs which intended to leverage the national security of United States in terms of economy, military, international diplomacy, environment, science, domestic politics, and social issues. For instance, the establishment of Space Policy Directive-4 which aimed to create the US Space Force, Department of Space Force, and the US Space Command where they recognized the possibility of interference and disruption towards their space system. Such indication could be inferred as the exercise of sovereignty in the outer space. Moreover, the utilization of military satellites also violating the CHM since during Gulf War, Vietnam War, and Cuban Crisis Missile, the United States conduct indirect interference and utilized its satellites which could help them in achieving the mission during the wartime. In addition, within the economy, the United States' enterprises conduct a

space commercialization which becomes a promising profit for United States through Space Policy Directive-2 where there is no equitable sharing of advantage with other countries in this world. Moreover, the United States' rejection of PAROS also could be perceived as the aberration of CHM since they stated that there should be no more common management regime for the outer space instead they prefer to use their domestic law rather than the international norms.

1.2.2 Scope of the Problem

Hence, the scope of problem that will be explored in this thesis is the space as the strategic assets, the capabilities based-approach of state behavior in the outer space, and the activities in the outer space which will be analyzed using seven dimensions of the meta-geopolitics.

1.2.3 Research Questions

The research questions that this thesis would like to answer as follows:

1. How does the outer space could be considered as the strategic assets of United States?

1.3 Research Purposes and Utilities

1.3.1 Research Purposes

Since this thesis use the qualitative research, the purpose of the research is verification as follows: to identify the anomaly of CHM especially the space as the

strategic assets of countries for their national security and as a part of their national interests particularly United States of America.

1.3.2 Research Utilities

1. Being a creative scholar in interpreting, collecting and processing the data,
2. Possess the transferable skills such as time management, choosing the right approach, fortify the different arguments, inserting writer's ideas carefully, doing extra miles, proficient in writing skills,
3. Examining the writer's analytical and cognitive skills.

1.4 Literature Reviews

In the "Space as a Strategic Asset" by Joan Johnson Freese, space seems to be the last resort for countries to pursue the technological prestige.³ First, the space exploration only feasible through the government expenditure and sponsorship.⁴ Second, space-related activities possess security implications.⁵ Third, space exploration has strong futuristic connotations which is the best interest of United States to become leader of positive future.⁶ Space could be considered as the facilitator and primary provider for the critical war and combat capabilities.⁷ Space as the strategic assets could be defined differently by each country.⁸ In the strategic

³ Joan Johnson-Freese, *Space as a Strategic Asset* (New York: Columbia University Press, 2007) 6-105.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

⁸ *Ibid.*

level of combat, space assets could be utilized for arms control verification and early warning system.⁹ Moreover, space also could provide capabilities to connect distances, congregate information, advancing education, aggrandize medical services, contriving jobs, supervising and managing environmental issues which are strategic values for all countries.¹⁰ It could be inferred that there are utilization of outer space for other sector rather than military sector.

However, in the “Weaponisation and Militarisation of Space” by PN Tripathi, there is growing attention of states in creating space defense policy and space as the strategic assets which could be proven through deployment of missile defense system such as constitute space weapon that possess the dual-use principle.¹¹ For instance, the development of space-based assets complete with supporting ground infrastructure for the military purpose including early warning, communications, Position Navigation and Timing (PNT), National Technical Means (NTM), command, and the remote sensing which could be utilized for surveillance, weapon targeting, strategic battlefield surveillance, intelligence and verification.¹² Moreover, according to Blair S. Kuplic in “The Weaponization of Outer Space: Preventing an Extraterrestrial Arms Race,” space can be used during two scenarios such as peace and war. Space is important during peace to generate the deterrent.¹³

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ PN Tripathi, “Weaponisation and Militarisation of Space,” *CLAWS Journal* Winter (2013): 192, retrieved on January 28th 2019, http://www.claws.in/images/journals_doc/464050849_PNTripathi.pdf

¹² *Ibid.*

¹³ Blair S. Kuplic, *The Weaponization of Outer Space: Preventing an Extraterrestrial Arms Race*, 39

During wartime, space can be utilized to improve the combat effectiveness, minimize the casualties and equipment loss.¹⁴ In addition, based on Roger Handberg in his writing “*Dual-Use as Unintended Policy Driver: The American Bubble*,” the dual-use of outer space was irrelevant at first because it was assumed that the execution of national space programs will be controlled by the government especially the military body and national space agency.¹⁵ The emergence of space scientist who hired by the private companies play important role in the improvement of communication and scanning capabilities forced the military to extend their military operations through the radio wave transmissions.¹⁶ Since the telecommunication companies need to deploy their satellite through rocket, the concept of dual-use of outer space more relevant since the weapons of mass destruction could be delivered through missiles or rockets.¹⁷

