DIGITAL DIPLOMACY AND CYBER SOVEREIGNTY IN 10 CARIBBEAN ISLANDS COUNTRIES

(Comparison of Indonesia and 10 Countries in the Caribbean Islands)

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Abstract

The country in the Caribbean Islands is said to be the Small Island Developing States (SIDS). Where a small country in it is actively involved in international diplomacy and technology development. According to a report from the Commonwealth Consultative Group, if a small country in a region does not have military or economic power to use, they will be forced to rely on diplomatic means in conveying their national interests in the context of international relations (Cross & Mike, 2020: 3).

In the international world, every country is faced with a relationship called diplomacy. The international community and the world community have institutionalized identities and shared interests between countries to place the creation and maintenance of shared norms, rules and institutions (Buzan, 2014).

Along with technological developments, the role of diplomacy is initiated digitally, known as cyber-diplomacy. Cyber-diplomacy can be defined as diplomacy in the cyber realm or in other words the use of diplomatic resources and the performance of the diplomatic function to secure national interests related to cyberspace. Such interests are commonly identified in cybersecurity or national cybersecurity strategies which often include references to diplomatic agendas. Therefore, cyber-diplomacy is carried out in all or in part by diplomats who are brought together in bilateral forums (such as the Indonesia-Columbia dialogue) or in multilateral forums (such as at the United Nations) (Owen, 2015).

The starting point of cyber-diplomacy for the first time can be found in the publication of the US International strategy for cyberspace in 2011, which was the first government document worldwide to focus entirely on the international aspects of cyberspace problems. Strategic identity uses a number of priorities (economy, network protection, law enforcement, military, internet governance, international development and internet freedom), while relying on three pillars to achieve diplomacy, defense and development goals (Barrinha & Renard, 2017)

As the analysis in this paper is the analysis of diplomacy between Indonesia in the Caribbean Islands. Not all countries in the Caribbean Islands have diplomatic relations with Indonesia, so the existence of Social Networking Analysis (SNA) through Twitter data grabbing and processed with the Gephi 0.9.2 application will show how much

influence and diplomacy interests of countries in the Caribbean Islands have on Indonesia. and vice versa.

Ancient Diplomacy in International Relations according to Hamilton & Langhorne (in Dwikarna, et al. 2017: 22) is defined as follows,

"The beginning of diplomacy occurred when the first human societies decided it was better to hear a massage then to eat a messenger. If that has been agreed than there have to be rules which assure the safety of the messenger, and if there are rules, there has to be some sanction for them".

From old diplomacy to new diplomacy, which no longer involves formal relations between countries but shifted to diplomacy activities with non-state actors such as the mass media, non-governmental organizations, the public, and multinational companies.

In addition, with the development of technology along with the times, new diplomacy leads to digital diplomacy. It is said to be digital diplomacy because the diplomacy approach carried out by a country involves digital media such as social media (Facebook, twitter, website), social networking sites (SNS) based state sites, the internet, and mobile devices.

So, we can analyzing digital diplomacy through twitter media processed in the Gephi 0.9.2 application, this paper also describes Cyber Sovereignty. Cyber sovereignty is defined as the ability of a country to regulate cyber space in an internal context based on digital platforms. Through the maltego application and also processed in the Gephi 0.9.2 cluster application, which is discussed both in the Caribbean and comparisons with Indonesia, such as cyber infrastructure, cyber application, and cyber core.

The categories analyzed in each country are in cyber diplomacy such as the ministry of foreign affairs, the ministry of interior, cyber authority, the ministry of communication and technology, the ministry of defense, and the ministry of police and military.

Keywords: digital diplomacy; cyber sovereignty; cyber application; cyber core; cyber infrastructure

I. INTRODUCTION

The country in the Caribbean Islands is said to be the Small Island Developing States (SIDS). Where a small country in it is actively involved in international diplomacy and technology development. According to a report from the Commonwealth Consultative Group, if a small country in a region does not have military or economic power to use, they will be forced to rely on diplomatic means in conveying their national interests in the context of international relations (Cross & Mike, 2020: 3).

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In comparison with digital diplomacy with Indonesia, digital diplomacy activities are tracked through tweets by the official account of the Indonesian Embassy in Indonesia in the Caribbean and also the Embassy of the Caribbean Islands in Indonesia. Below is a list of the official Twitter accounts of the Indonesian Embassy and the Caribbean-Indonesian Embassy:

Negara	**Akun KBRI**	**Akun Minisry of Foreign Affairs di Indonesia**
Anguilla (United Kingdom)	@KBRILondon	@UKinIndonesia
Antigua and Barbuda	N/A	@IndonesiainCOL
Aruba (Netherland)	N/A	N/A
Bahamas	@KbriHavana	N/A
Barbados	@KBRILondon	@UKinIndonesia
Bermuda (United Kingdom)	@KBRILondon	@UKinIndonesia
British Virgin Islands (United Kingdom)	@KBRILondon	@UKinIndonesia

Cayman Island (United Kingdom)	@KBRILondon	@UKinIndonesia
Cuba	@KbriHavana	@Embacuba_Indo
Curaçao (Netherland)	N/A	N/A

From the twitter account site above, it can be seen that even though the countries in the Caribbean Islands are located in the American region which is geographically located in the southeast of the Gulf of Mexico and the mainland of North America, the east is bordered by Central America, and the north with South America but consists of countries that are countries. parts of large countries in the European region such as the Netherlands and the United Kingdom so that the official accounts of embassies are centralized in these big countries.

In addition to analyzing digital diplomacy through twitter media processed in the Gephi 0.9.2 application, this paper also describes Cyber Sovereignty. Cyber sovereignty is defined as the ability of a country to regulate cyber space in an internal context based on digital platforms. Through the maltego application and also processed in the Gephi 0.9.2 cluster application, which is discussed both in the Caribbean and comparisons with Indonesia, such as cyber infrastructure, cyber application, and cyber core.

The categories analyzed in each country are in cyber diplomacy such as the ministry of foreign affairs, the ministry of interior, cyber authority, the ministry of communication and technology, the ministry of defense, and the ministry of police and military.

II. DIGITAL DIPLOMACY

2.1 The Strength of Colombia's Indonesian Diplomacy

Columbia is a country located in South America. Indeed, it is not part of the study of the specifications assigned to the author, but this country is the twitter hub of two states in the Caribbean Islands such as Antigua and Barbuda. Both do not have embassies in Indonesia but the country of Columbia has an embassy in Indonesia which has an official twitter account @IndonesainCOL.

There is not much information that can be analyzed, but from the processing of the Gephi application, the author can analyze there are two accounts originating from Indonesia that focus tweets on the @IndonesainCOL twitter account.

Id	Label	Country	Cluster	Level of Influence	Level of interest	Digital Diplomacy	pr_indegree	pr_indegree_normalized	pr_domain	pr_proximity	indegree	outdegree	Degree	weighted indegree	weighted outdegree	Weighted Degree	modularity_class	pageranks	eigencentrality
darmawanpoerba	Indonesia Others			50	37,01432952	43,50716476	0	0	0	0	0	1	1	0	6	6	0	0.212691	0
IndonesiainCOL	Indonesia Government			100	100	100	2	1	1	1	2	0	2	7	0	7	0	0.574618	1
txtdrsangsurya	Indonesia Others			50	37,01432952	43,50716476	0	0	0	0	0	1	1	0	1	1	0	0.212691	0

In the table above, it can be analyzed that the Twitter account belonging to the Columbia government embassy in Indonesia has the highest level of influence, level of interest, and digital diplomacy, which is 100. The two other non-government accounts also come from Indonesia @txtdrsangsurya which is a non-fostered account. Muhamadiyah official. In addition, the account @darmawanpoerba has the same level of influence, level of interest, and digital diplomacy. The owner of the account does not exist, so it can be assumed that both accounts have tweeted from or to @IndonesainCOL.

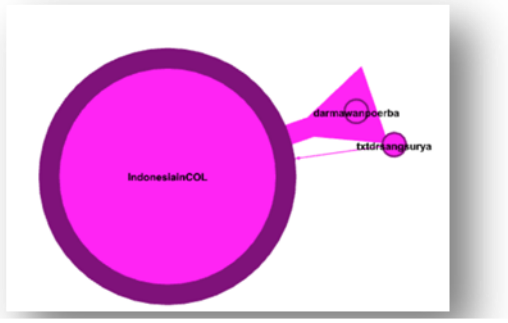


Image Gephi screenshot of @IndonesainCOL account normalization

From the screenshot on the Gephi application it can be explained;

Modularity Class: a form that describes the connectivity and engagement of connected interactions having the same color. There are only three nodes that are connected and communicate with each other.

Page Ranks: To see the size of the nodes. The picture above shows the official account being the dominant main reference is @IndonesainCOL.

2.2 The Strength of Indonesian British Diplomacy

Apart from the official twitter account from Columbia, several countries in the Caribbean Islands also have diplomatic interests attached to other countries outside the American Region. As in the table above; Anguilla, Bahamas, Barbados, Bermuda, British Virgin Islands and Cayman Island are attached to the United Kingdom so that data grabbing is also taken from the official Twitter account of the Indonesian Embassy in London, namely @KBRILondon and London's official Twitter in Indonesia, namely @UKinIndonesia. There are 14 clusters that show the activities of the Caribbean states which rely on the accounts of embassies in the UK.

Likewise, the export in Microsoft Excel screenshot and the normalized results are as shown below:

Id	Label	Countr	Cluster	Level of Ir	Level of	0	pr_inde	pr_inde	pr_dom	pr_pro	indegre	outdeg	Degree	weighte	weighte	Weight	modula	pageran	Eccentr	closnes	harmor	betwee	eigence
TraceyMir	TraceyMir	England	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	1	1	4	0,004083	1	1	1	0	0
KBRILondo	KBRILondo	Indonesia	Government	0,059166	17	17,059166	17	0,106918	0,220126	0,142674	17	0	17	54	0	54	4	0,059166	0	0	0	0	1
EI_KRyan	EI_KRyan	England	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	1	1	0	0,004083	1	1	1	0	0
asiamatte	asiamatters_biz		Others	0,011025	2	2,011025	2	0,012579	0,012579	0,012579	2	0	2	2	0	2	0	0,011025	0	0	0	0	0,01132
garymillar	garymillar	England	Others	0,041549	17	17,041549	11	0,069182	0,075472	0,069666	11	6	17	131	6	137	9	0,041549	1	1	1	72	0,080199
beindone:	beindone:	Indonesia	Others	0,009972	1	1,009972	1	0,006289	0,081761	0,040881	1	0	1	1	0	1	9	0,009972	0	0	0	0	0,118304
idBritish	idBritish	England	Government	0,009972	1	1,009972	1	0,006289	0,081761	0,040881	1	0	1	1	0	1	9	0,009972	0	0	0	0	0,118304
tradegovu	tradegovuk	IDN	Others	0,009972	1	1,009972	1	0,006289	0,081761	0,040881	1	0	1	1	0	1	9	0,009972	0	0	0	0	0,118304
BRSurabay	BRSurabay	Indonesia	Others	0,009972	1	1,009972	1	0,006289	0,081761	0,040881	1	0	1	1	0	1	9	0,009972	0	0	0	0	0,118304
absolutia	absolutia	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	3	3	4	0,004083	1	1	1	0	0
ZDEEN_00	ZDEEN_00	England	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	1	1	4	0,004083	2	00,06.00	0,666667	0	0
BruceEmo	BruceEmo	England	Others	0,019765	7	7,019765	5	0,031447	0,031447	0,031447	5	2	7	13	4	17	4	0,019765	1	1	1	7	0,083531
Awin752	Awin752	England	Others	0,004083	2	2,004083	0	0	0	0	0	2	2	0	6	6	4	0,004083	1	1	1	0	0
yipa_uk	yipa_uk	England	Others	0,004662	1	1,004662	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	4	0,004662	0	0	0	0	0,00566
wdarmosa	wdarmosa	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
Simamora	Simamora	Indonesia	Others	0,031848	17	17,031848	8	0,050314	0,050314	0,050314	8	9	17	384	14	398	1	0,031848	1	1	1	72	0,045281
JStrachanI	JStrachanI	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	2	2	4	0,004083	1	1	1	0	0
pamelihw	pamelihw	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	2	2	4	0,004083	1	1	1	0	0
BernhardH	BernhardH	England	Others	0,004083	3	3,004083	0	0	0	0	0	3	3	0	3	3	2	0,004083	1	1	1	0	0
prajnaindi	prajnaindi	Indonesia	Others	0,00524	3	3,00524	1	0,006289	0,006289	0,006289	1	2	3	1	2	3	2	0,00524	1	1	1	0	0,00566
SofiaLivot	SofiaLivot	Indonesia	Others	0,007467	2	2,007467	2	0,012579	0,012579	0,012579	2	0	2	2	0	2	2	0,007467	0	0	0	0	0,020289
satriya_kr	satriya_kr	Indonesia	Others	0,007467	2	2,007467	2	0,012579	0,012579	0,012579	2	0	2	2	0	2	2	0,007467	0	0	0	0	0,020289
masdanar	masdanar	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
kbribxl	kbribxl	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
IdtpUon	IdtpUon	Indonesia	Others	0,004083	2	2,004083	0	0	0	0	0	2	2	0	2	2	4	0,004083	1	1	1	0	0
Menlu_RI	Menlu_RI	Indonesia	Others	0,006204	2	2,006204	2	0,012579	0,012579	0,012579	2	0	2	2	0	2	4	0,006204	0	0	0	0	0,01132
richholiyar	richholiyar	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
GAPKI_IPC	GAPKI_IPC	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
PorangTar	PorangTar	Indonesia	Others	0,004285	12	12,004285	1	0,006289	0,025157	0,014376	2	10	12	2	28	30	3	0,004285	1	1	1	0	0,673904
DPN_PETA	DPN_PETA	Indonesia	Government	0,008526	15	15,008526	4	0,025157	0,025157	0,025157	5	10	15	38	49	87	3	0,008526	1	1	1	16.05	0,965998
jokowi	jokowi	Indonesia	Others	0,006762	4	4,006762	4	0,025157	0,031447	0,026205	4	0	4	14	0	14	3	0,006762	0	0	0	0	0,960338
JoeBiden	JoeBiden	USA	Others	0,006377	3	3,006377	3	0,018868	0,031447	0,022462	3	0	3	13	0	13	3	0,006377	0	0	0	0	0,954678
RioDamar	RioDamar	Indonesia	Others	0,005075	7	7,005075	3	0,018868	0,025157	0,020126	3	4	7	5	27	32	3	0,005075	2	0,642857	0,722222	00,05.00	0,679564
kementan	kementan	Indonesia	Others	0,011268	5	5,011268	5	0,031447	0,031447	0,031447	5	0	5	38	0	38	3	0,011268	0	0	0	0	0,965998
Syahrul_Y	Syahrul_Y	Indonesia	Others	0,005075	3	3,005075	3	0,018868	0,031447	0,022462	3	0	3	5	0	5	3	0,005075	0	0	0	0	0,679564
Barantan_	Barantan_	Indonesia	Others	0,005075	3	3,005075	3	0,018868	0,031447	0,022462	3	0	3	5	0	5	3	0,005075	0	0	0	0	0,679564
bkp1_sem	bkp1_sem	Indonesia	Others	0,004689	2	2,004689	2	0,012579	0,031447	0,019654	2	0	2	4	0	4	3	0,004689	0	0	0	0	0,673904
harryhana	harryhana	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
MadeMar	MadeMar	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
BartWvan	BartWvan	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	48	48	1	0,004083	2	0,526316	00,55.00	0	0
translator	translator	Indonesia	Others	0,004083	2	2,004083	0	0	0	0	0	2	2	0	8	8	12	0,004083	1	1	1	0	0
gerard_od	gerard_od	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	1	1	0	0,004083	1	1	1	0	0
INDRAARD	INDRAARD	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	12	12	4	0,004083	1	1	1	0	0
santosots	santosots	Indonesia	Others	0,012488	3	3,012488	1	0,006289	0,031447	0,01747	1	2	3	2	9	11	4	0,012488	1	1	1	0	0,07898
ugenks	ugenks	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	4	4	4	0,004083	2	00,06.00	0,666667	0	0
WildlingRc	WildlingRc	Indonesia	Others	0,007952	1	1,007952	1	0,006289	0,056604	0,029967	1	0	1	2	0	2	1	0,007952	0	0	0	0	0,077408
sisca_gd	sisca_gd	Indonesia	Others	0,007952	1	1,007952	1	0,006289	0,056604	0,029967	1	0	1	2	0	2	1	0,007952	0	0	0	0	0,077408
mediaindo	mediaindo	Indonesia	Others	0,007952	1	1,007952	1	0,006289	0,056604	0,029967	1	0	1	2	0	2	1	0,007952	0	0	0	0	0,077408
Greenpea	Greenpea	Indonesia	Others	0,007952	1	1,007952	1	0,006289	0,056604	0,029967	1	0	1	2	0	2	1	0,007952	0	0	0	0	0,077408
BBCIndon	BBCIndon	Indonesia	Media	0,007952	1	1,007952	1	0,006289	0,056604	0,029967	1	0	1	2	0	2	1	0,007952	0	0	0	0	0,077408
EPOA_EU	EPOA_EU	Europe	Government	0,006018	1	1,006018	1	0,006289	0,056604	0,029967	1	0	1	1	0	1	1	0,006018	0	0	0	0	0,077408
togarino	togarino	Indonesia	Others	0,006018	1	1,006018	1	0,006289	0,056604	0,029967	1	0	1	1	0	1	1	0,006018	0	0	0	0	0,077408
maruligult	maruligult	Indonesia	Others	0,006018	1	1,006018	1	0,006289	0,056604	0,029967	1	0	1	1	0	1	1	0,006018	0	0	0	0	0,077408
sipongi_kl	sipongi_kl	Indonesia	Others	0,006018	1	1,006018	1	0,006289	0,056604	0,029967	1	0	1	1	0	1	1	0,006018	0	0	0	0	0,077408
FiraWitri2	FiraWitri2	Indonesia	Others	0,004083	2	2,004083	0	0	0	0	0	2	2	0	2	2	4	0,004083	2	0,052083	0,833333	0	0
usechopst	usechopst	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	4	4	4	0,004083	2	00,06.00	0,666667	0	0
BicaraTeh	BicaraTeh	Indonesia	Others	0,004083	2	2,004083	0	0	0	0	0	2	2	0	18	18	3	0,004083	2	0,555556	00,06.00	0	0
disperinda	disperinda	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	5	5	4	0,004083	1	1	1	0	0
humasjab	humasjab	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	5	5	4	0,004083	1	1	1	0	0
Dhosurya:	Dhosurya:	Indonesia	Others	0,004083	9	9,004083	0	0	0	0	0	9	9	0	9	9	3	0,004083	2	0,764706	0,846154	0	0
KemenBUI	KemenBUI	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	3	0,004469	0	0	0	0	0,00566
erickthohi	erickthohi	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	3	0,004469	0	0	0	0	0,00566
kayaz_1	kayaz_1	Indonesia	Others	0,004083	3	3,004083	0	0	0	0	0	3	3	0	3	3	4	0,004083	1	1	1	0	0
Governme	Governme	Indonesia	Government	0,00524	1	1,00524	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	4	0,00524	0	0	0	0	0,00566
KBRI_Pret	KBRI_Pret	Indonesia	Government	0,00524	1	1,00524	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	4	0,00524	0	0	0	0	0,00566
jameshan	jameshan	Indonesia	Others	0,004083	9	9,004083	0	0	0	0	0	9	9	0	18	18	5	0,004083	1	1	1	0	0
aryacokro	aryacokro	Indonesia	Others	0,004469	3	3,004469	1	0,006289	0,006289	0,006289	1	2	3	2	2	4	5	0,004469	1	1	1	0	0,00566
DubesIngg	DubesIngg	Indonesia	Government	0,006368	2	2,006368	2	0,012579	0,012579	0,012579	2	0	2	3	0	3	5	0,006368	0	0	0	0	0,020289
BebasVisa	BebasVisa	Indonesia	Government	0,006368	2	2,006368	2	0,012579	0,012579	0,012579	2	0	2	3	0	3	5	0,006368	0	0	0	0	0,020289
ASEAN	ASEAN	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	5	0,004469	0	0	0	0	0,00566
Lagnezmo	Lagnezmo	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	5	0,004469	0	0	0	0	0,00566
chuentoi	chuentoi	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	5	0,004469	0	0	0	0	0,00566
MikeyAM!	MikeyAM!	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	5	0,004469	0	0	0	0	0,00566
yovie_myj	yovie_myj	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	5	0,004469	0	0	0	0	0,00566
sandmani	sandmani	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	5	0,004469	0	0	0	0	0,00566
Source	Source	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	1	1	6	0,004083	1	1	1	0	0
Target	Target	Indonesia	Others	0,007554	1	1,007554	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	6	0,007554	0	0	0	0	0,00566
apeloe__	apeloe__	Indonesia	Others	0,004083	8	8,004083	0	0	0	0	0	8	8	0	8	8	7	0,004083	2	0,833333	00,09.00	0	0
kodak_brc	kodak_brc	Indonesia	Others	0,005329	11	11,005329	3	0,018868	0,018868	0,018868	3	8	11	7	24	31	7	0,005329	1	1	1	1	0,025949
Aryprasety	Aryprasety	Indonesia	Others	0,004517	10	10,004517	1	0,006289	0,006289	0,006289	1	9	10	1	27	28	7	0,004517	1	1	1	1	0,00566
Pak_JK	Pak_JK	Indonesia	Others	0,005896	4	4,005896	4	0,025157	0,025157	0,025157	4	0	4	10	0	10	7	0,005896	0	0	0	0	0,06551
SBYudhoy	SBYudhoy	Indonesia	Others	0,005896	4	4,005896	4	0,025157	0,025157	0,025157	4	0	4	10	0	10	7	0,005896	0	0	0	0	0,06551
titiksoeha	titiksoeha	Indonesia	Others	0,005896	4	4,005896	4	0,025157	0,025157	0,025157	4	0	4	10	0	10	7	0,005896	0	0	0	0	0,06551
erwinaksa	erwinaksa	Indonesia	Others	0,005896	4	4,005896	4	0,025157	0,025157	0,025157	4	0	4	10	0	10	7	0,005896	0	0	0	0	0,06551
BosowaCc	BosowaCc	Indonesia	Others	0,005896	4	4,005896	4	0,025157	0,025157	0,025157	4	0	4	10	0	10	7	0,005896	0	0	0	0	0,06551
AgusYudh	AgusYudh	Indonesia	Others	0,005896	4	4,005896	4	0,025157	0,025157	0,025157	4	0	4	10	0	10	7	0,005896	0	0	0	0	0,06551
andotulon	andotulon	Indonesia	Others	0,004083	9	9,004083	0	0	0	0	0	9	9	0	27	27	7	0,004083	1	1	1	0	0
Edhie_Bas	Edhie_Bas	Indonesia	Others	0,005462	3	3,005462	3	0,018868	0,025157	0,020126	3	0	3	9	0	9	7	0,005462	0	0	0	0	0,05985
usembass	usembass	Indonesia	Others	0,005462	3	3,005462	3	0,018868	0,025157	0,020126	3	0	3	9	0	9	7	0,005462	0	0	0	0	0,05985
OpieRdwu	OpieRdwu	Indonesia	Others	0,004083	8	8,004083	0	0	0	0	0	8	8	0	8	8	8	0,004083	1	1	1	0	0
DPR_RI	DPR_RI	Indonesia	Government	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
DPDRI	DPDRI	Indonesia	Government	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
fahiraidris	fahiraidris	Indonesia	Others	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
Gerindra	Gerindra	Indonesia	Others	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
Fahrihamz	Fahrihamz	Indonesia	Others	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
jakpost	jakpost	Indonesia	Media	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
Metro_TV	Metro_TV	Indonesia	Media	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
hariankon	hariankon	Indonesia	Media	0,004517	1	1,004517	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	8	0,004517	0	0	0	0	0,00566
pelindo3	pelindo3	Indonesia	Others	0,009972	1	1,009972	1	0,006289	0,081761	0,040881	1	0	1	1	0	1	9	0,009972	0	0	0	0	0,118304
HaidarAliL	HaidarAliL	Indonesia	Others	0,004083	9	9,004083	0	0	0	0	0	9	9	0	9	9	13	0,004083	1	1	1	0	0
FCDODigit	FCDODigit	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
DarrenWe	DarrenWe	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
FCDOGovU	FCDOGovU	Indonesia	Others	0,005337	2	2,005337	2	0,012579	0,012579	0,012579	2	0	2	2	0	2	13	0,005337	0	0	0	0	0,01132
DCMS	DCMS	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
UKinKenya	UKinKenya	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
ukinbrazil	ukinbrazil	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
UKinIndor	UKinIndor	Indonesia	Government	0,05727	19	19,05727	19	0,119497	0,119497	0,119497	19	0	19	115	0	115	12	0,05727	0	0	0	0	0,128968
UKinNiger	UKinNiger	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
ukinsouth	ukinsouth	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004469	0	0	0	0	0,00566
j44ck_D	j44ck_D	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
LiiaMonda	LiiaMonda	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
Frans9352	Frans9352	Indonesia	Others	0,004083	5	5,004083	0	0	0	0	0	5	5	0	5	5	12	0,004083	2	0,647059	0,727273	0	0
mayor_an	mayor_an	Indonesia	Others	0,004778	1	1,004778	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	12	0,004778	0	0	0	0	0,00566
BanggaSur	BanggaSur	Indonesia	Others	0,006513	3	3,006513	2	0,012579	0,012579	0,012579	2	1	3	33	13	46	12	0,006513	2	0,538462	0,571429	7	0,01132
satpolppsI	satpolppsI	Indonesia	Others	0,004778	1	1,004778	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	12	0,004778	0	0	0	0	0,00566
virgorome	virgorome	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
cepatkali	cepatkali	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
sehatsura	sehatsura	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
harisas_	harisas_	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
OmegaAlv	OmegaAlv	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
bonekcasu	bonekcasu	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
zakijuve18	zakijuve18	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	13	13	9	0,004083	2	0,538462	0,571429	0	0
NewtonFu	NewtonFu	Indonesia	Others	0,004083	4	4,004083	0	0	0	0	1	3	4	2	11	13	12	0,004083	1	1	1	0	0,027085
lipiindone	lipiindone	Indonesia	Others	0,004855	1	1,004855	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	12	0,004855	0	0	0	0	0,027085
NNdrae	NNdrae	Indonesia	Others	0,004569	9	9,004569	1	0,006289	0,006289	0,006289	1	8	9	2	32	34	10	0,004569	1	1	1	0	0,027085
akticiss	akticiss	Indonesia	Others	0,004569	9	9,004569	1	0,006289	0,006289	0,006289	1	8	9	4	16	20	10	0,004569	1	1	1	0	0,027085
Toperendi	Toperendi	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
kebijakan:	kebijakan:	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
DonAdam	DonAdam	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
msaid_did	msaid_did	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
Syawaludi	Syawaludi	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
aniesbasw	aniesbasw	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
DKIJakarta	DKIJakarta	Indonesia	Others	0,005054	2	2,005054	2	0,012579	0,012579	0,012579	2	0	2	6	0	6	10	0,005054	0	0	0	0	0,05417
CanEmbIn	CanEmbIn	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	3	3	12	0,004083	1	1	1	0	0
shetagarfi	shetagarfi	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	7	7	12	0,004083	1	1	1	0	0
rforrico	rforrico	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	7	7	12	0,004083	1	1	1	0	0
krishnayar	krishnayar	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	7	7	12	0,004083	1	1	1	0	0
taceporus	taceporus	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	7	7	12	0,004083	1	1	1	0	0
dyahwie	dyahwie	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	7	7	12	0,004083	1	1	1	0	0
gabrieladi	gabrieladi	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	4	4	12	0,004083	1	1	1	0	0
JakartaCa:	JakartaCa:	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	1	1	12	0,004083	1	1	1	0	0
denjimat	denjimat	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	4	4	12	0,004083	1	1	1	0	0
axlxdxi	axlxdxi	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	4	4	12	0,004083	1	1	1	0	0
loveRoxyN	loveRoxyN	Indonesia	Others	0,004083	9	9,004083	0	0	0	0	0	9	9	0	18	18	11	0,004083	1	1	1	0	0
GregHand	GregHand	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
CCHQPres	CCHQPres	Indonesia	Media	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
UKASEAN	UKASEAN	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
ASEAN_BA	ASEAN_BA	Indonesia	Government	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
natalieblа	natalieblа	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
UKinVietn	UKinVietn	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
trussliz	trussliz	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
GerryGrim	GerryGrim	Indonesia	Others	0,004469	1	1,004469	1	0,006289	0,006289	0,006289	1	0	1	2	0	2	11	0,004469	0	0	0	0	0,00566
NERCscien	NERCscien	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	5	5	12	0,004083	1	1	1	0	0
MahesaRc	MahesaRc	Indonesia	Others	0,004083	2	2,004083	0	0	0	0	0	2	2	0	64	64	12	0,004083	3	0,409091	00,05.00	0	0
TangguhC	TangguhC	Indonesia	Others	0,004083	4	4,004083	0	0	0	0	0	4	4	0	4	4	13	0,004083	1	1	1	0	0
nadams	nadams	Indonesia	Others	0,004951	1	1,004951	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004951	0	0	0	0	0,00566
UKParliam	UKParliam	London	Government	0,004951	1	1,004951	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004951	0	0	0	0	0,00566
Kemlu_RI	Kemlu_RI	Indonesia	Government	0,004951	1	1,004951	1	0,006289	0,006289	0,006289	1	0	1	1	0	1	13	0,004951	0	0	0	0	0,00566
Na_Aleeya	Na_Aleeya	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	6	6	12	0,004083	1	1	1	0	0
rully2020F	rully2020F	Indonesia	Others	0,004083	1	1,004083	0	0	0	0	0	1	1	0	5	5	12	0,004083	1	1	1	0	0

From the results of normalized twitter above, the biggest level of interest comes from the @UKIndonesia account of 19. This means that the interests of a country, especially the UK, are greater than the twitter accounts of other participants.

Excel Export Screenshot and Normalized Results

Then in the results of the processing of gephi on the official twitter accounts of @KBRILondon and @UKinIndonesia, there are 14 clusters shown with different colors. The largest nodes are still dominated by government accounts, namely @KBRILondon and @UKinIndonesia. Non-governmental accounts owned by individuals are found on nodes belonging to @garymillar and @simamoradupito. Garymillar is the name of the British official who leads the mayor of Loverpool. He actively uses Twitter both in his state and diplomatic activities. In addition there is also the name Dupito Simamora. He is Deputy Executive Director of the Council of Palm Oil Producing Countries (CPOPC). Her tweets have often been on retwett by British media and also from the Indonesian embassy.

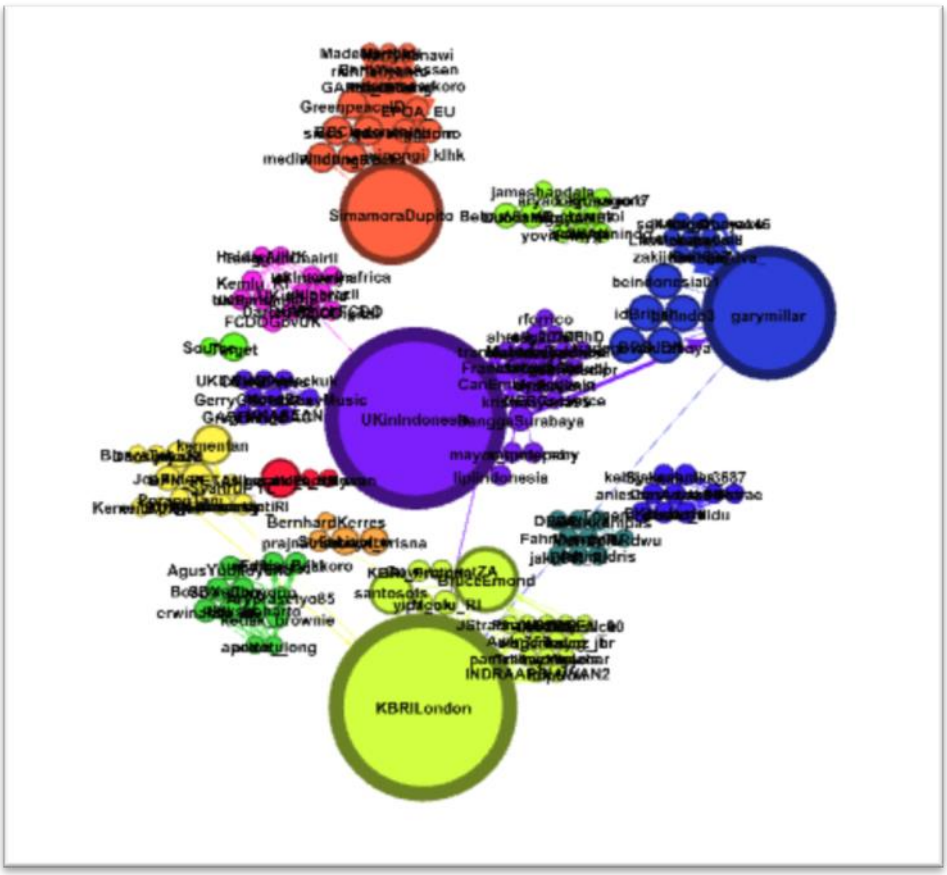


Image Processing of Twitter Account Grabbing via the Gephi 0.9.2 application

Bahamas and Cuba countries with official twitter accounts @KbriHavana and @Embacuba_Indo do not get data or results from grabbing twitter because the official site has no more activities related to diplomacy (non-existent).

III. CYBER SOVEREIGNTY

Indonesia's Cyber Sovereignty with the Caribbean Islands

3.1 Cyber Infrastructure

Cyber infrastructure is a possession of computing systems, data storage systems, sophisticated instruments and data repositories as well as visualization environments by connecting software and networks to increase productivity and security in a country (Stewart et al., 2010).

It will be further explored one by one by starting from the search for the official website of the state ministry as shown in the table below:

Institution	Indonesia	Anguilla	Antigua and Barbuda	Aruba	Bahamas	Barbados	Bermuda	British Virgin Islands	Cayman Islands	Cuba	Curaçao
Cyber Authority	bssn.go.id	gov.ai	abipco.gov.ag	government.aw	N/A	gisbarbados.gov.bb	gov.bm	N/A	cima.ky	mincom.gob.cu	cybersecuritycuracao.com
Ministry of Domestic Affairs	kemendagri.go.id	gov.ai	ab.gov.ag	government.aw	bahamas.gov.bs	gov.bb	gov.bm	bvi.gov.vg	otp.gov.ky	minint.gob.cu	www.kgmc.nl
Ministry of Defence	kemhan.go.id	gov.uk	abdf.gov.ag	government.aw	bahamas.gov.bs	gisbarbados.gov.bb	gov.bm	N/A	royalnavy.mod.uk	parlamentocubano.gob.cu	governmente.nl
Ministry of Foreign Affairs	kemlu.go.id	gov.ai	ab.gov.ag	government.aw	mofa.gov.bs	gov.bb	gov.bm	bvi.gov.vg	gov.ky	minrex.gob.cu	vm.ee
Ministry of Communication	kominfo.go.id	gov.ai	N/A	government.aw	bahamas.gov.bs	gisbarbados.gov.bb	gov.bm	bvi.gov.vg	ofreg.ky	mincom.gob.cu	kgmc.nl
Ministry of Police	polri.go.id	N/A	ab.gov.ag	government.aw	royalbahamaspolice.org	gisbarbados.gov.bb	bermudapolice.bm	bvi.gov.vg	911.gov.ky	pnr.minint.gob.cu	N/A
Ministry of Military	tni.mil.id	N/A	ab.gov.ag	government.aw	N/A	gov.bb	bermudaregiment.bm	army.mod.uk	royalnavy.mod.uk	gacetaoficial.gob.cu	N/A

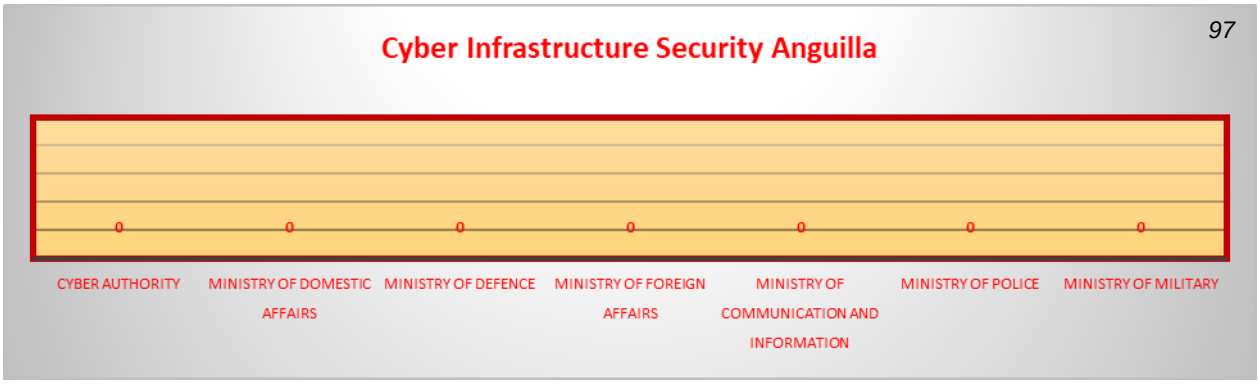
Table Name of Ministry Websites in Indonesia and the Caribbean Islands

3. 1. 1 Anguilla Cyber Infrastructure Security

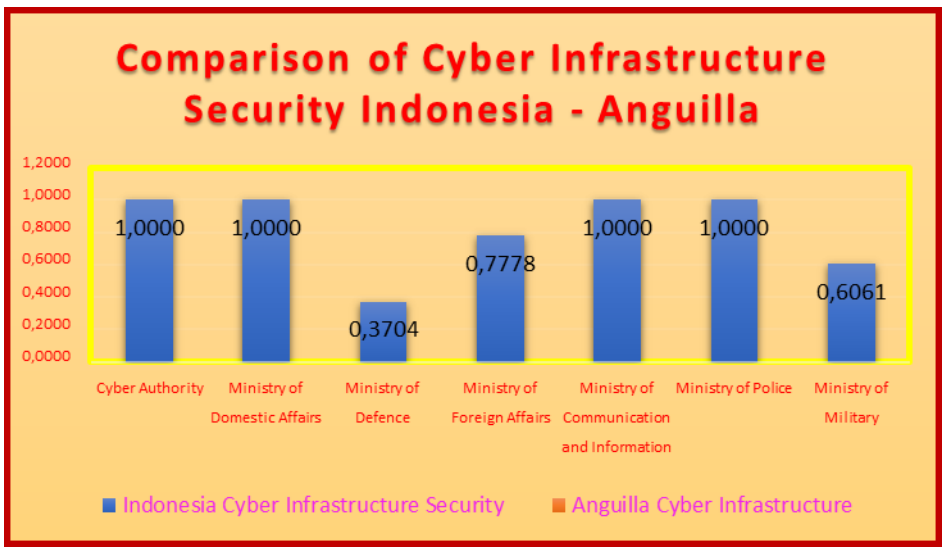
Anguilla is a small country located in the Caribbean Islands with the capital of the Valley. Geographical conditions that are located in the waters make this country have a concern in the tourism and fisheries industry (Sindo, 2018).

Anguilla does not have an official website for a police or military ministry. Only with the gov.ai website are the ministries dealing with cyber, the ministry of home and foreign affairs, and the ministry of communication. For the ministry of defense, Anguilla is incorporated in the official British government website with the name gov.uk.

The means that support the state in carrying out its cyber diplomacy are not visible from the relevant ministerial website so that it can be visualized with a table as below.



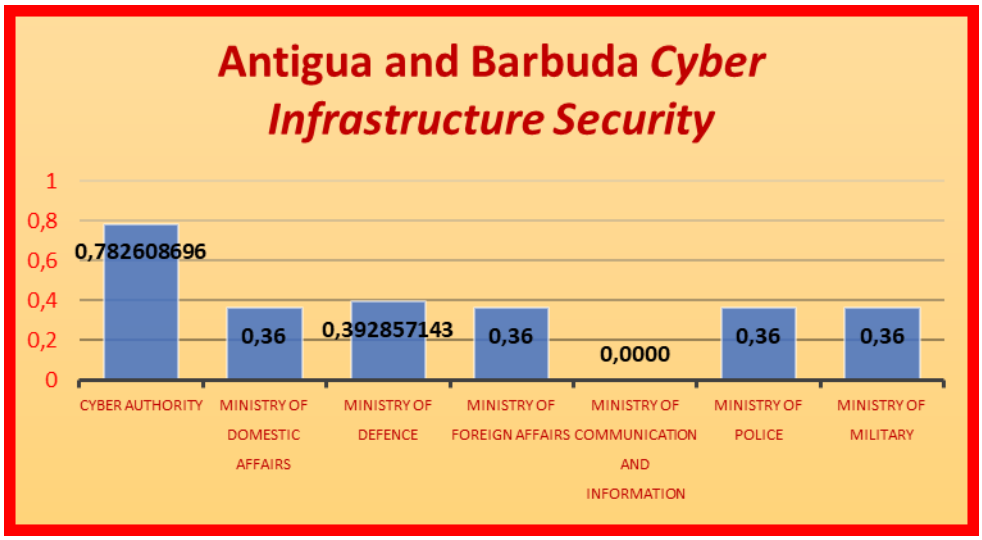
It is very different from the value obtained with the Cyber Infrastructure in Indonesia. The maximum value (1) is found in the cyber ministry, the interior ministry, the information and communication ministry and the police with the state counterpart Anguilla which has no value at all (0).



3. 1. 2 Antigua and Barbuda Cyber Infrastructure Security

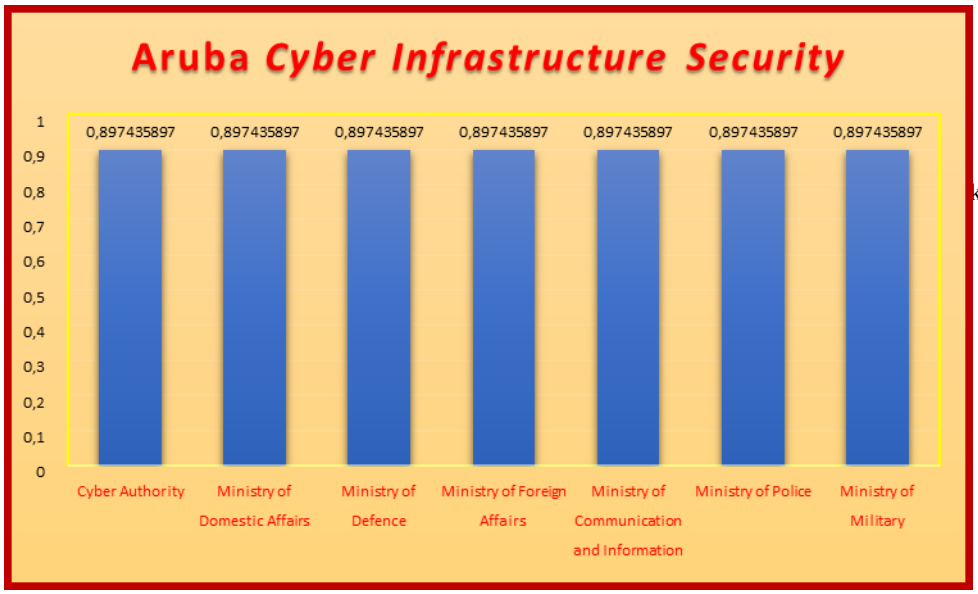
Antigua and Barbuda is a country with a former British colony with a representative office that is integrated into the state of Columbia. This island nation is located in the east of the Caribbean Sea which was inhabited by Amerindian tribes when Christopher Columbus arrived in 1493 so that it was given the name "Santa Maria de la Antigua" or what is now called Antigua and Barbuda. , Antigua and Barbuda still carries out a tradition that is almost the same as that of the United Kingdom (nationsonline.org, 2021). From the results of data processing through the Maltego application, the highest cyber infrastructure value is obtained in the cyber authority ministry with a value of 0.782 close to the perfect figure.