From the literature reviews, it could be inferred that there is a loophole within the existing writings where they heavily emphasized on the utilization of outer space within the military and security issues or traditional security issues as well as ignoring the possibility of utilization of the outer space in other sectors which contrary with CHM. Therefore, this thesis would like to explore and elaborate more on the utilization of outer space within the non-military issues or non-traditional

N.C. J. Int'l L. & Com. Reg. 1123 (2013).

¹⁴ *Ibid.*

¹⁵ Roger Handberg, *Dual-Use as Unintended Policy Driver: The American Bubble* in *Societal Impact of Space Flight* (USA: National Aeronautics and Space Administration, 2007) 354-356.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

security issues, such as social and health issues; domestic politics; environment; economics; science and human potential; and international diplomacy where some of them contrary with the CHM that could define the space as the strategic assets for the United States of America comprehensively. Moreover, this thesis would like to elaborate more regarding the implication and impact of the utilization of space-based technologies on the seven dimensions.

1.5 Framework

This thesis uses the theory of meta-geopolitics by Nayef R. F. Al-Rodhan. Meta-geopolitics collaborates the different traditional and new dimensions of the geopolitics such as the classical, critical, and additional state capacities.¹⁸ There are seven dimensions of capacities such as social and health issues; domestic politics; economics; environment; science and human potential; military and security issues; and international diplomacy.¹⁹ The meta-geopolitics could expound the sources of potential insecurity and devise early warning.²⁰ The meta-geopolitics aims to refine the mapping of international relations maze precisely as well as help the policymakers to identify the potential threats in advance, place vulnerable areas and more clarity in this uncertainty era.²¹ The meta-geopolitics also emphasizes that space power is not only about the utilization of hard power tools, it also encompasses the utilization of soft power tools such as the ability of states in

¹⁸ Nayef R. F. Al-Rodhan, *Meta-Geopolitics of Outer Space* (UK: Palgrave Macmillan, 2012) 18-19.

¹⁹ *Ibid.*

²⁰ *Ibid.*

²¹ *Ibid.*

expanding their ideas and obtain the outcomes that they want within the international politics realm because other countries wish to follow it, eulogize its values, contend its example, and strive to its level of prosperity and openness.²² Moreover, space applications have significant impact for our daily lives such as space power could help states to boost their capacities in terms of military, technology, economic, educational and national pride.²³ The seven dimensions of meta-geopolitics not only actuate state's capacities in space but also affect state's capacities on earth and predispose the geopolitical structure.²⁴

In the first dimension of meta-geopolitics which is social and health issues, there are three aspects which could determine state capacity such as demographic, social cohesion and health issues.²⁵ Demographic means that the composition of population within a country could influence the geopolitical strength of a country.²⁶ Social cohesion means that the higher level of social cohesion of a country, the more resilient in time of crisis and more stable government structures.²⁷ The health issues give a significant impact towards the geopolitical status of a country.²⁸ In here, the space-based technologies have the potentiality to improve living standard in social and health matters especially national and international healthcare.²⁹ For instance, satellite is an accepted platform to deliver and communicate medical

²² *Ibid.*, 23.

²³ *Ibid.*, 24.

²⁴ *Ibid.*

²⁵ *Ibid.*, 26.

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ *Ibid.*

services especially for disease monitoring and training medical staff from a distance.³⁰

The second dimension is the domestic politics means that the stable domestic politics could boost state's ability to act in the international arena and use their strategic location as well as resources efficiently to enhance their geopolitical strength.³¹ In here, the national prestige is the main goal of space program which is a desire to gain a status in the international realms which followed by the expansion of national space capacities.³² The successful space program could make the country gain a legitimacy within the domestic politics and raise the influence within the relations with the other nations.³³ Moreover, the space-based technologies play a vital role especially for maintaining peace and security.³⁴ For instance, satellites are the key assets which could be used to monitor the border, mass surveillance, preventing crime, stabilization of insecure areas and conflict zones.³⁵ The third dimension is the economics means that the concentration of power, access to the natural resources, international markets, energy reliance, strong domestic markets, technological innovation and strong influence within the international financial institutions such as IMF, World Bank and WTO could affect the geopolitical strength of a country since economically strong country never be disrespected by

³⁰ *Ibid.*

³¹ *Ibid.*,28.