However, the lowest cyber infrastructure is obtained. almost on several Antigua and Barbuda's ministerial websites such as the ministry of home and foreign affairs, police and military ministries as described in the table below:

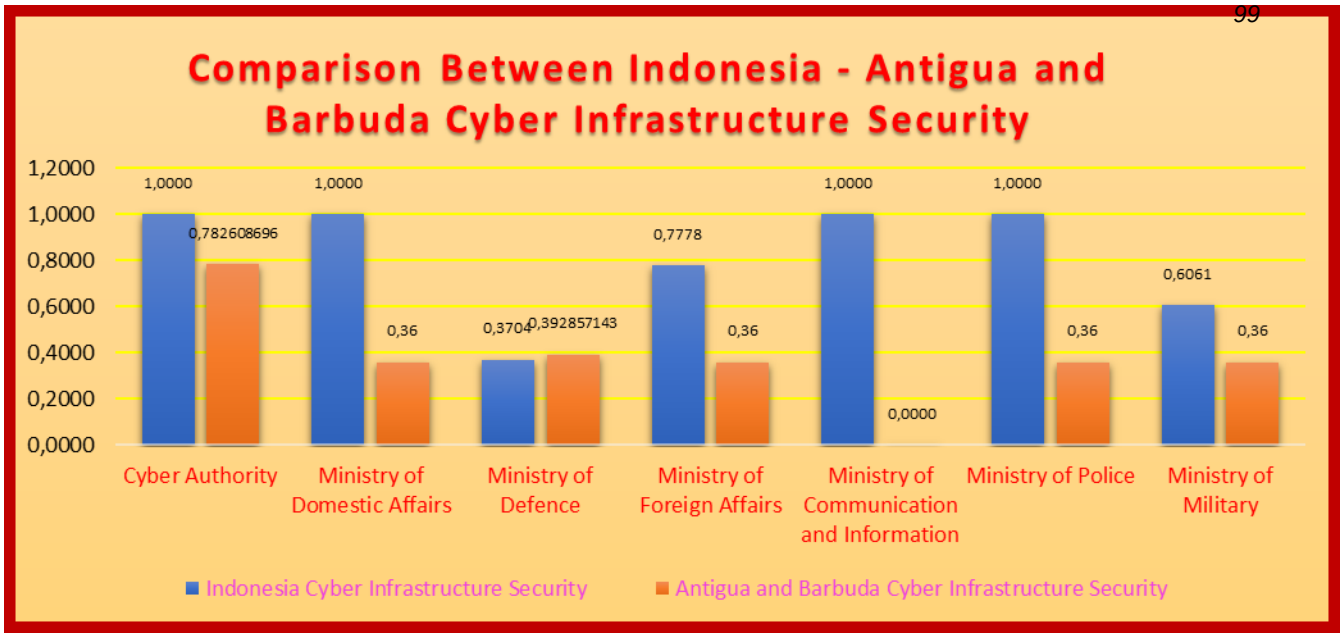


Antigua and barbuda also do not find cyber infrastructure in the ministry of communication and information. There is a big difference between cybersecurity on the official website of the Antigua and Barbuda government from the official website of the government in Indonesia. As shown in the table below:

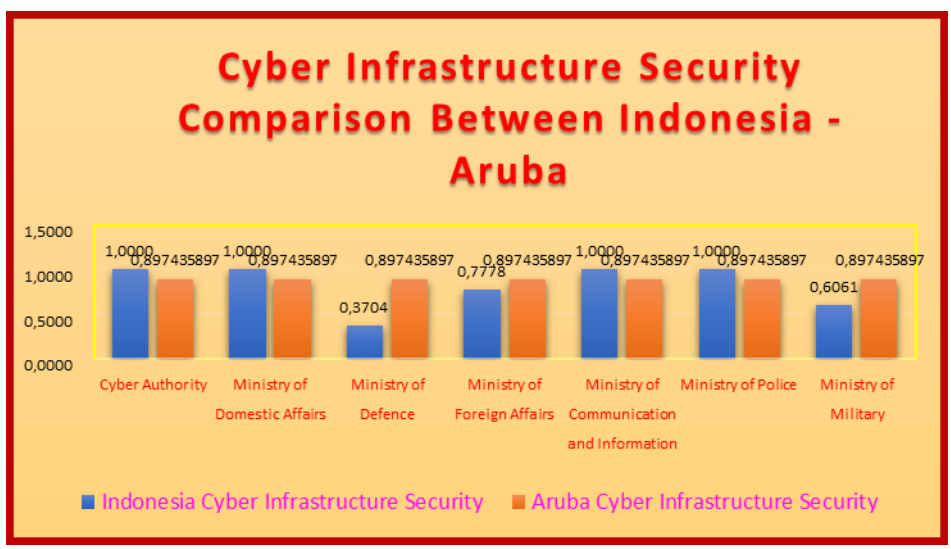
3. 1. 3. Aruba Cyber Infrastucture Security



ke any island nation, th

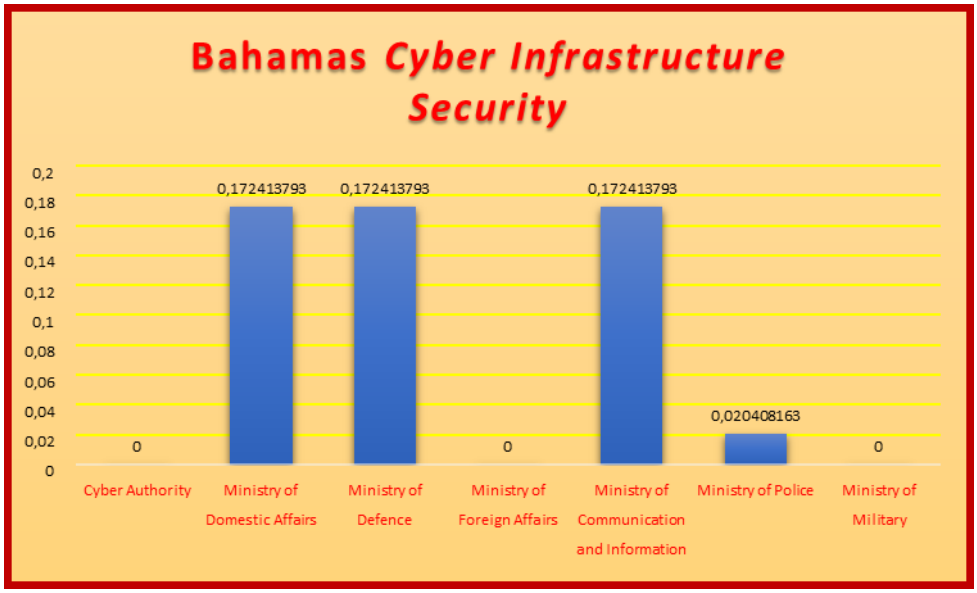


The cyber infrastructure owned by Aruba is quite good, it can be seen that each of the official government ministry websites has value. However, the infrastructure in the country of Aruba is still less superior when compared to the country of Indonesia which has a perfect score (1) in the ministry of home and foreign affairs, the ministry of police and the military. The lowest institution in terms of infrastructure is precisely the ministry of defense itself with a value of 0.3704. The second lowest after the Ministry of Defense is the military ministry with a score of 0.6061. As shown in the table below:

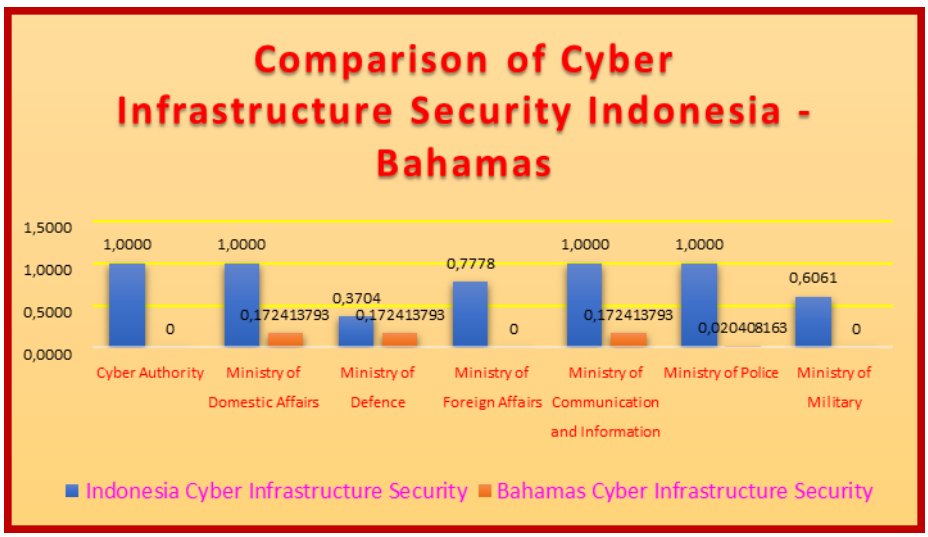


3. 1. 4. Bahamas Cyber Infrastructure Security

The Bahamas is an island nation on the northwestern edge of the West Indies which was originally part of a British colony. The Bahamas became an independent state within the Commonwealth in 1973 (Britanicca 2021). After processing the data by analyzing the website of the ministry of government institutions belonging to the Bahamas, the Bahamian infrastructure is still relatively weak. It is marked by the absence of an institution that deals with cyber, namely cyber authority, and the absence of value in the ministry of foreign affairs and the military.



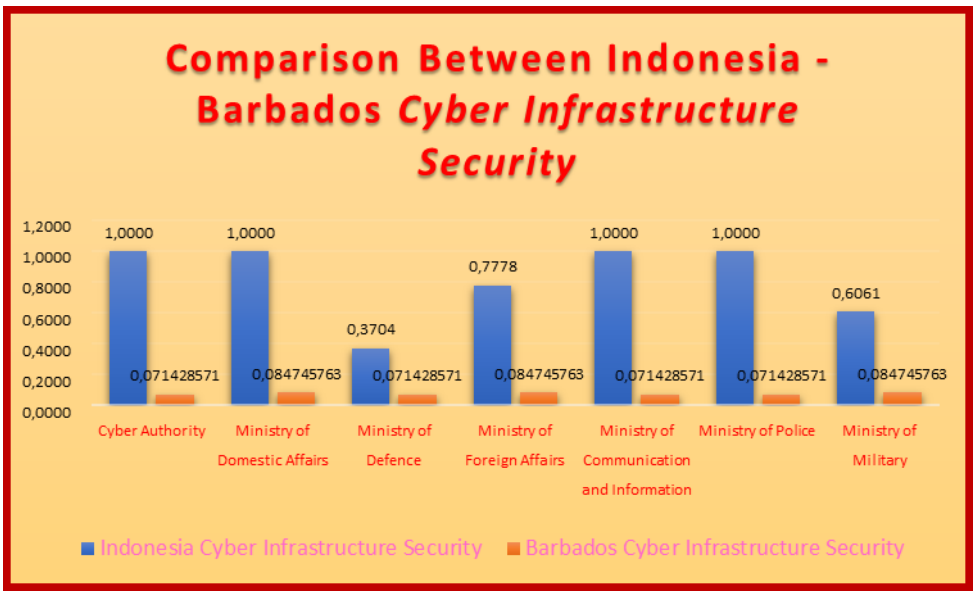
When compared with Indonesia with the Bahamas, Indonesia is significantly superior. Judging from the highest score in institutional cyber infrastructure in the Bahamas is only 0.17 with the website address not separate / relying on bahamas.gov.bs, and royalbahamaspolice.org with the second lowest score of 0.0204. As shown in the table below:



3. 1. 5. Barbados Cyber Infrastructure Security

Barbados is a small island country in the southeastern Caribbean Sea. Supported by a fairly flat island surrounded by coral reefs for tourism and fisheries potential. For the procurement of cyber infrastructure, Barbados is quite good in its official government institution cyber infrastructure with only the website addresses gisbarbados.gov.bb and gov.bb included.

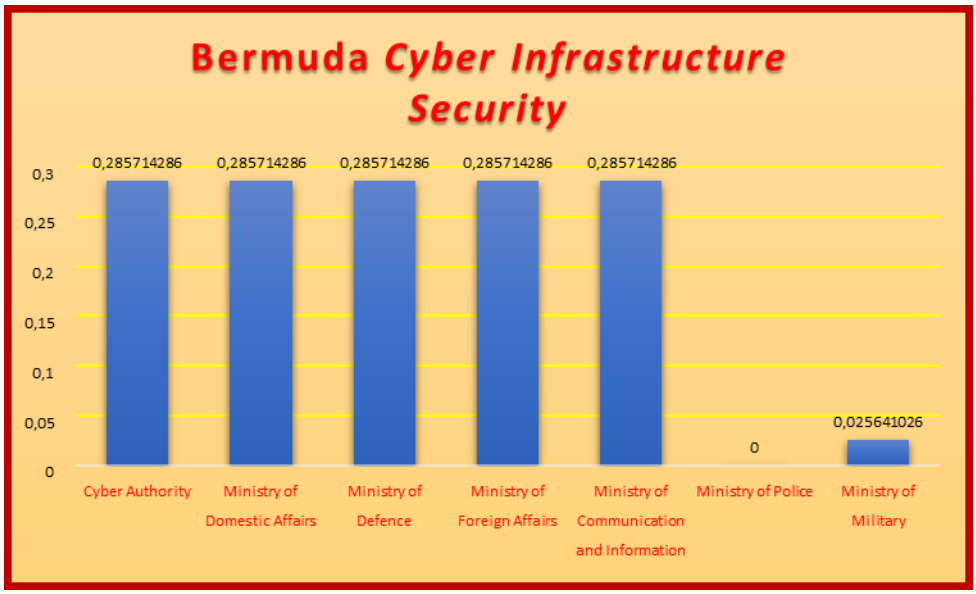
If it is compared with Indonesia, it is still better for Indonesia to face digital diplomacy with a comparison of significant values as shown in the table below:



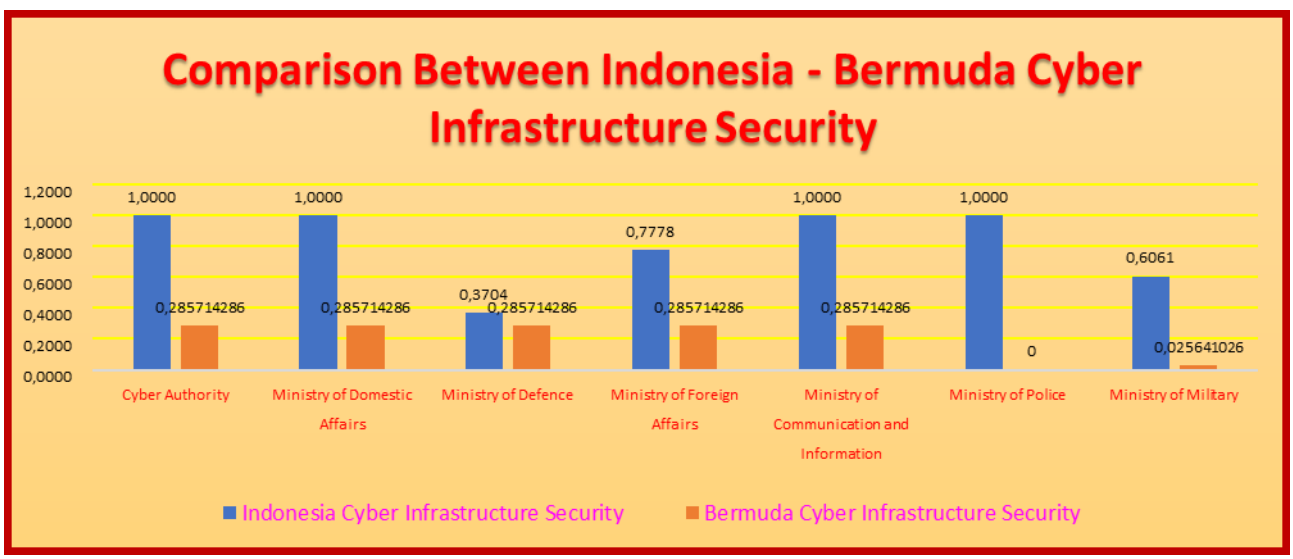
3. 1. 6. Bermuda Cyber Infrastructure Security

Bermuda is a small island located in the northwest of the Atlantic Ocean, also known as one of the nine smallest countries in the world in total land area. Bermuda does not have an airline or regular delivery service but can serve as a transit destination for the US, Canada and the UK (Bermuda 2019). Bermuda is in the oldest region in the UK, as in the previous discussion for diplomatic representation with other countries that are united with the UK.

Regarding the cyber infrastructure owned by the State of Bermuda, it is quite good, although it is considered not optimal because for police institutions there is no value from the website bermudapolice.bm, it can be said that the website formed is not optimal and is not used.



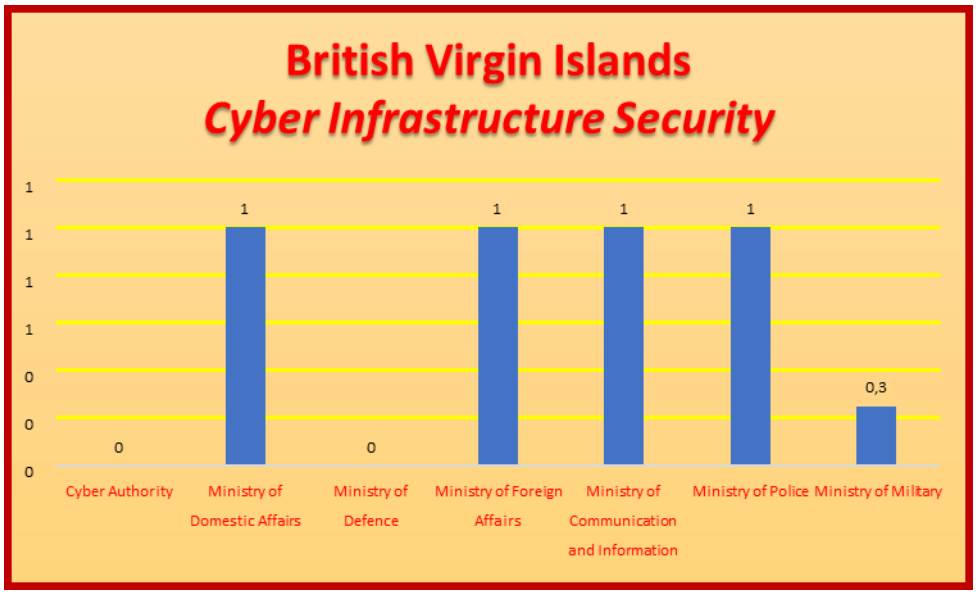
The following is a comparison table of Cyber Infrastructure in Indonesia with that of the Bermuda state government. It seems that Indonesia is still outperformed.



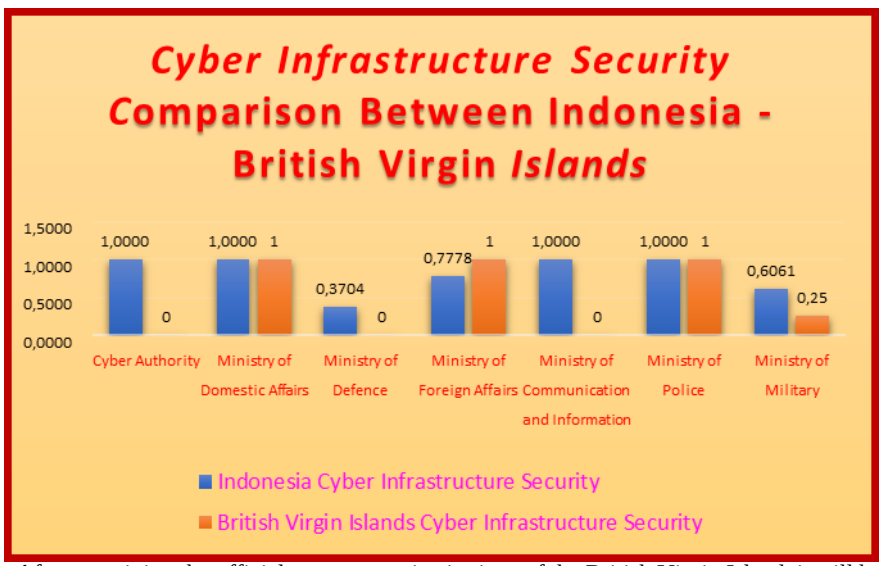
3. 1. 7. British Virgin Islands Cyber Infrastructure Security

The British Virgin Islands is an archipelago that has more than 40 islands with 16 inhabited islands. The first inhabitants of this country were the Netherlands in 1648, and were annexed by the British in 1672.

During the 17th century, the territorial territory of the British Virgin Island was divided into two, namely Britain and the vicinity of Denmark. Like the other island nations that have been discussed, the British Virgin Island is also largely the economy refers to tourism and water management (Nationsonline 2021).



The cyber security infrastructure in the British Virgin Island is classified as better than the countries discussed earlier because there are 4 ministries that have a value of 1, such as the interior ministry, the foreign ministry, the information and communication ministry, and the police.



After examining the official government institutions of the British Virgin Island, it will be compared with the chart be

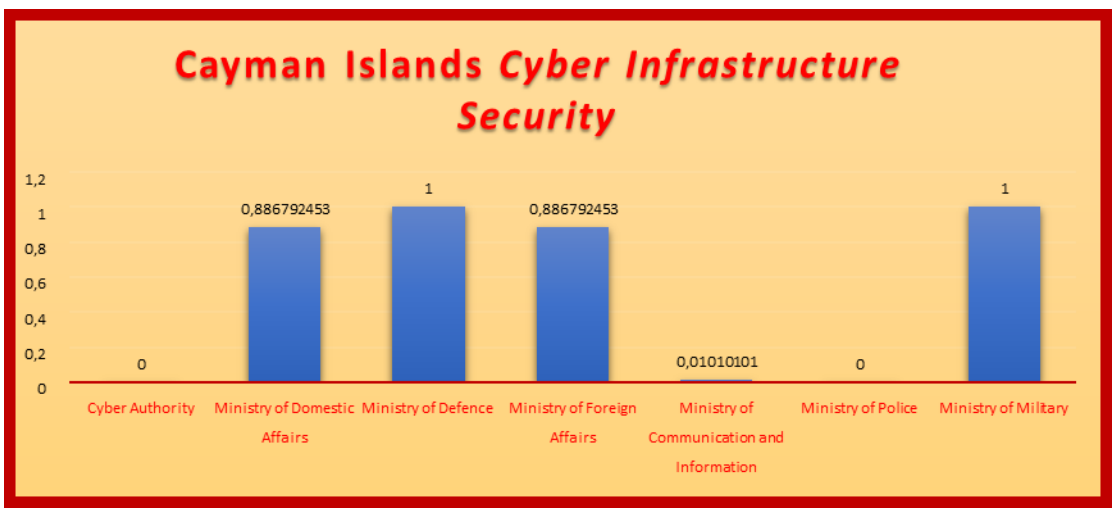
From the chart above, it can be analysed that the same strong value is related to cybersecurity

infrastructure in the institutions of each country, namely the ministry of interior and the police. Meanwhile, in the cyber authority institution and the ministry of information and communication, Indonesia is superior to the British Virgin Island, but for the foreign ministry, the British Virgin Island is superior with a score of 1. So, if done on average, British Virgin Island's infrastructure is better than that of the British Virgin Island. Indonesia.

3. 1. 8. Cayman Islands Cyber Infrastructure Security

The Cayman Islands is a country outside the British / West Caribbean Sea Region. This region consists of three islands, namely Grand Cayman, Cayman Brac, and Little Cayman, which are located south of Cuba and northwest of Jamaica. The leadership of a parliamentary democracy with the head of state is the queen of Great Britain. The Cayman Islands have a mixed economic system, and they are fast growing offshore financial centers (globaledge, 2021).

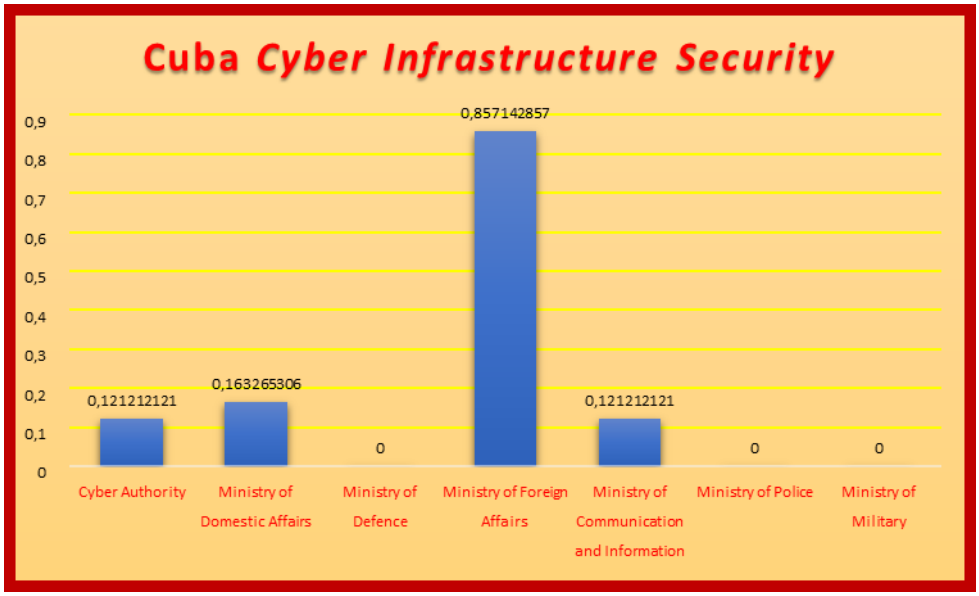
The Cayman Islands' cybersecurity infrastructure is quite good. With the existence of two institutions that have a value of 1 such as the ministry of defense and the ministry of military. However, there is a shortage of cybersecurity infrastructure in the government agency cyber authority and police as well as the information and communication ministry which only has a value of 0.01010.



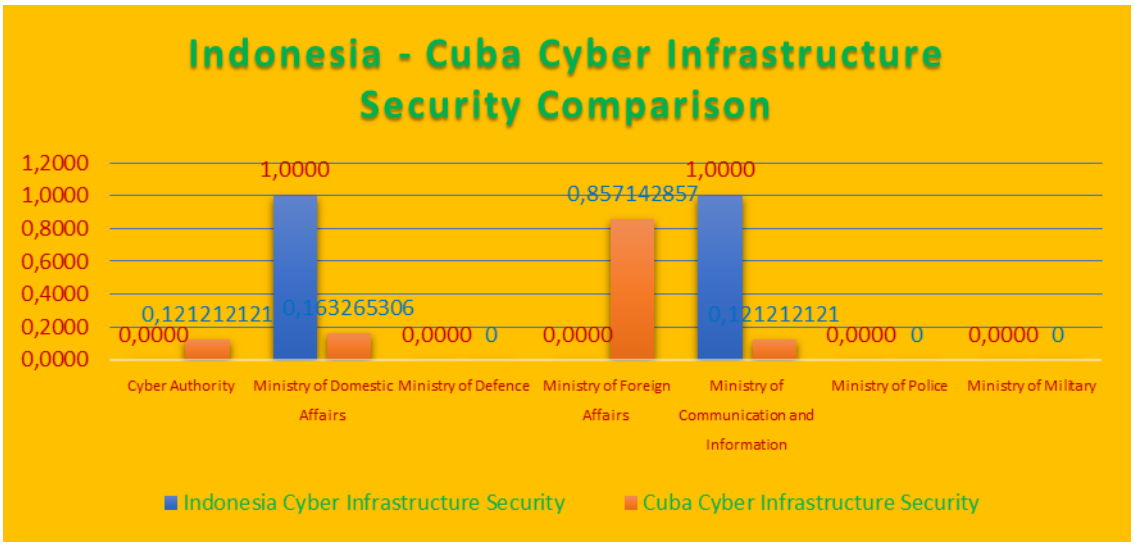
The form of comparison can be seen as in the graphic presentation below, namely Indonesia compared to Cayman Island is superior by having 4 ministries with perfect scores, namely the cyber authority institution, the interior ministry, the information and communication ministry and the police. On the other hand, Cayman Island outperformed Indonesia in the field of defense and military ministries as in the table below:

3. 1. 9. Cuba Cyber Infrastructure Security

Cuba is a country whose history was discovered by Christopher Columbus in 1492 with a Spanish colony. In 1898, the United States also made a claim against Cuba during the Spanish-American War. Under his leadership, Fidel Castro declared Cuba a socialist country from 1961 to 2008. With his socialist concept, Cuba's security infrastructure received less attention. It can be seen that only foreign ministry institutions with qualified cybersecurity infrastructure. It doesn't even have value for the defense institutions, the police, and the military.



When compared to Indonesia, Cuba only excels in the security of the foreign ministry's institutions. The rest, Indonesia remains superior in the country's internal cybersecurity infrastructure.

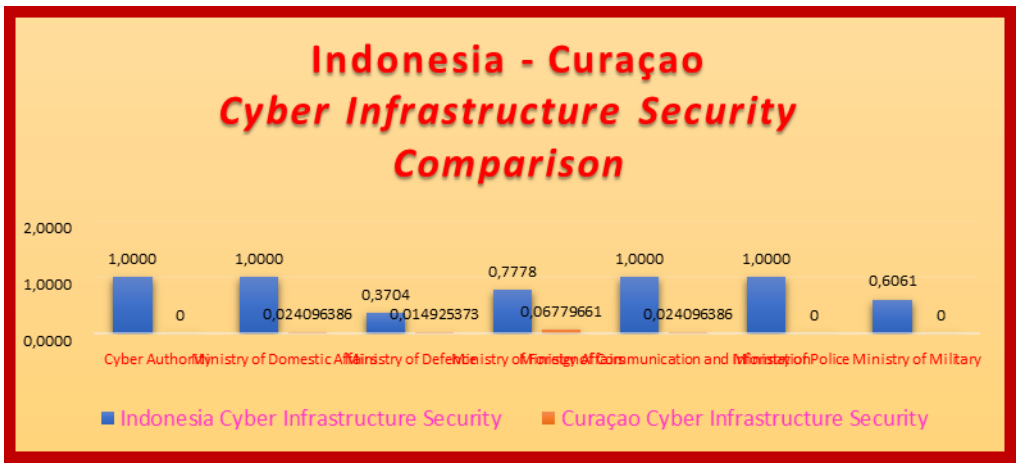


3. 1. 10 Curaçao Cyber Infrastructure Security

Curaçao, is a country in the Caribbean Islands that is part of the Kingdom of the Netherlands. With its capital in Willemstad, the Curaçao country provided a special advantage for the Netherlands, namely being one of the best ports in the West Indies. When viewed from the name of the ministry's website, the majority is dominated by domains (.nl) such as the ministry of home affairs, the ministry of defense, and the ministry of information and communication.

It started with the need for salt to preserve fish that drove the Dutch to the Caribbean. During the period 1660 to 1700, the Dutch West Indies Company flourished, the slave trade multiplied, and the port of Curaçao was opened to all countries both to receive incoming food supplies and to dispose of produce from South American plantations (Britannica, 2021).Untuk menjelaskan seberapa baik infrastruktur pertahanan siber di negara Curaçao, chart diatas membuktikan bahwa tertinggi terdapat pada institusi kementerian luar negeri. Dan tidak ada nilai untuk institusi cyber authority, police, dan military.

The figure is very small when compared to the country of Indonesia as in the chart below:

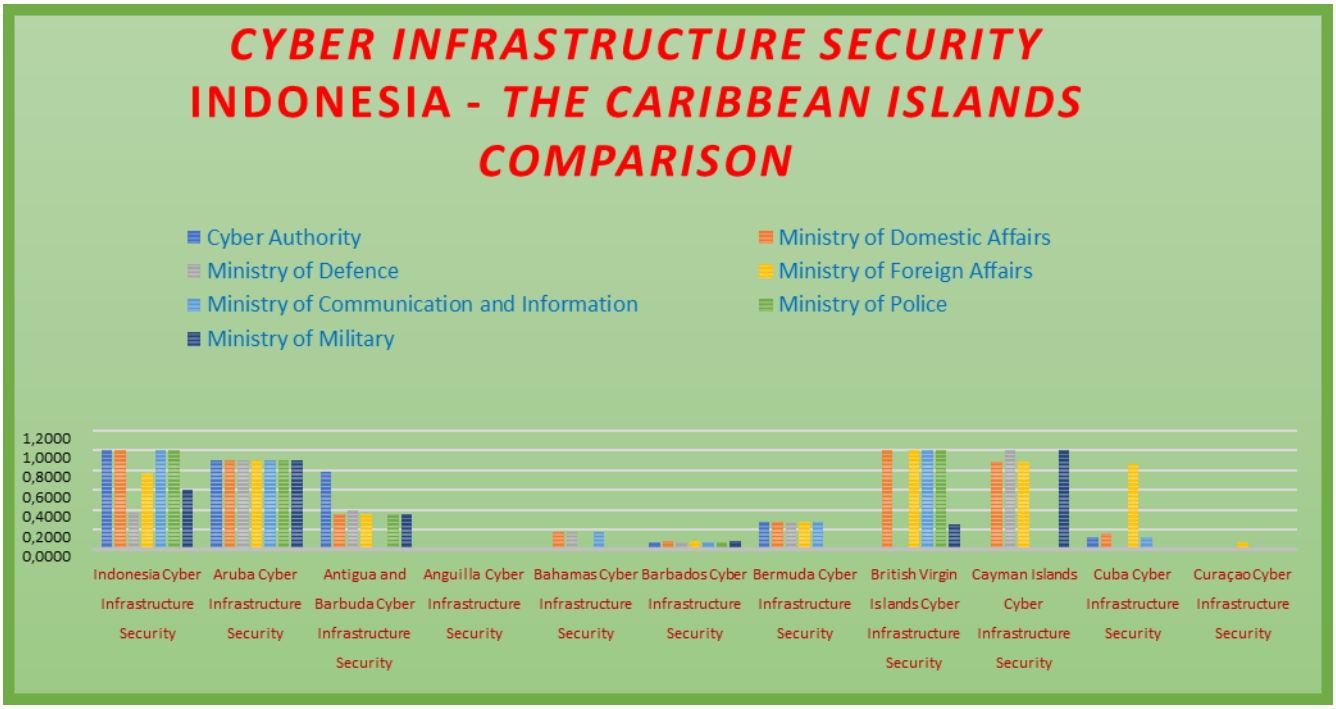


Indonesia outperformed Curaçao in every state institution. This proves that Curaçao's cybersecurity is not as good as Indonesia.

Overall, the 10 countries in the Caribbean archipelago in terms of providing cyber security infrastructure when compared to Indonesia, there are the following results:

The order of countries with cybersecurity infrastructure from best to inadequate is the best country of British Virgin Islands, followed by Indonesia, then Cayman Islands, Antigua and Barbuda, Aruba, Cuba, Bermuda, Bahamas, Barbados, Curaçao.

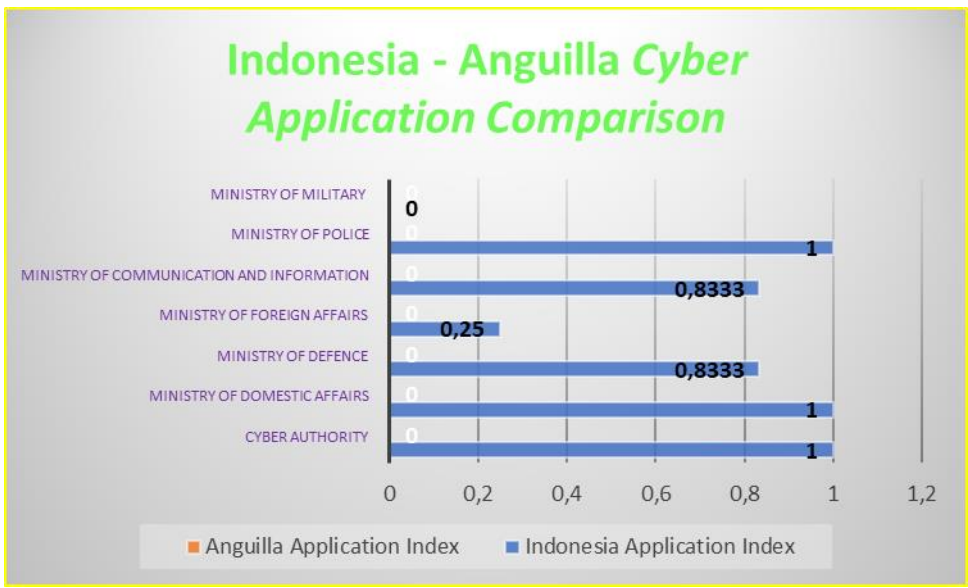
States	Cyber Infrastructure Security Index
Indonesia	0,8220
Anguilla	0,0000
Antigua and Barbuda	0,373637977
Aruba	0,897435897
Bahamas	0,076807078
Barbados	0,077135939
Bermuda	0,207744636
British Virgin Islands	1
Cayman Islands	0,540526559
Cuba	0,190270047
Curaçao	0,018702108



3. 2. 1. Cyber Application Indonesia - Anguilla

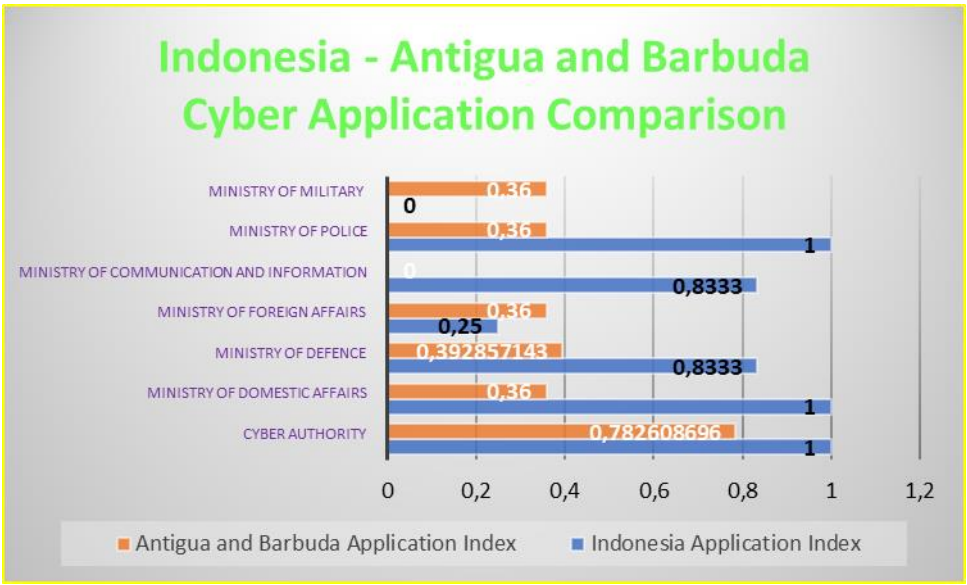
Apart from not optimal infrastructure security, Anguilla also has no value in the cyber application index. As shown in the table below.

In contrast to the state of Indonesia which has number 1 in the ministry of cyber authority, the ministry of home affairs, and the police.



3. 2. 2. Cyber Application Indonesia - Antigua and Barbuda

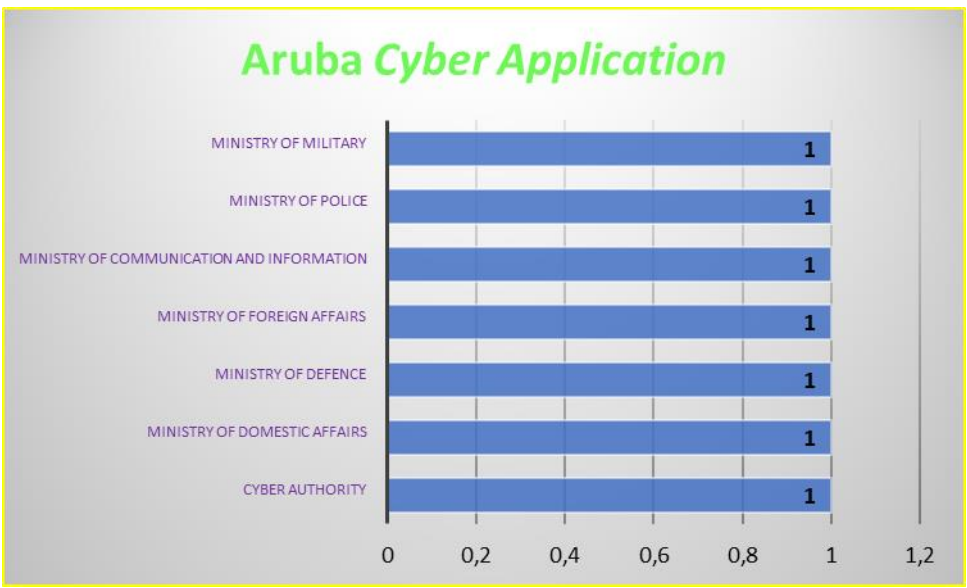
Furthermore, in Antigua and Barbuda, the cyber application shown per institution looks low. Even the Information and Communication institution has a value of 0. The highest number is only cyber authority institutions indicated by the number 0.7826

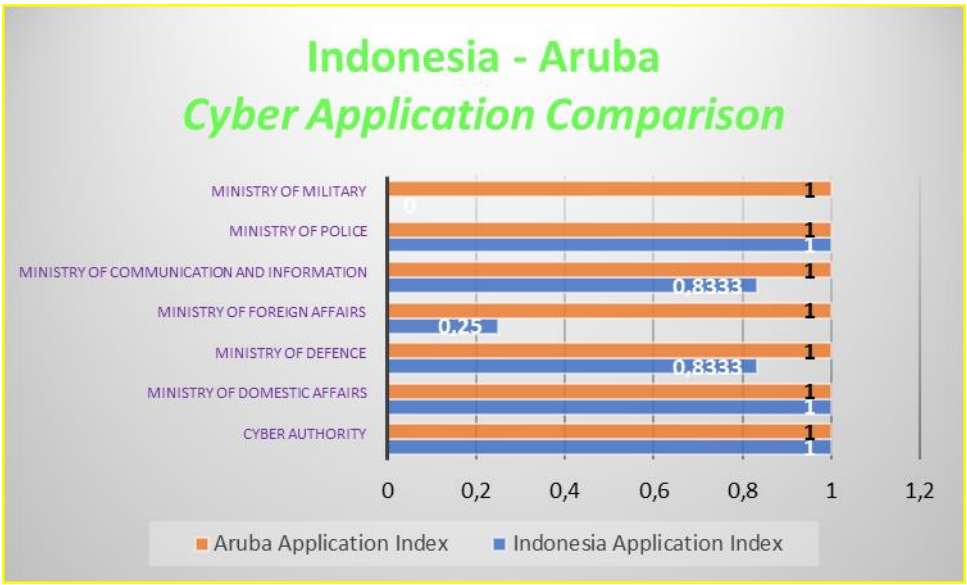


When compared to Indonesia, Indonesia only has the lowest application index value with a value of 0 in military institutions. Antigua also outperformed Indonesia only in the ministry of foreign affairs and the military.

3. 2. 3. Cyber Application Indonesia - Aruba

For the country's Cyber Application Index in the Caribbean Islands, Aruba has the highest score. After researching this, there is only the government.aw website which is applied to all ministries so that it gets a score of 1.

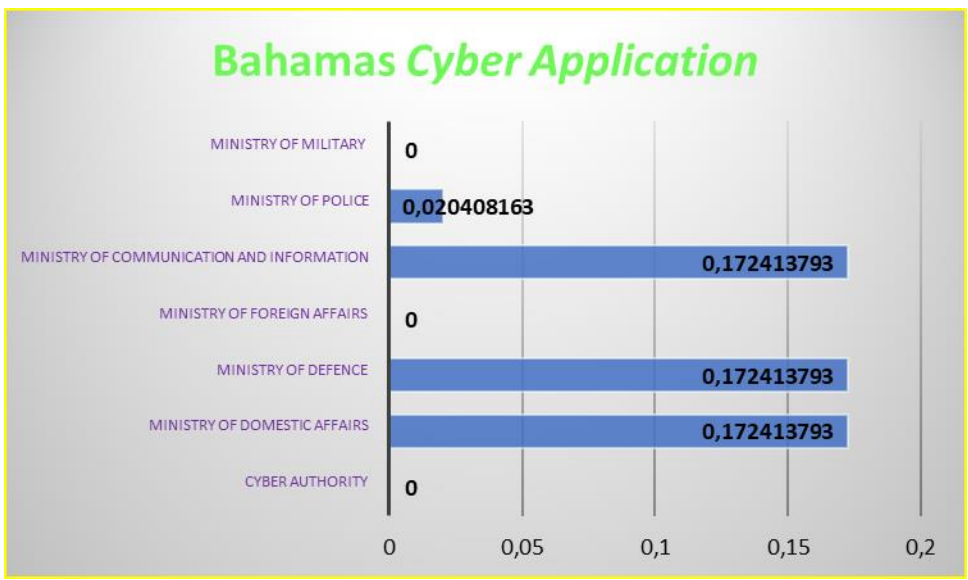




Compared to the Application Index in Aruba and Indonesia, it can be said that in terms of the Cyber Application Index, the country of Aruba is superior to Indonesia.

3. 2. 4. Cyber Application Indonesia - Bahamas

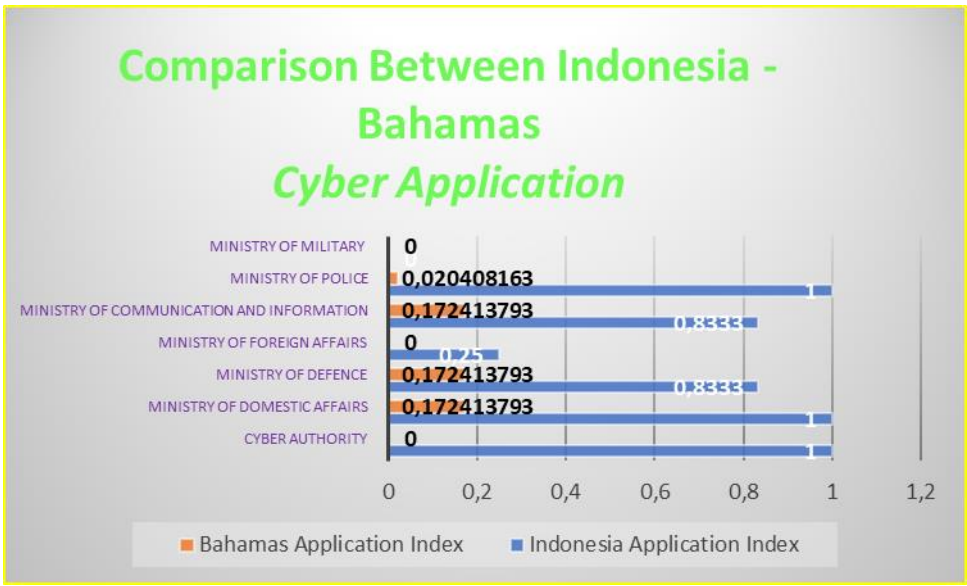
There are very few Siber Index applications in the Bahamas. It is said so with the acquisition values shown in the table below:



There are three values of 0, namely the ministry of military, foreign affairs, and cyber authority. So that when compared with the country of Indonesia, it will appear on the chart below:

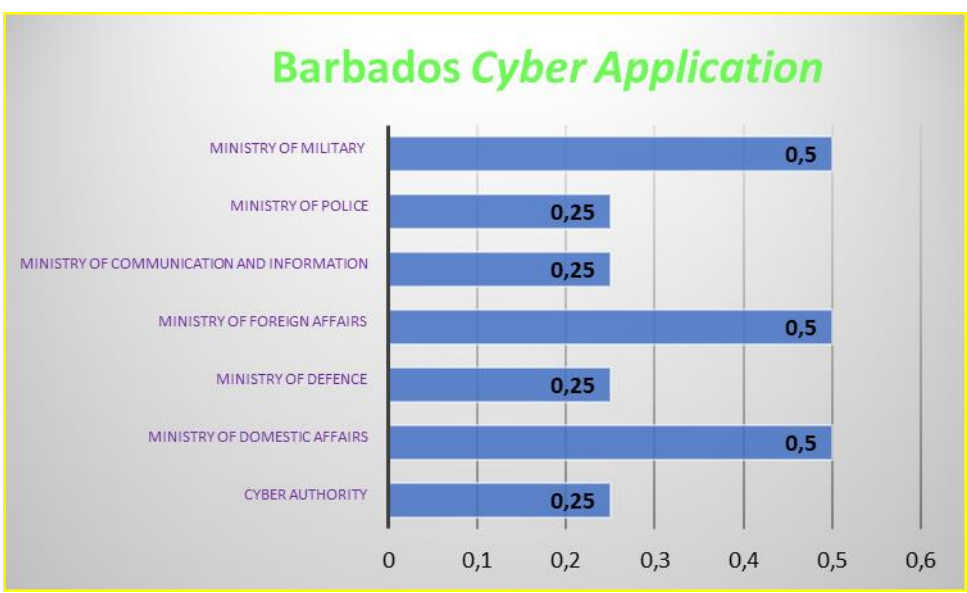
For military institutions, both the Bahamas and Indonesia both have a value of 0. Then if the two countries' values

collaborate, it can be seen that the superior one is Indonesia because there is no single value in the formal institutions of the Bahamas state.