³² *Ibid.*, 29.

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ *Ibid.*

international community and play a crucial role in the world politics.³⁶ Moreover, the space industry also become the integral part of domestic economies and involves highly educated employees.³⁷ This could provide spill-over effect to the agriculture, communications, mining, space science, and exploration especially form its innovation and technology.³⁸ In addition, the more access to the space for countries, the stronger their economies become.³⁹ The cheaper space assets that they possess, the more vital role that they should take a part in the space activities and global market.⁴⁰

The fourth dimension is the environment means that state access to the adequate supplies of natural resources and state capability to become more resilient could affect their geopolitical position amidst the proliferation of global warming and climate change.⁴¹ Space-based technology could solve the environmental problem especially sustaining the energy supply from the celestial bodies or space-based mining.⁴² The fifth dimension is the science and human potential which means that country's scientific know-how and the skills of their population could determine the state's power.⁴³ Thus, investment in research and development and high quality education system is the long-term investment which could affect the proliferation of qualifies human capital that is promising for the international

³⁶ *Ibid.*, 30.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ *Ibid.*, 31.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*, 32.

⁴² *Ibid.*, 33.

⁴³ *Ibid.*

influence and soft power.⁴⁴ Technology and science could be the multiplier force for country's power through the innovation.⁴⁵ Specifically, space industry could provide significant impact on country's scientific and human capital's level.⁴⁶ The successful space program reflect that the country is technically advanced.⁴⁷ If state have advanced technological capabilities, the state also will have the advanced military capabilities through the powerful space technology.⁴⁸ The sixth dimension is the military and security issues which means that state's military power and its capacity to resolve the national as well as international security challenges already became the parameter to determine state's power in the international relations.⁴⁹ The development of space-based technologies and science give a significant impact towards the increasing state's military capabilities through the creation of weapons and delivery systems.⁵⁰ The last dimension is the international diplomacy means that the important tools for state to gain prestige and influence within the global decision making process is through the diplomacy, active membership and activity in the international organizations.⁵¹ By bringing space as the strategic assets and possess space-based technologies, it could influence state's power in the global discussion.⁵² Space-based technologies are

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*, 34.

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*, 35.

⁵⁰ *Ibid.*, 36.

⁵¹ *Ibid.*, 39.

⁵² *Ibid.*

essential in providing information for the negotiation and confidence-building measures (CBMs).⁵³

1.6 Research Method and Data Collection Technique

1.6.1 Research Method

Research method that used by this thesis is the case study which included in the qualitative tradition which focus developing the in-depth analysis from the case.⁵⁴ The case study method refers to the systematic investigation with the aim to describe and explain which in the end it generates the general statement.⁵⁵ The case study categorized as process which intended to possess better understanding and theorize it in the broader context that many people considered this as more compelling and robust.⁵⁶ The case which studied by this thesis is in the form of activities, programs, processes and events.⁵⁷

1.6.2 Data Collection Technique

John W. Creswell argued that this type of research method used to collect the information from various sources.⁵⁸ Thus, this thesis use the literatures, documents, mass media and electronics as the data collection techniques.⁵⁹ This thesis used

⁵³ *Ibid.*

⁵⁴ Umar Suryadi Bakry, *Metode Penelitian Hubungan Internasional* (Yogyakarta: Pustaka Pelajar, 2016) 113.

⁵⁵ Howard Lune & Bruce L. Berg, *Qualitative Research Methods for the Social Sciences* (Malaysia: Pearson, 2017) 170-171.

⁵⁶ *Ibid.*, 175.

⁵⁷ John W. Creswell, *Research Design* (USA: SAGE, 2014) 14.

⁵⁸ *Ibid.*

⁵⁹ Umar Suryadi Bakry, *Metode Penelitian Hubungan Internasional*, 200.

secondary analysis as the data analysis technique so as the writer analyzed the data which already processed by the institution to find an alternative way or new perspective from the collected data where the result will be in form of description and assertion.⁶⁰

1.7 Thesis Organization

This thesis will be divided into four chapters. Chapter I will explore about the background of the problem, problem identification, scope of the problem, research question, purpose of the research, utility of the research, literature reviews and framework. Chapter II will explore about the outer space policy. Chapter III will explore about the theoretical analysis of space as the strategic assets (case study United States) which contrary with CHM using theory of meta-geopolitics. Chapter IV will conclude the analysis.

⁶⁰ *Ibid.*, 113.