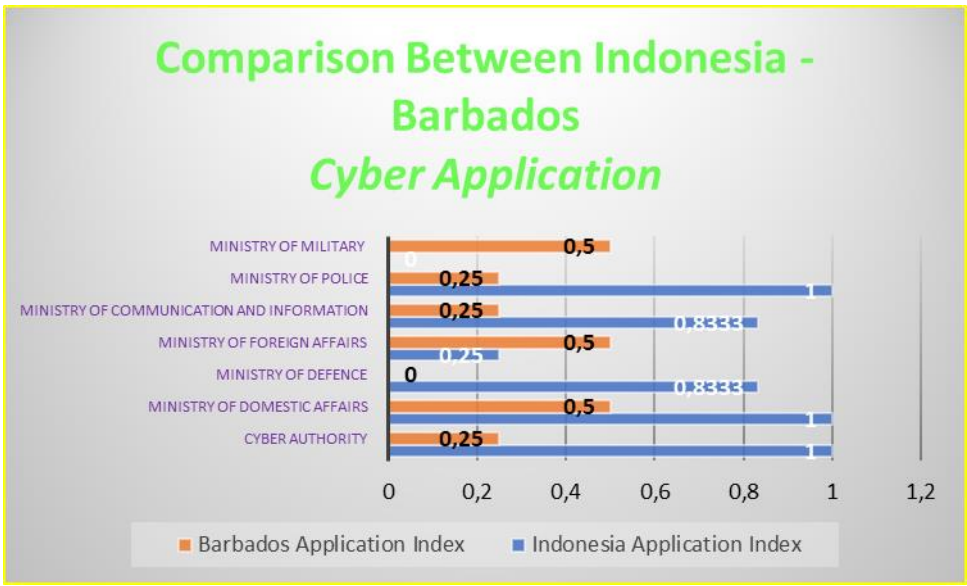


3. 2. 5. Cyber Application Indonesia - Barbados

For the country of Barbados, the index of cyber applications is also low. The highest is only half of the total score (1), namely the military ministry, the foreign ministry and the interior ministry. However, in the country Barbados does not have a score of 0, which means that the Cyber Application in the country of Barbados is still running even though it has not received a maximum score.

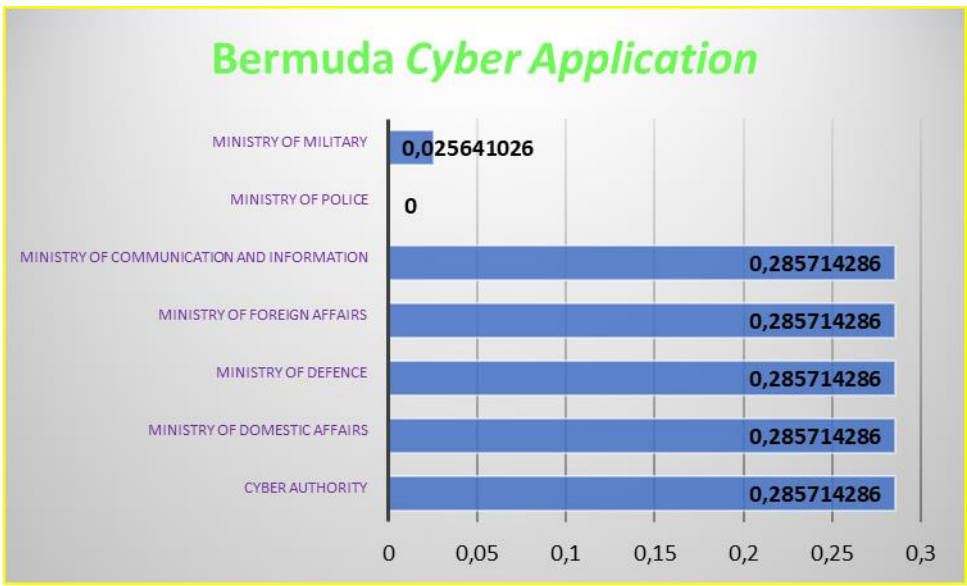


When compared with Indonesia, Barbados has a Cyber Application Index that is lower than that of Indonesia. As seen in the chart below. The state military institution of Barbados is superior to Indonesia because it has a value of 0.5 and also the foreign ministry of Barbados has a difference of 0.25 higher than that of Indonesia. However, for the police, the ministry of communication and information, the ministry of home affairs, and Indonesia's cyber authority are superior.

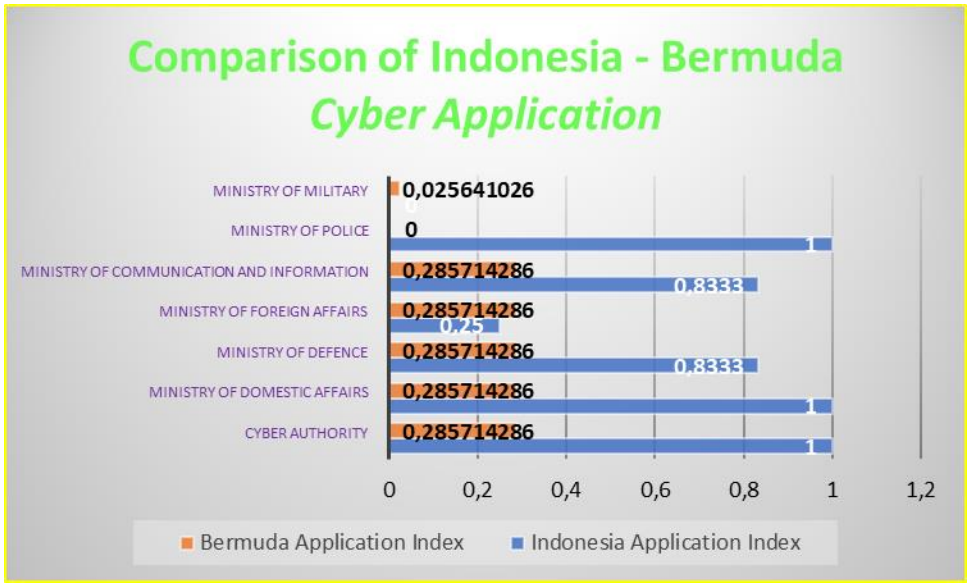


3. 2. 6. Cyber Application Indonesia - Bermuda

Then for Bermuda, the index for the cyber application is weak by the police because it has a value of 0. The second lowest value is in the military ministry. For the other four institutions, such as the ministry of information and communication, the ministry of foreign affairs, the ministry of interior, the ministry of defense, and cyber authority, it only had a value of 0.2857.

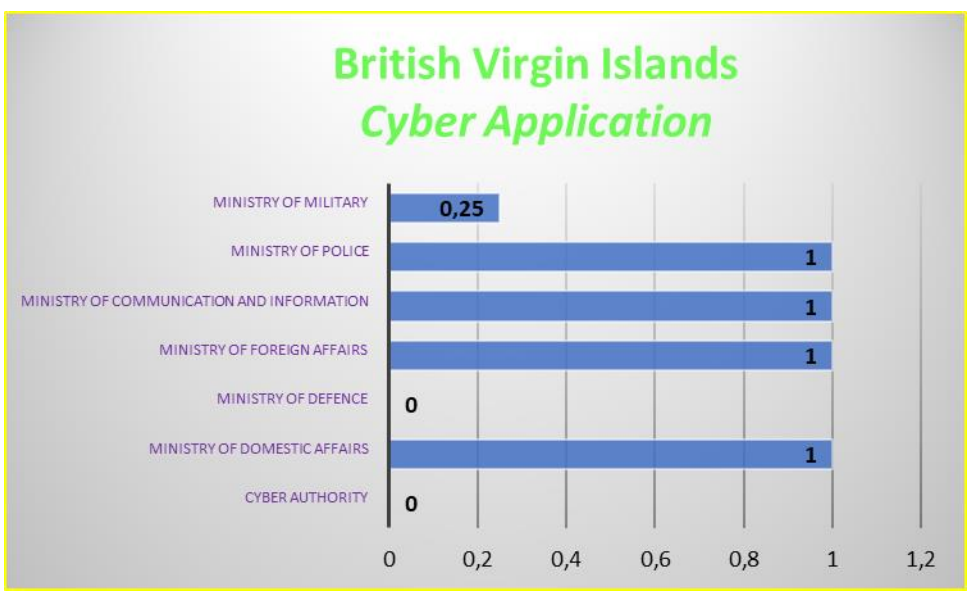


In comparison to Indonesia, Bermuda is only superior in the military ministry, apart from other ministries, Indonesia is far superior to Bermuda.

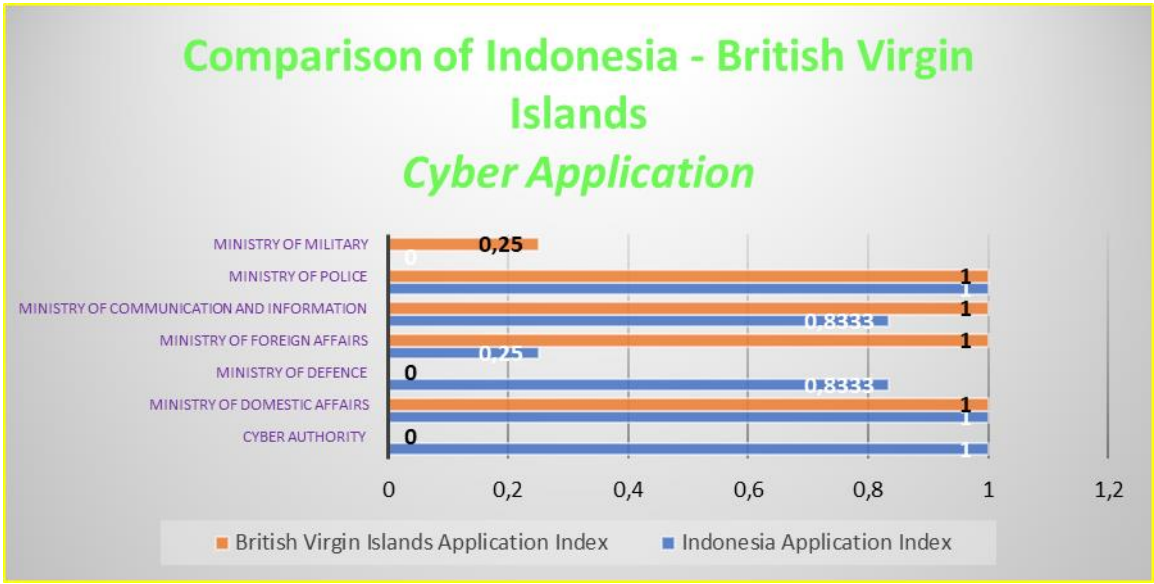


3. 2. 8. Cyber Application Indonesia - British Virgin Islands

The British Virgin Islands country, the Cyber Index application has a perfect score on the police ministry, the ministry of communication and information, the ministry of foreign affairs, and the ministry of foreign affairs with a value of 1.While the military ministry is only worth 0.25 and the weakest is the cyber index application belonging to the ministry of defense with value 0.

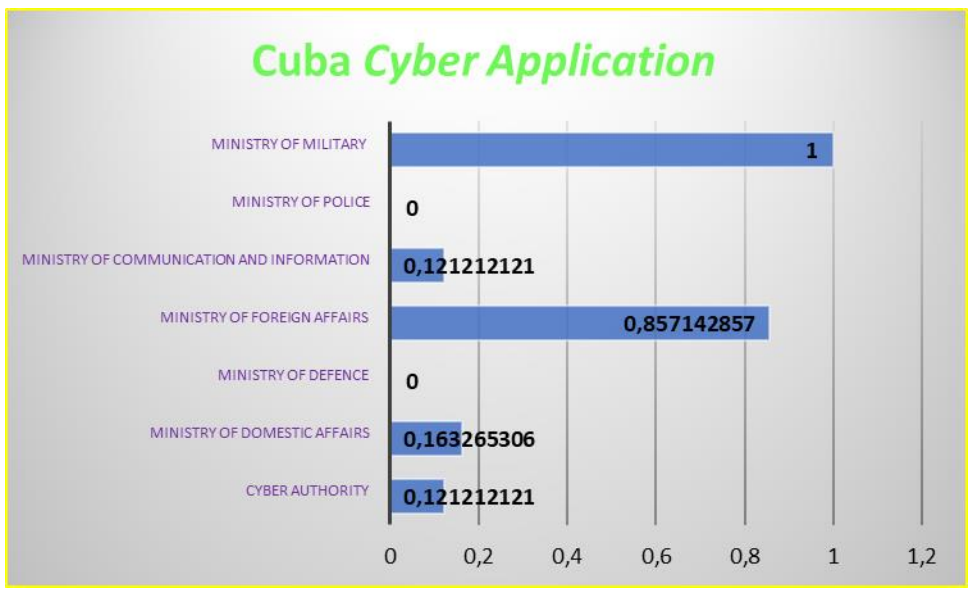


When compared to the country of Indonesia, the British Virgin Island is superior in the value of the Cyber Index Application than in Indonesia because with four institutions from seven state institutions it has a complete value, namely 1. As the data shown in the chart below:

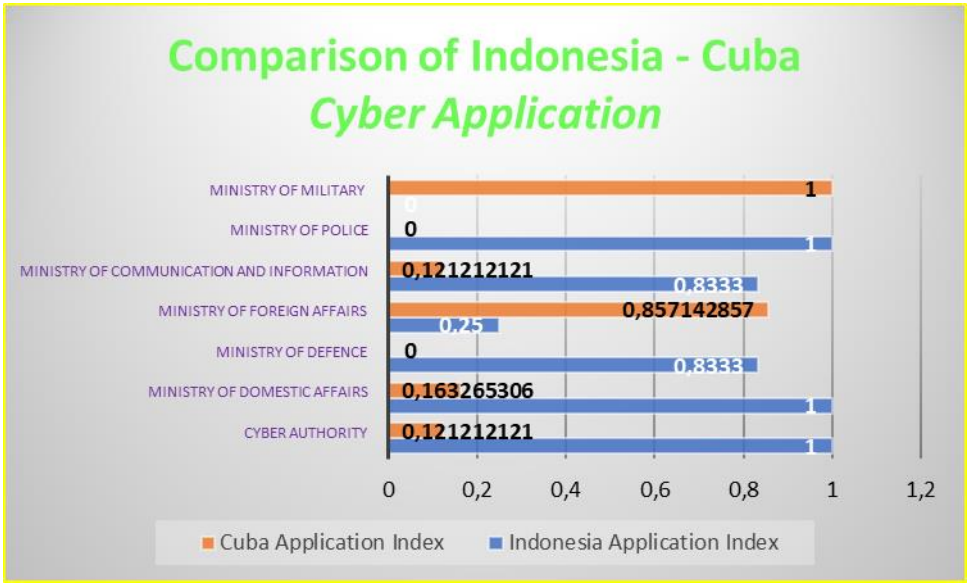


3. 2. 9. Cyber Application Indonesia - Cuba

For the country of Cuba, the highest index cyber application value lies in military institutions with a value of 1. While the lowest value is 0 found in the police ministry and the defense ministry.

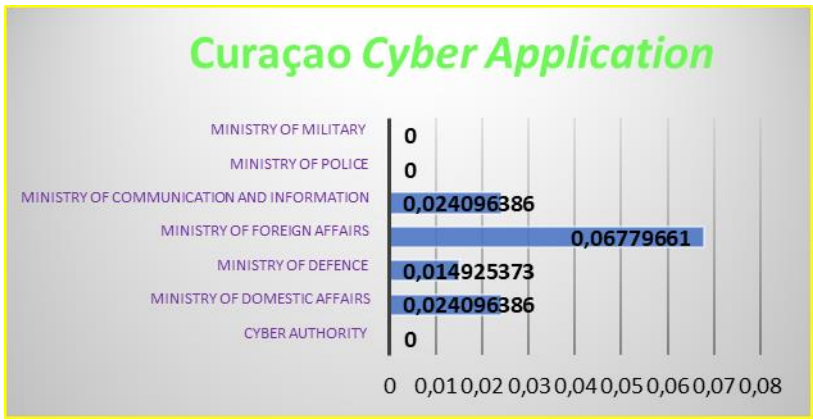


So that when compared with the Indonesian state, Indonesia is far superior to the Cuban state, because only one Cuban institution is higher than Indonesia, namely the military ministry and the foreign ministry only.

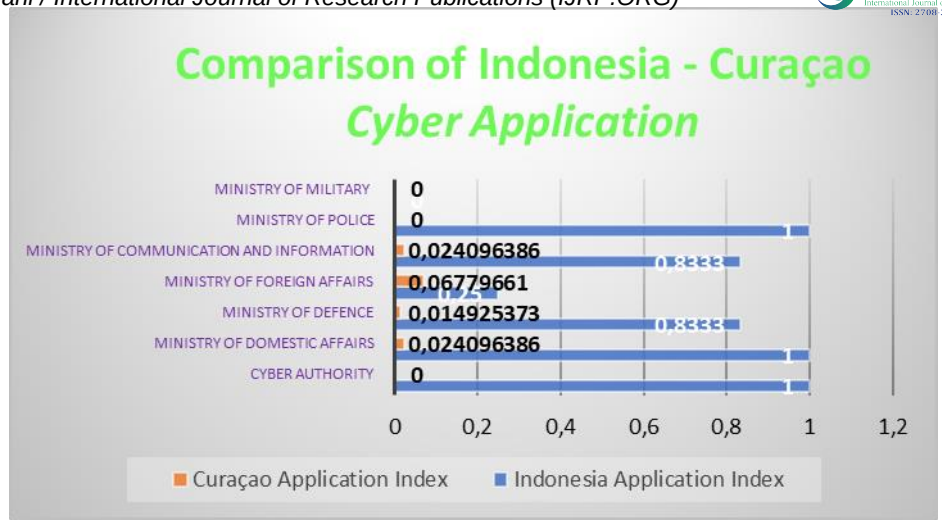


3. 2. 10. Cyber Application Indonesia - Curaçao

In the Curaçao country, the value of cyber applications has no value, namely that which is inherent in military institutions, police, and cyber authority. The highest value compared to other values is at the ministry of foreign affairs with a value of 0.0677.

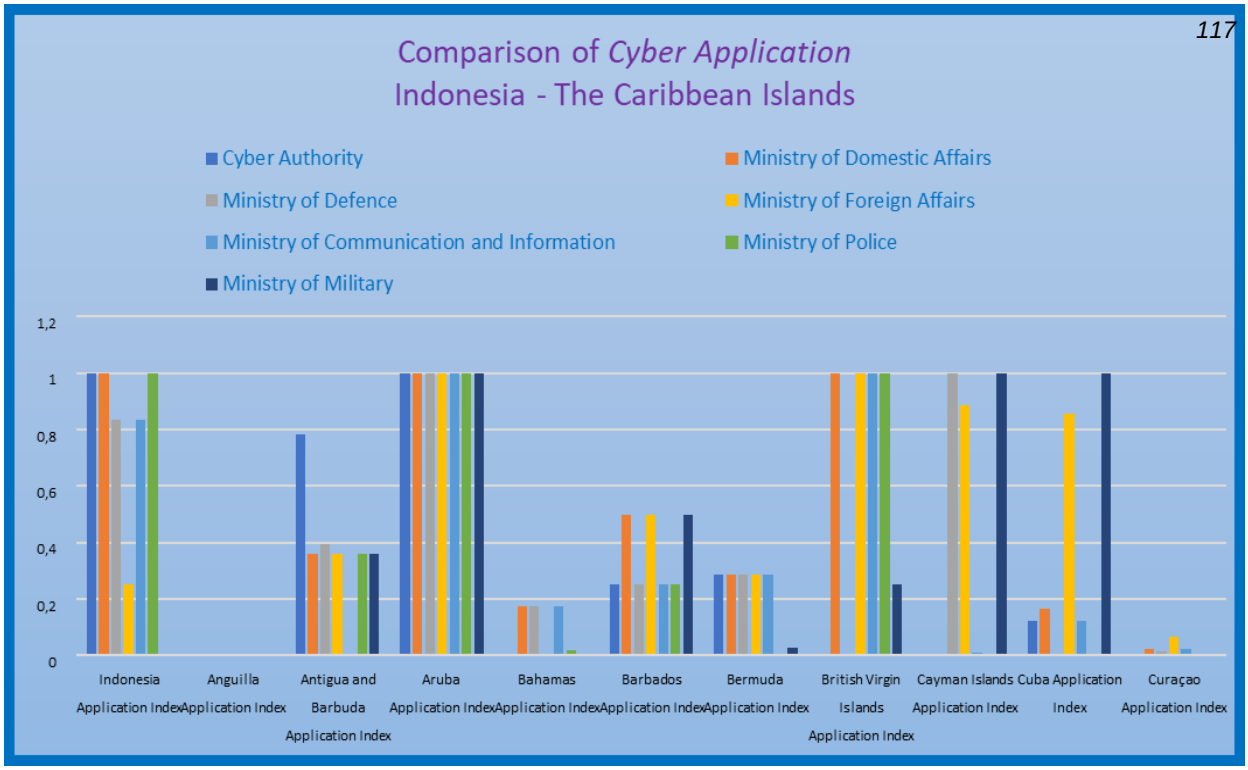


So that it can be compared to Indonesia against the Curaçao country, Indonesia is far superior in the Cyber Application Index value because there are many 0 values found in the Curaçao country as in the comparison chart below:



Of the ten countries in the Caribbean Islands, the Cyber Application value can be sorted from highest to lowest, namely the highest, namely Aruba, followed by Indonesia, British Virgin Islands, Cayman Islands, Antigua and Barbuda, Barbados, Cuba, Bermuda, Curaçao, and finally the country. Anguilla.

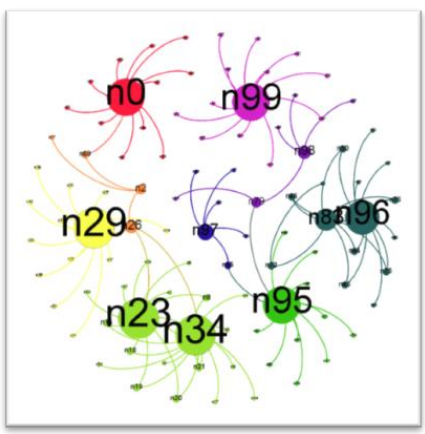
States	**Cyber Application Index**
Indonesia	0,702371429
Anguilla	0
Antigua and Barbuda	0,373637977
Aruba	1
Bahamas	0,076807078
Barbados	0,357142857
Bermuda	0,207744636
British Virgin Islands	0,607142857
Cayman Islands	0,413841923
Cuba	0,323261772
Curaçao	0,018702108



3. 3 Cyber Infrastructure & Application Network

In the cyber infrastructure & application network, each country that will be studied is processed in the form of a Maltego application which is converted via excel data to make nodes in the Gephi application.

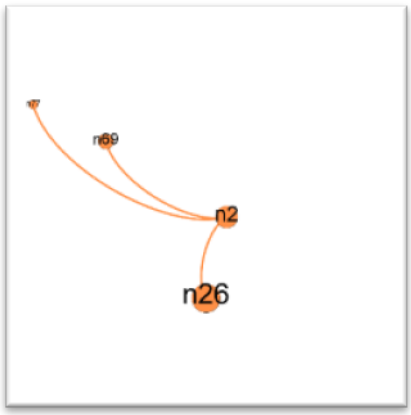
3. 3. 1. Cyber Infrastructure & Application Network Anguilla



The country of Anguilla has 6 interacting institutional clusters. In the nodes that are involved in

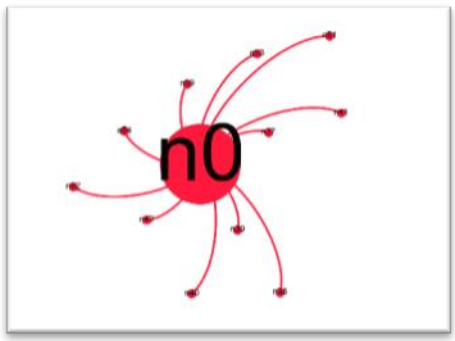
network interactions, there are not only government-owned domains but also private / intruders' domains.

3.3.1.a. Cyber Infrastructure & Application Network Anguilla; Cyber Authority, Ministry of Domestic Affais, Ministry of Foreign Affairs, Ministry of Communication



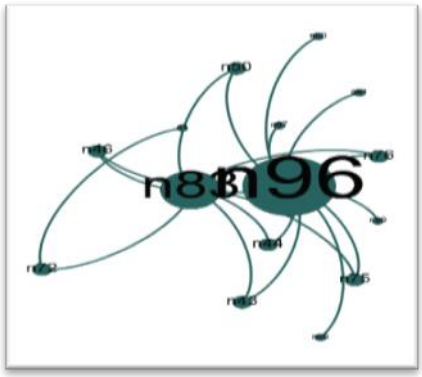
The ministerial cluster becomes one, which is available on the gov.ai web. And the interaction partition rate is only 4%.

3. 3. 1. b. Cyber Infrastructure & Application Network Anguilla Ministry of Defense



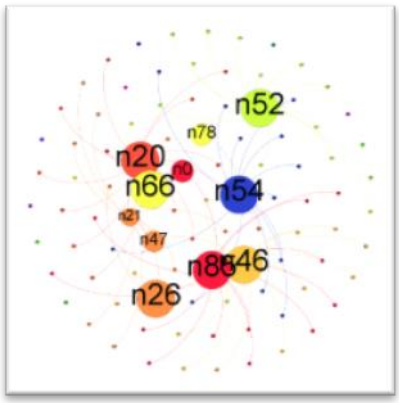
The level of network interaction on the gov.uk site is higher than the website address above, which is 12%.

The largest interaction nodes belong to intruders with a percentage of 20%.



The second largest interaction is as much as 15% million from non-government activities.

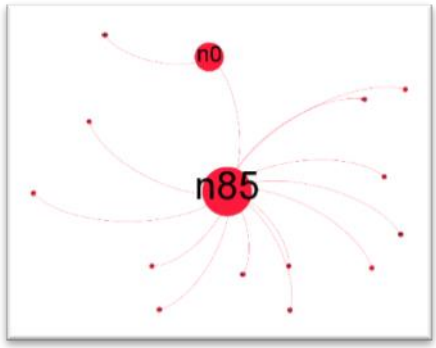
3. 3. 2. Cyber Infrastructure & Application Network Antigua and Barbuda



Overall, Antigua and Barbuda's Cyber Infrastructure & Application Network is divided into 17 clusters.

3. 3. 2. b. Cyber Infrastructure & Application Network Antigua and Barbuda Cyber Authority

The largest cluster of 15.96% is indicated by nodes n85 as seen with Gephi Malterego Entity; ns.itcenter.gov.ag which means it belongs to the government of Antigua and Barbuda. And it looks like no belongs to the Ministry of Cyber Authority Antigua and Barbuda



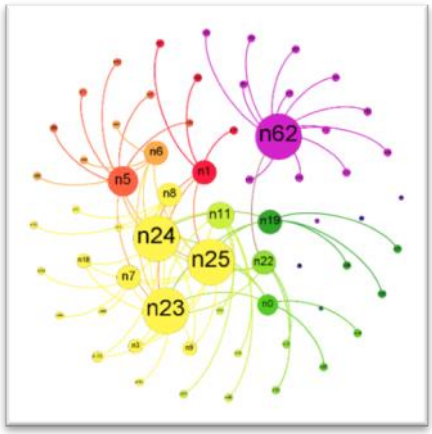
3. 3. 2. a. Cyber Infrastructure & Application Network Antigua and Barbuda Ministry of Domestic Affairs, Foreign Affairs, Police and Military

Shown by n20 which is the second largest cluster, amounting to 13.83%.

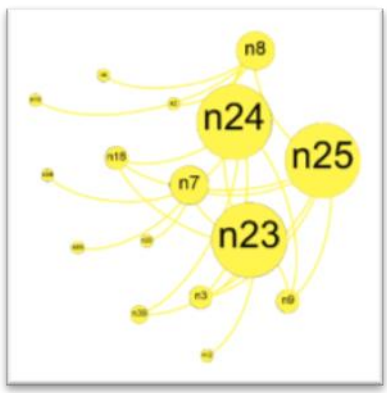
3. 3. 2. b. Cyber Infrastructure & Application Network Antigua and Barbuda Ministry of Defense

Occupying the fifth order in the interaction nodes, namely as much as 13.83%

3. 3. 3. Cyber Infrastructure & Application Network Aruba

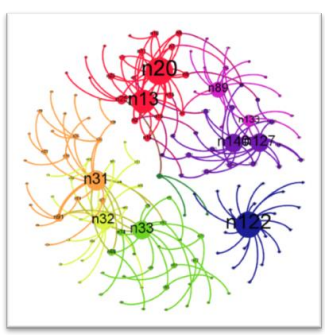


Aruba's Cyber Infrastructure & Application Network consists of 14 clusters. For the Aruba cyber Infrastructure & Application Network, which represents all ministries, there are nodes n22 which only 4.76% ranks in the fifth cluster with the website address government.aw.

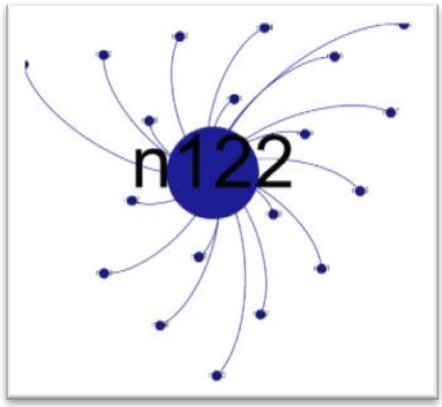


he largest nodes cluster activity, 25.4%, is owned by non-government / intruders.

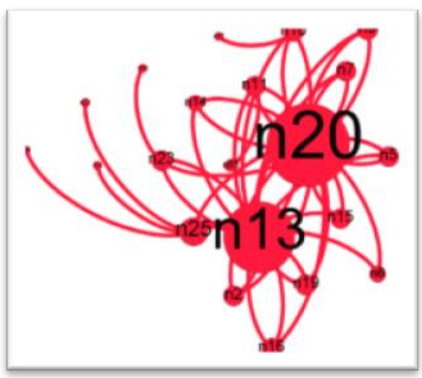
3.3.4. Cyber Infrastructure & Application Network Bahamas



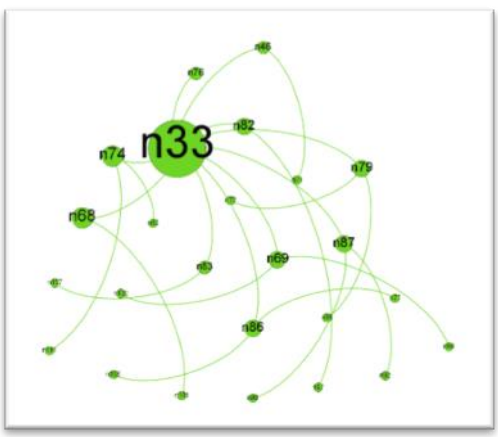
Cyber Infrastructure & Application Network Bahamas Consists of 8 clusters.



Ministry of Police which is indicated by nodes n122 ranks the fifth cluster with a percentage of 14.08%.

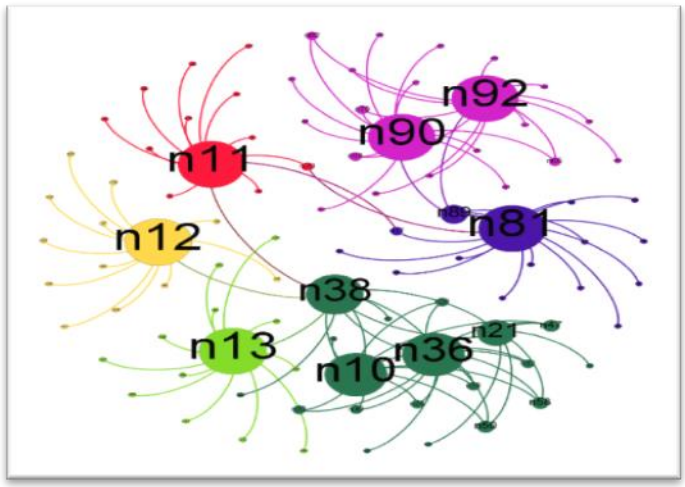


Meanwhile, n25 belongs to the ministry of foreign affairs, which ranks 3rd with a percentage of 14.79%.



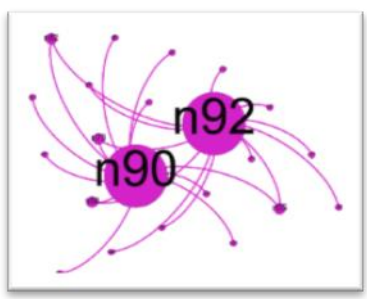
The cluster with the most interaction n33 belongs to non-government / intruders with a percentage of 17.61%.

3. 3. 5. Cyber Infrastructure & Application Network Barbados

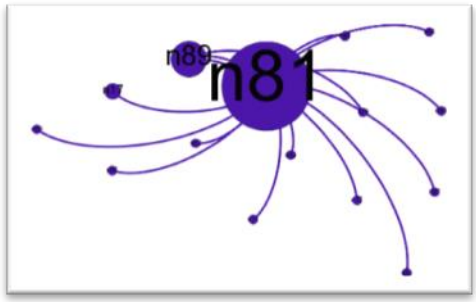


Barbados Cyber Infrastructure & Application Network, the interaction between nodes consists of 6 clusters.

N11 is occupied by the ministry of foreign affairs, domestic affairs, and military with the last rank with the smallest cluster interaction.

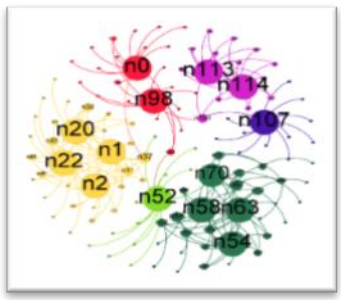


The largest cluster with the most interaction ratings, namely 23.4% on nodes n90 and n92, is occupied by intruder / non-government websites.



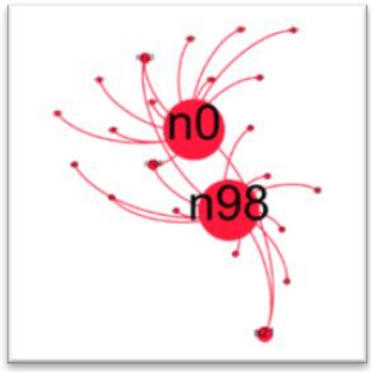
Barbados cyber authority, Ministry of defense, Ministry of communication, and ministry of police on the gisbarbados.gov.bb website is in the third cluster with an interaction percentage of 15.96%.

3. 3. 6. Cyber Infrastructure & Application Network Bermuda



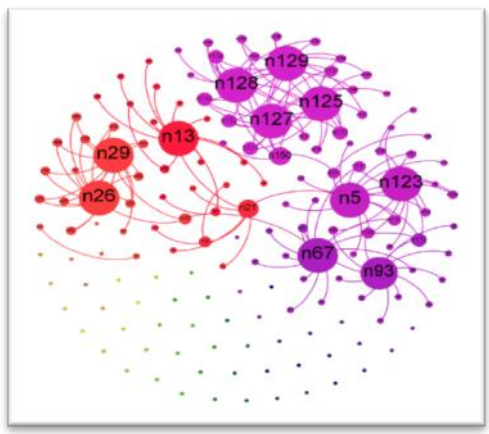
Bermuda's Cyber Infrastructure & Application Network consists of 6 color clusters.

The nodes for Negara Bermuda are marked with 52 indicating the Cluster of information on cyber authority, domestic affairs, defense, foreign affairs, and communication with the website address gov.bm. With the smallest cluster level, which is only 9.68%

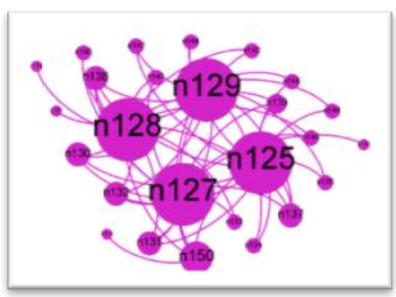


N0 indicates the ministry of police and nodes n98 shows the military with the third order of the cluster, which is 18.55% of all interactions.

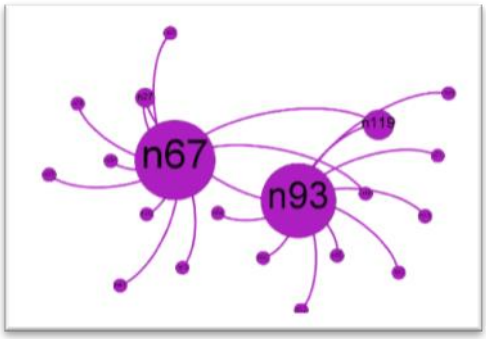
3. 3. 8. Cyber Infrastructure & Application Network Cayman Island



Cayman Island Cyber Infrastructure & Application Network consists of 3 clusters.

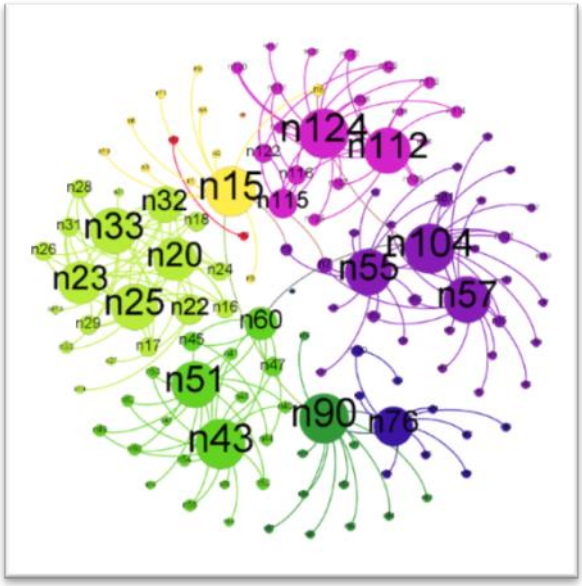


The Ministry of Foreign Affairs with the gov.ky website address has the most interaction clusters.

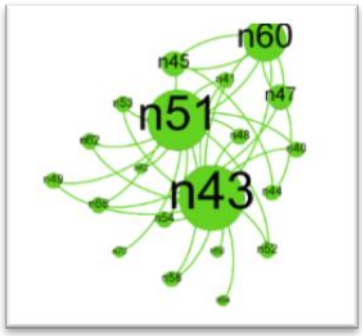


The Cayman Island Cluster Government is dominated by web nodes 67 showing the police website with the address 911.gov.ky and n93 showing the military website with the website address royalnavy.mod.uk.

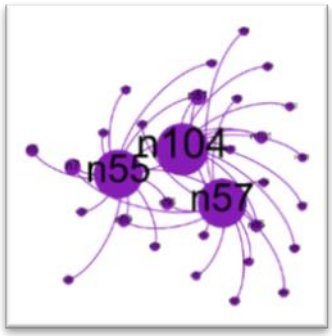
3. 3. 9. Cyber Infrastructure & Application Network Cuba



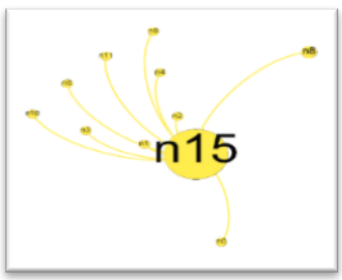
Cyber Infrastructure & Application Network Cuba with interaction nodes consisting of 10 clusters.



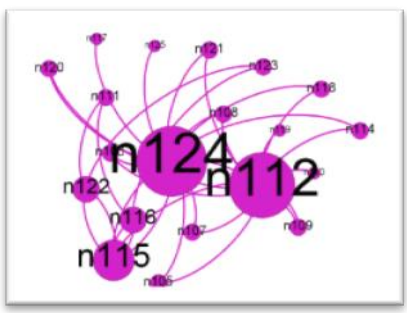
Ministry of cyber authority (n51) and ministry of communication (n43) with the website address mincom.gob.cu are in the second rank cluster with the most interactions, namely 15.87%.



The Ministry of military with the website address gacetaoficial.gob.cu ranks first with a percentage of 24.6%

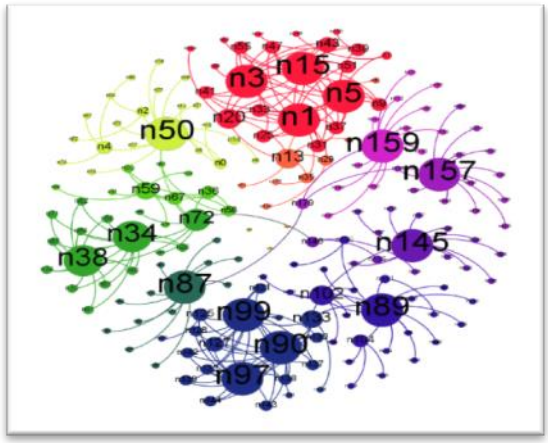


Ministry of Foreign Affairs with the website address minrex.gob.cu ranks the fifth cluster with a percentage of 8.73%

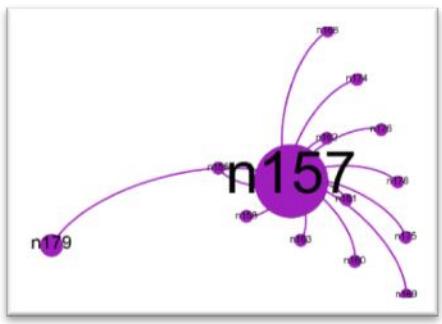


Ministry of domestic affairs with the website address minint.gob.cu ranks third with a percentage of 15.87%

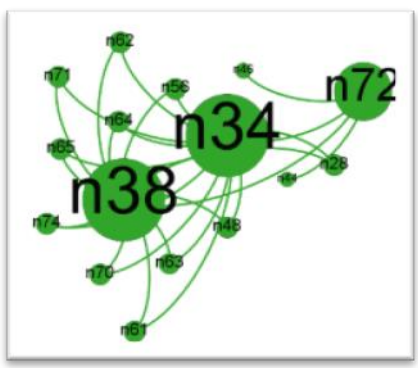
3. 3. 10. Cyber Infrastructure & Application Network Curaçao



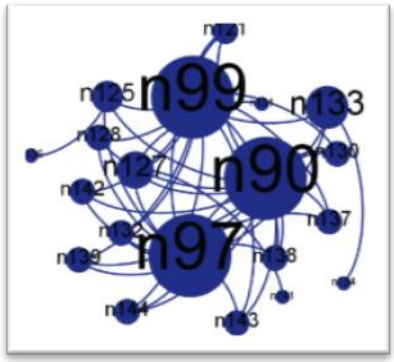
Cyber Infrastructure & Application Network Curaçao has country nodes consisting of 14 clusters.



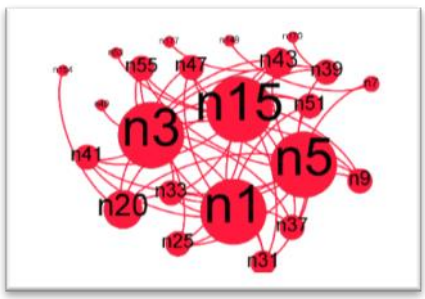
Curaçao cyber authority ranks seventh in the cluster with a percentage of 7.78% with the website address cybersecuritycuracao.com



Curaçao domestic affairs and communication with the same website address, namely kgmc.nl, ranks third with interacting clients at 8.89%.



The Ministry of Defense ranks fourth in the cluster with a percentage of 11.11% with the website address government.nl.

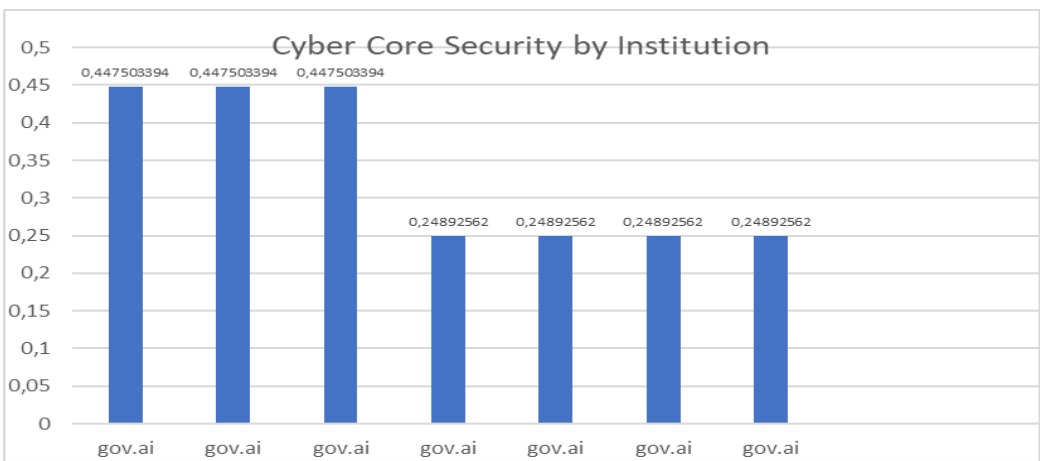


In the ministry of foreign affairs it ranks second at the top with cluster interaction as much as 12.78% with the website address vm.ee.

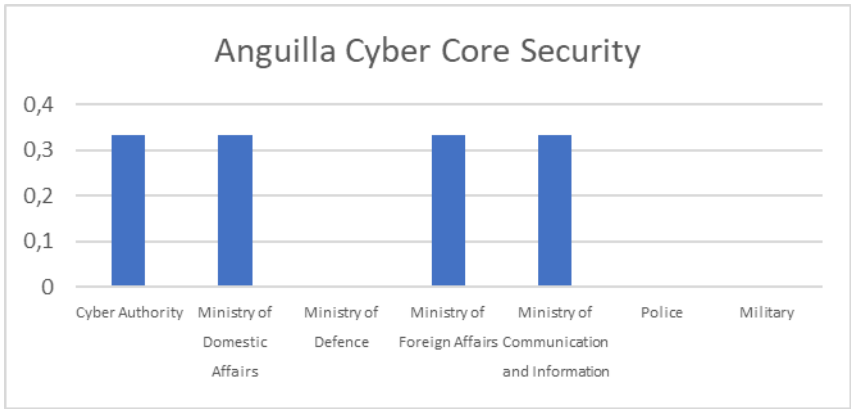
3.4. Cyber Core Security

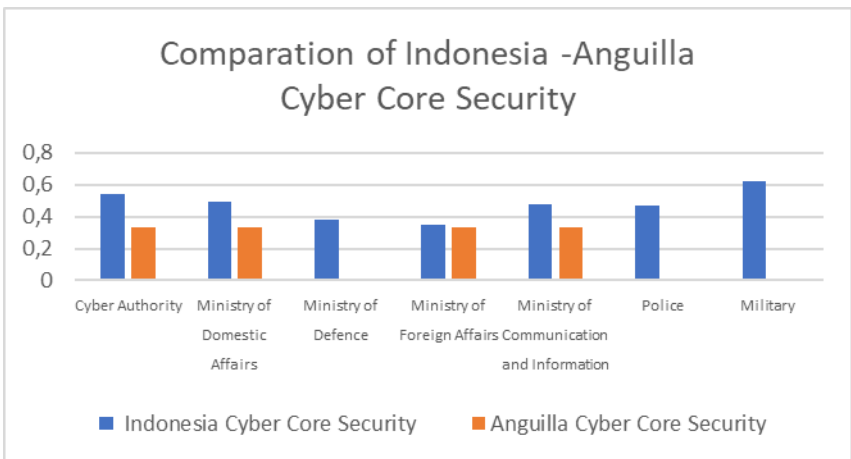
It is the core of a country in carrying out digital diplomacy and security.

3.1 Cyber Core Anguilla



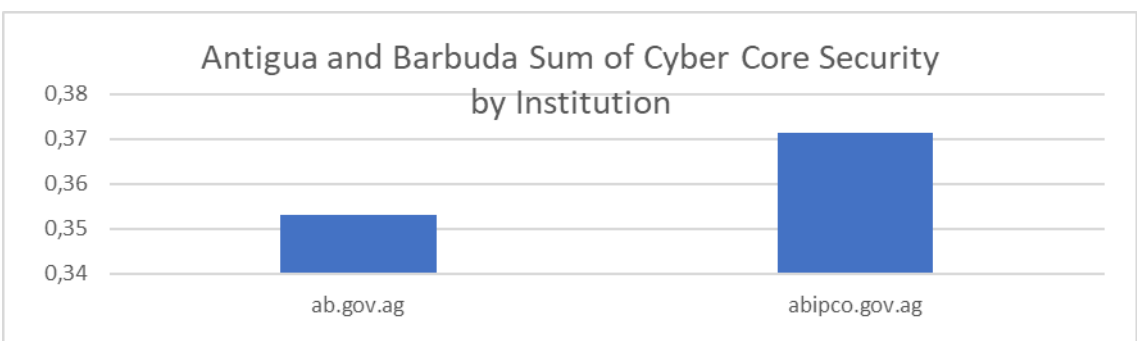
The website of the ministry which houses the country of Anguilla is only at gov.uk



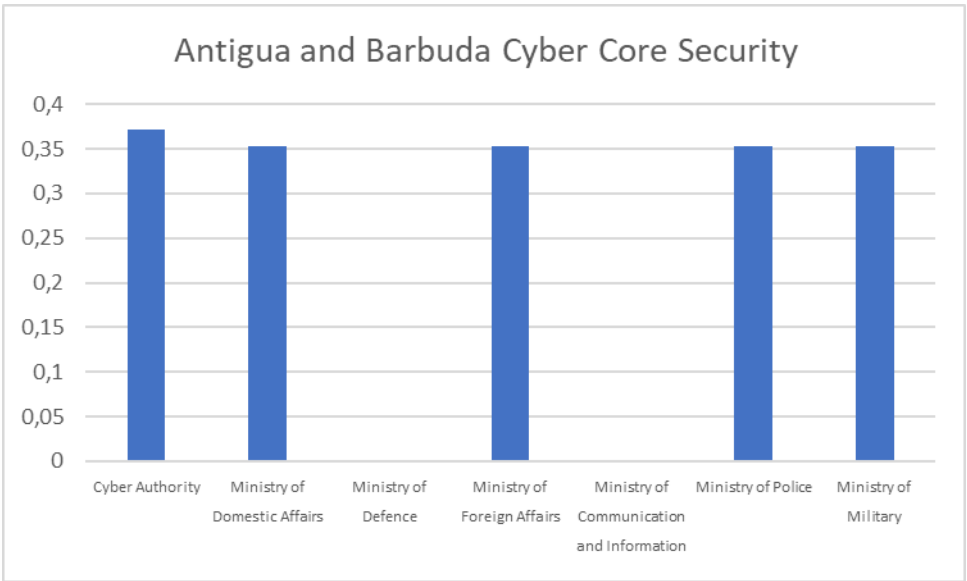


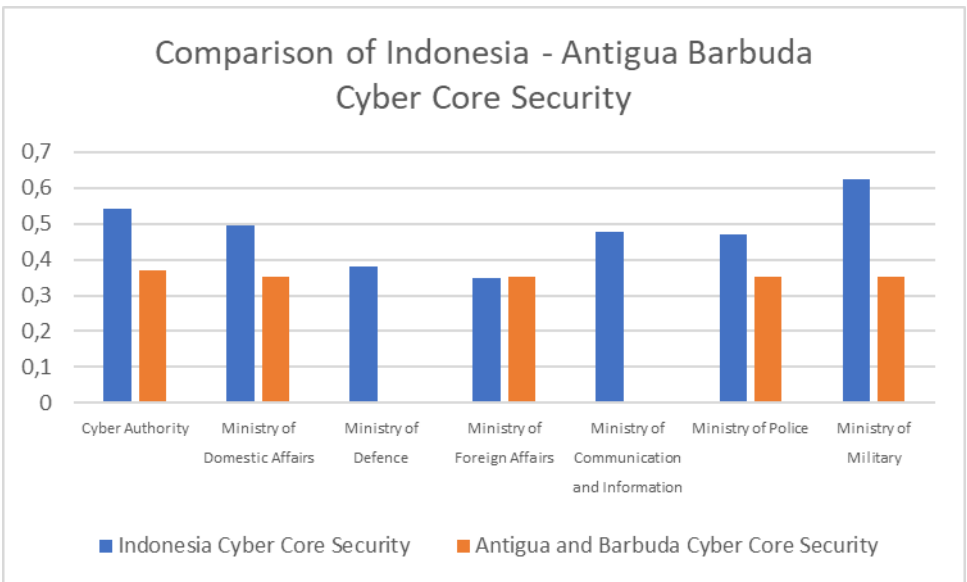
When compared with Indonesia Cyber Core Security Indonesia is superior as in the chart above.

3. 4. 2. Cyber Core Antigua and Barbuda



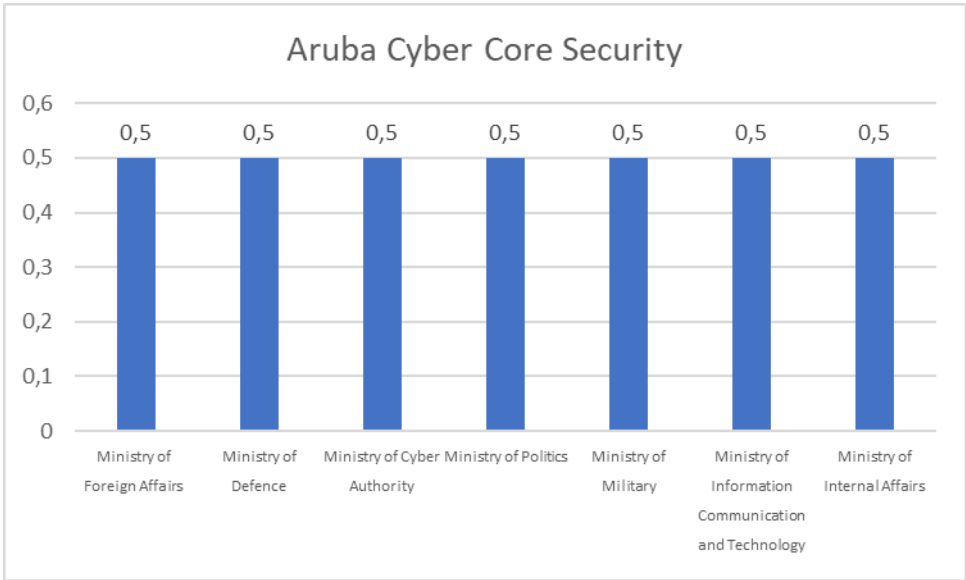
For Antigua and Barbuda cyber cores, the Cyber Core Security Institute is only on the website ab.gov.ag which shows the ministries of the Ministry of Home Affairs, Ministry of Foreign Affairs, Military and Police. As for the website address abipco.gov.ag on the Cyber Authority.



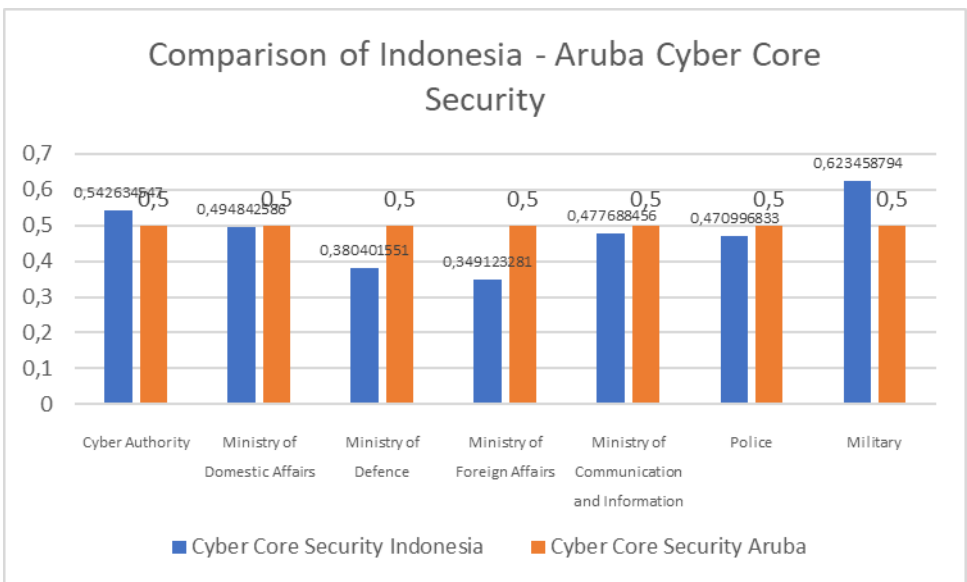


Just like the previous countries, Indonesia has superior cyber-core security compared to Antigua and Barbuda.

3. 4. 3. Cyber Core Aruba

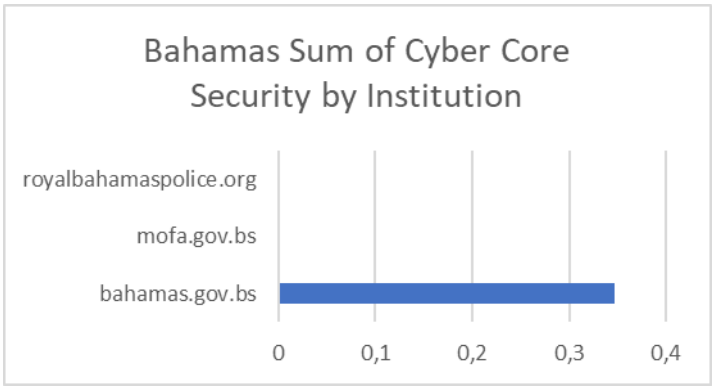


The value of cyber core per state institution Aruba has the same value, namely 0.5.

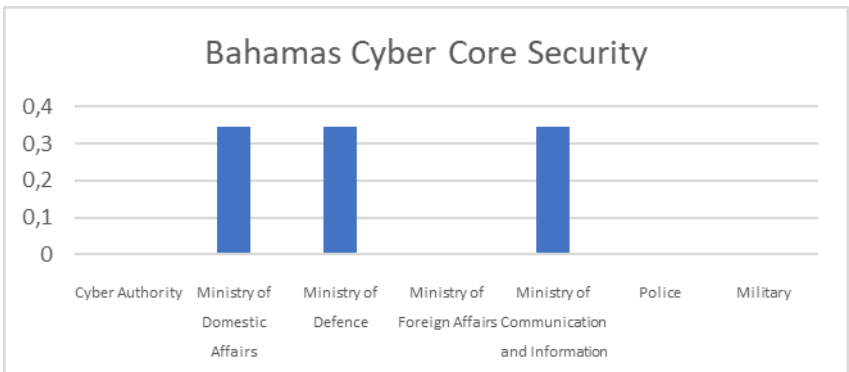


When compared to the Indonesian state, Aruba's core security per institution is superior to that of Indonesia because it leads the defense ministry, the foreign ministry, the communications and information ministry, and the police.

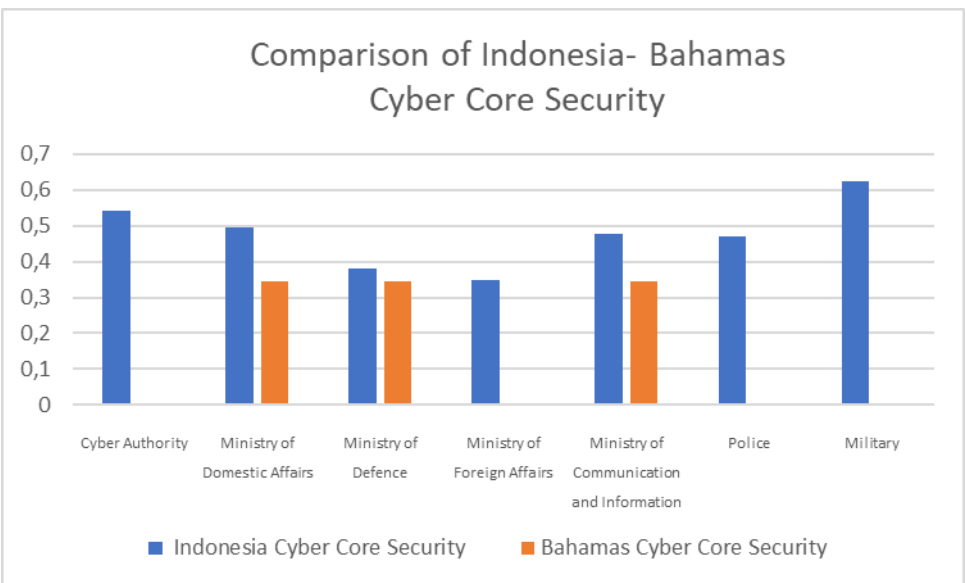
3. 4. 4. Cyber Core Bahamas



Bahamas core state cybersecurity per institution can only be found on the website bahamas.gov.bs, which represents the Bahamas in the ministries of interior, defense and information communications.

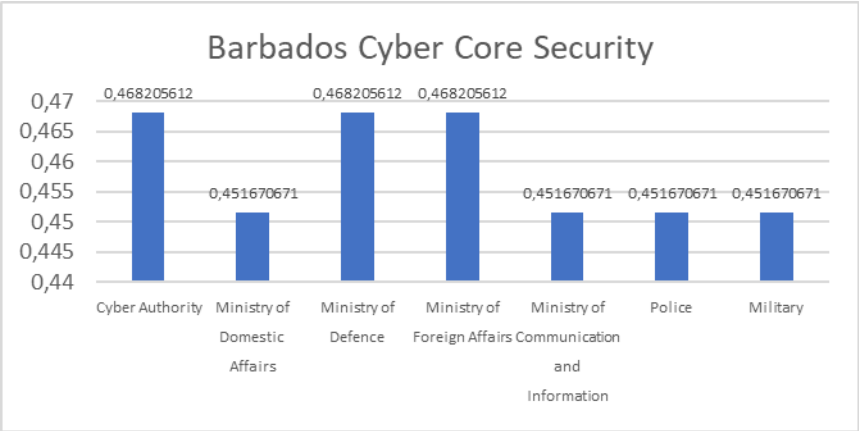


The value contained in cyber core security lies in the ministries of interior, defense, and ministries of information and communication. If compared with Indonesia it has the following values:

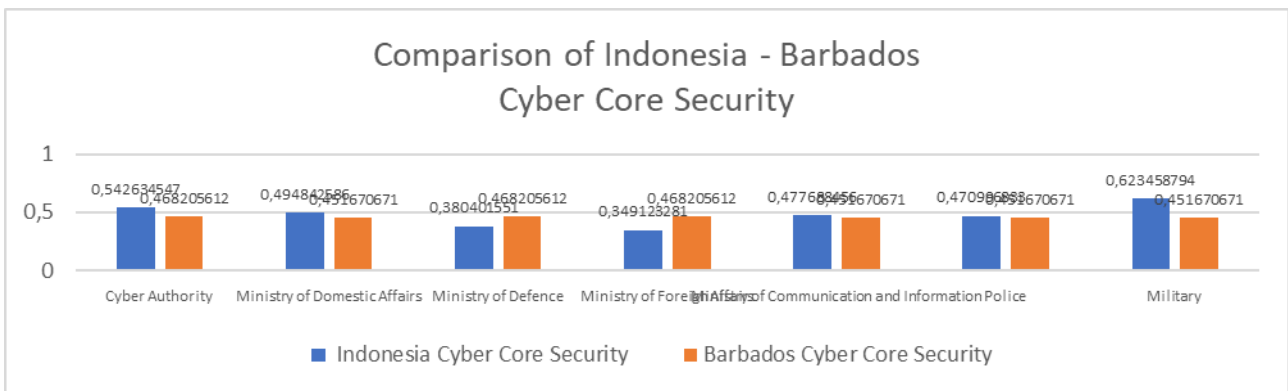


Indonesia is superior to any country in terms of its core cyber security, seen from all institutions.

3. 4. 5. Cyber Core Barbados

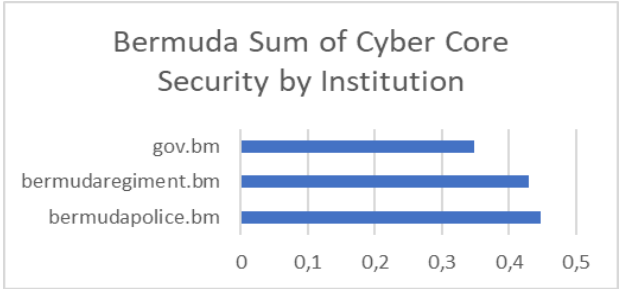


Cyber Core Security in the country of Barbados has the highest score of only 0.4682 which is owned by cyber institutions, the ministry of defense, and the ministry of foreign affairs. Meanwhile, the lower value of 0.4516 is owned by domestic, communication, police, and military institutions.

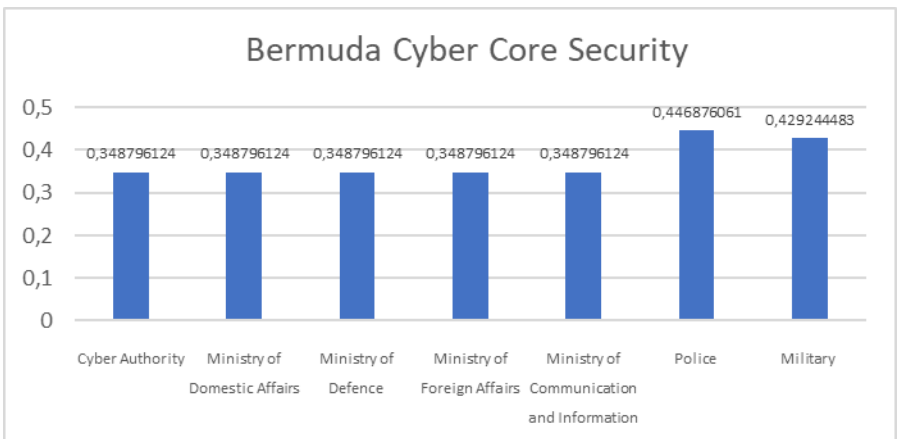


When compared with the country of Barbados, Indonesia's Cyber Core Security is superior as in the chart above, namely at the Cyber Authority, Ministry of Domestic Affairs, Ministry of Communication and Information and the military (5 institutions). Meanwhile, for the other 2 institutions, such as the ministry of defense and foreign affairs, the cyber core security of Barbados is superior.

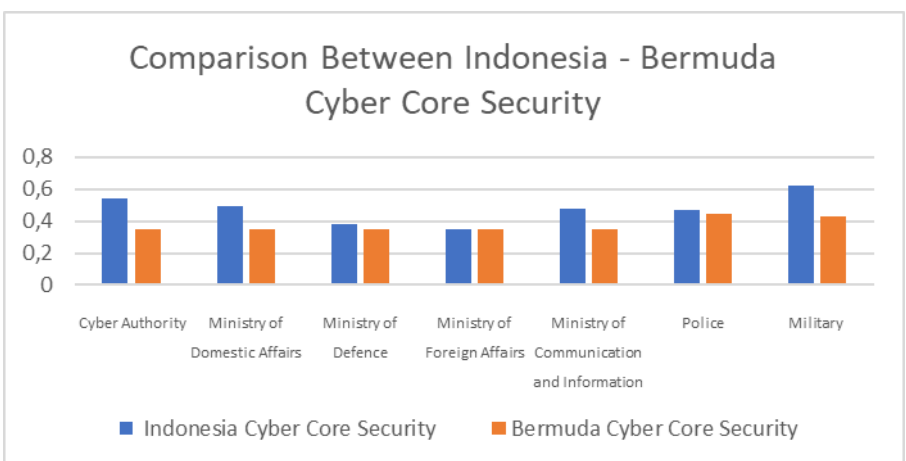
3. 4. 6. Cyber Core Bermuda



The institutions that are the core of state cyber security per state institution are on the gov.bm institute website, namely the cyber authority institution, the ministry of home and foreign affairs, the ministry of defense, and the ministry of communication. Then on the website address bermuda regiment.bm there is a military institution, the last site is bermudapolice.bm for police institutions in the country of Bermuda.

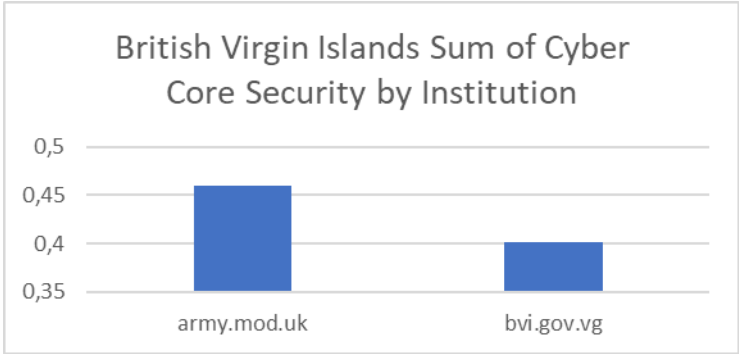


The police institution has the highest score in the youth country with a figure of 1.44687.

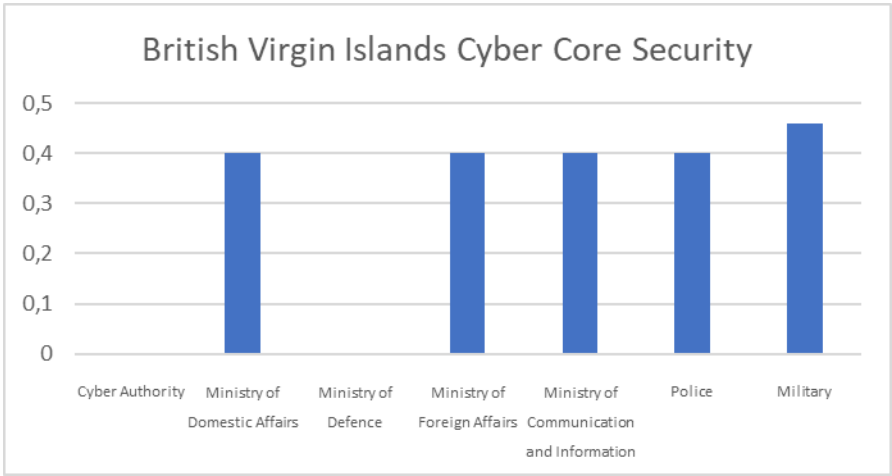


If it is compared with the country of Indonesia, Indonesia's Cyber Core Security is superior to be seen from all the institutions that are grouped.

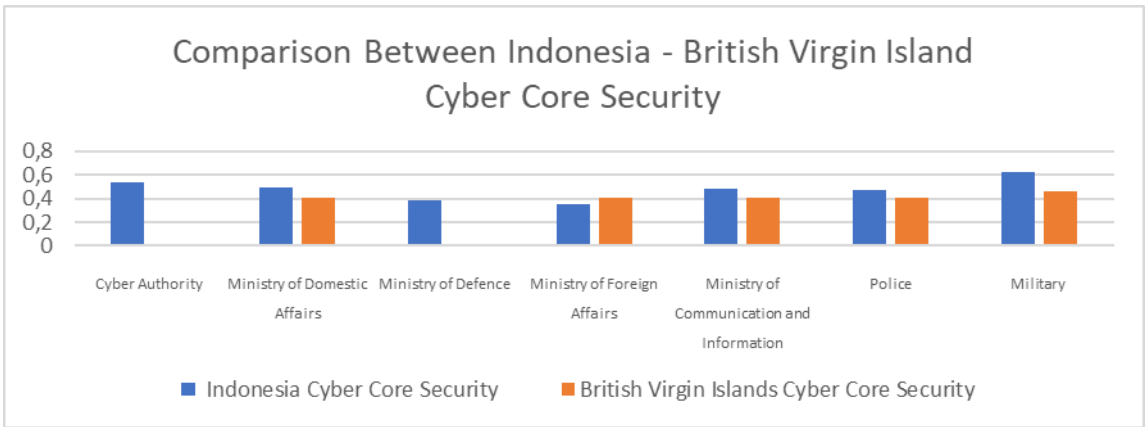
3. 4. 7. Cyber Core British Virgin Islands



Cyber Core in the British Virgin Islands, the average institution is on the website address army.mod.uk which shows military institutions and also on the bvi.gov.vg site which shows the ministries of interior, foreign affairs, communications, and the police.

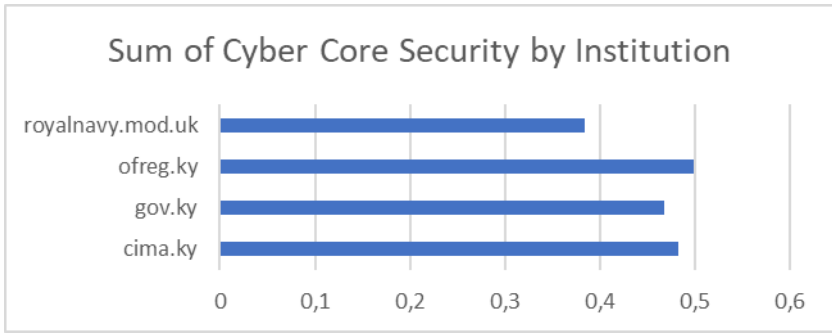


British Virgin Islands state cybercore security institutions exist in domestic, foreign, communications and information, police, and military institutions.

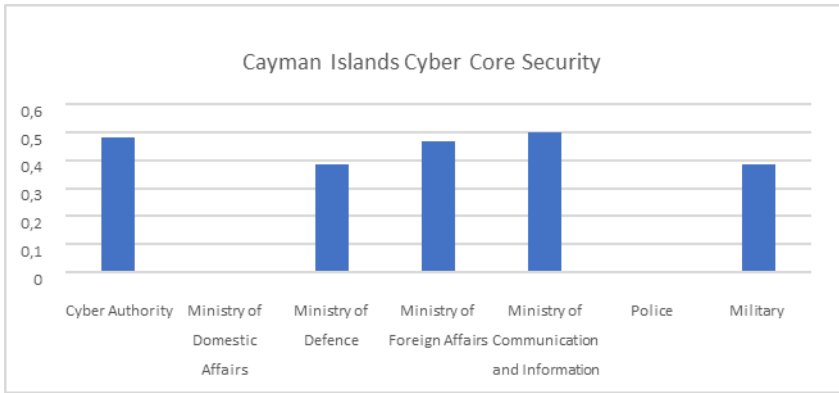


When compared with Indonesia, the British Virgin Islands only outperformed Indonesia in the ministry of foreign affairs. Apart from these institutions, Indonesia is superior.

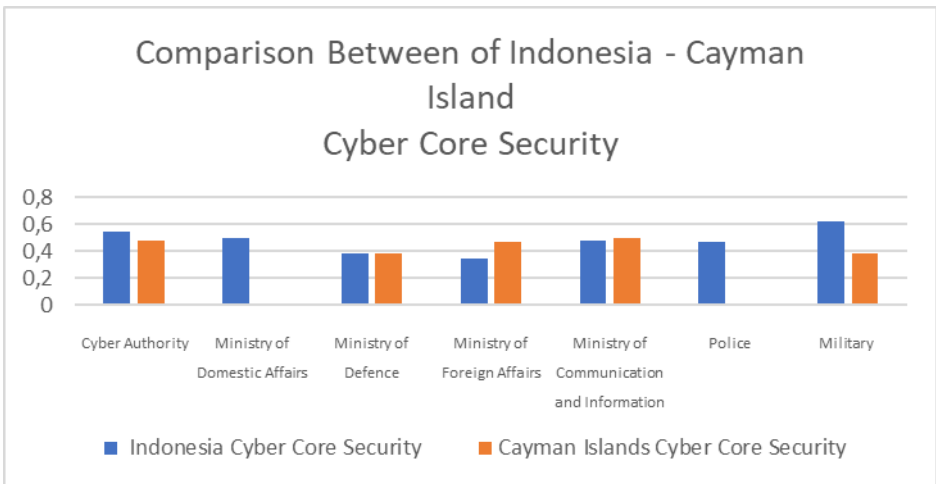
3. 4. 8. Cyber Core Cayman Islands



For the cyber core of the Cayman Islands country, the total and average results per institution are only on four websites, namely royalnavy.mod.uk, ofreg.ky, gov.ky, and cima.ky.

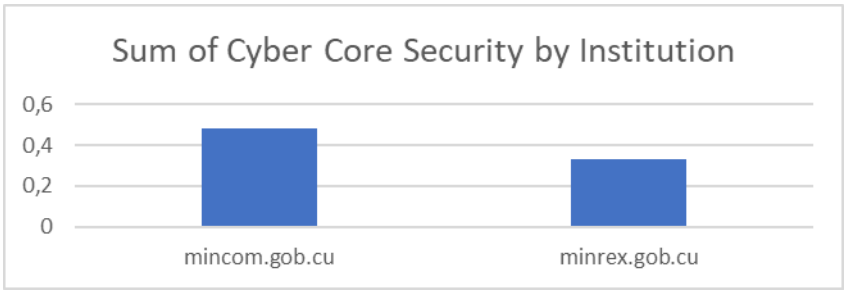


Overall, the Cayman Island Cyber Core Security relates to the sites listed on the previous chart, namely royalnavy.mod.uk for the military ministry, ofreg.ky for the ministry of communication, gov.ky for the ministry of foreign affairs, and cima.ky for cyber authority.

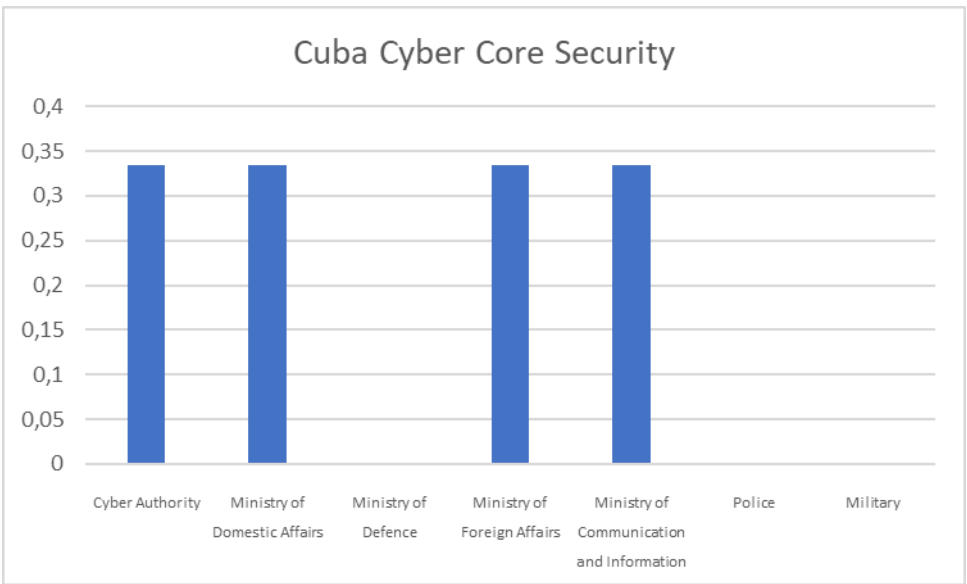


For comparison between Indonesia and Cayman Island, Cyber Core Security Cayman Islands excels only at the ministry of foreign affairs and the ministry of communications. So it can be said that Indonesia has better cyber core security than the Cayman Island countries.

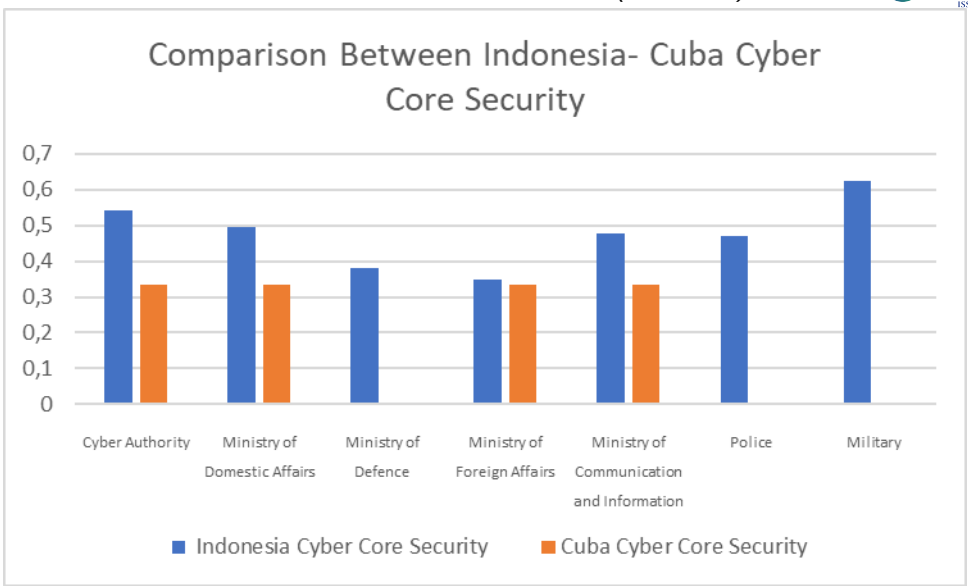
3. 4. 9. Cyber Core Cuba



When viewed from the average number per Cuban state institution, two website addresses appear, namely mincom.gob.cu and minrex.gob.cu. With a detailed description of the related institutions as in the chart below:

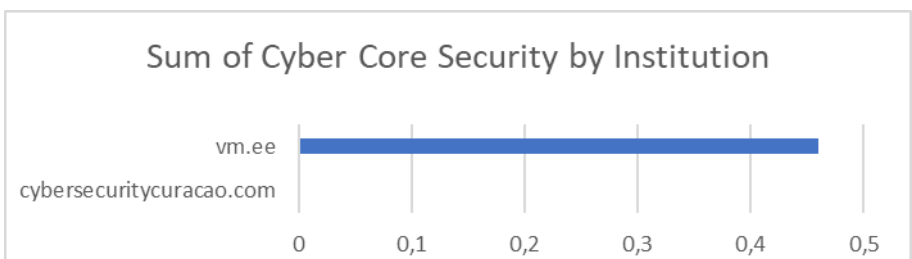


The mincom.gob.cu website contains cyber authority institutions and the ministry of communication. Meanwhile, minrex.gob.cu is in the ministry of home and foreign affairs.

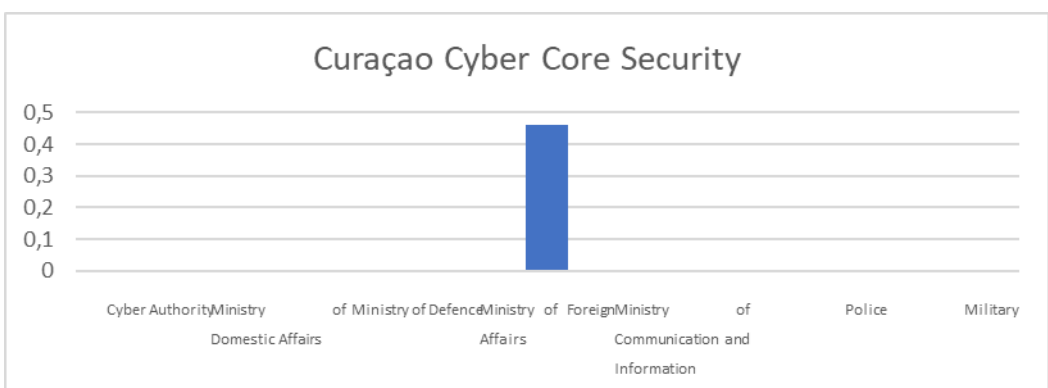


When compared to Indonesia, Cuba does not outperform Indonesia from all institutions, so it can be said that Indonesia is superior to other countries trying in its cyber core security.

3. 4. 10. Cyber Core Security Curaçao



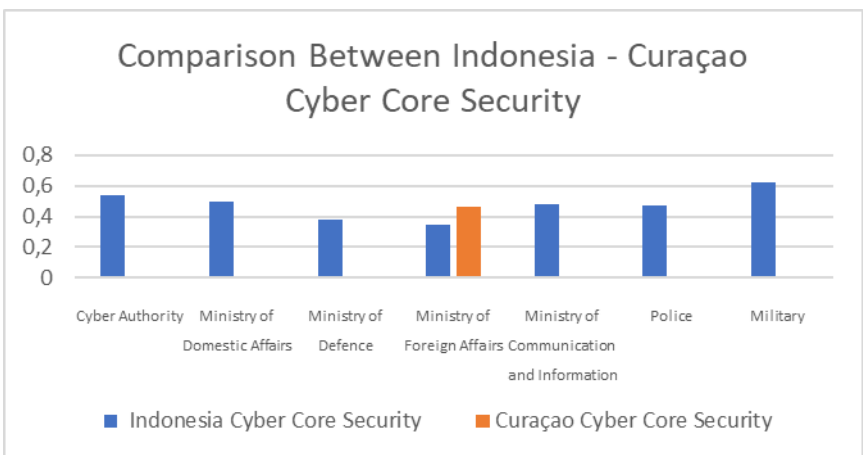
In the country of Curaçao, the average list of cyber cores is on the vm.ee site, which is the site of Curaçao's foreign ministries. As in the chart shown below.



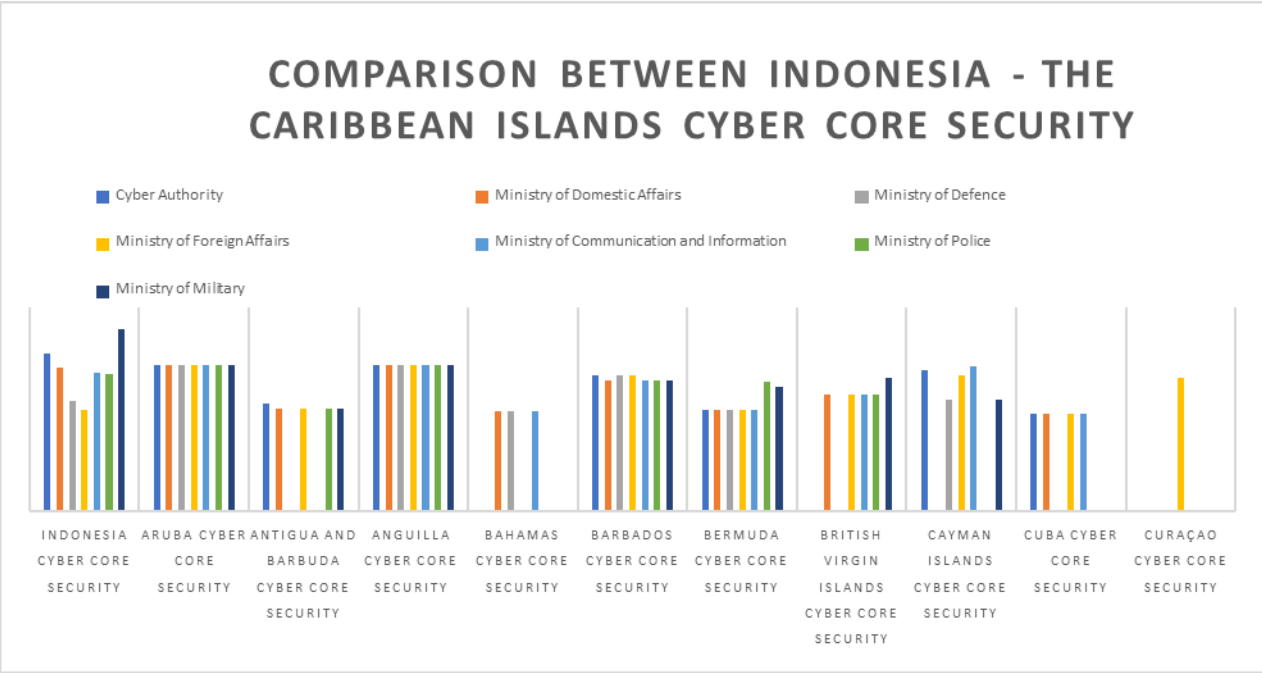
When compared with the Indonesian state, Curaçao only excels in foreign ministerial institutions. Meanwhile, for the other six institutions, Indonesia which has values so that the one that is superior in cyber core security is the Indonesian state.

States	Cyber Core Security
Indonesia	0,477020864
Anguilla	0,5
Antigua and Barbuda	0,254827901
Aruba	0,5
Bahamas	0,148376845
Barbados	0,458757075
Bermuda	0,374300166
British Virgin Islands	0,295294809
Cayman Islands	0,31672763
Cuba	0,190874503
Curaçao	0,065714286

If analyzed per country, from the ten countries of The Caribbean Islands, the order of the highest cyber core security can be analyzed from the table and chart below:



The first countries are Anguilla, Aruba, Indonesia, Barbados, Bermuda, Cayman Island, British Virgin Islands, Antigua and Barbuda, Cuba, Bahamas, and the smallest country is Curaçao.



3. 5. Cyber Sovereignty

Cyber sovereignty in a country is a government policy to control internet access including political, economic, cultural and technological activities. According to Yao Heli (Yeli, 2018), the sovereignty of a country is divided into three perspectives symbolized by a triangle, namely infrastructure, application, and core by treating differently at each level. These three perspectives are born from the existence of two characteristics of sovereignty, namely exclusive and transfer.

Basically, traditional sovereignty is exclusive, where a sovereignty and its policies can only be exercised by the state. In contrast to transfers, where sovereignty is exercised by a country by sharing technology and cyber security in the form of cooperation. Each country must carefully determine and decide what elements of sovereignty should be preserved and to what extent should be transferred.

The relationship with cyber defense carried out by a country is described at each level, such as the lowest is infrastructure which represents cyber infrastructure. The key at this level is pursuing standardization in global, cyberspace and interconnectivity. At this level, the state must be willing to collectively transfer authority for the sake of standardization and interconnectivity. Countries with well-developed cyberspace capacities should take the initiative to expand standardization and connectivity to underprivileged countries while developed countries must export their achievements to developing countries to bridge the digital divide.

Furthermore, at the middle level is the application level which includes many platforms and internet operators in the real world that have integrated various sectors such as technology, culture, economy, trade, and other aspects of daily life. At this level, the degree of cyber sovereignty must be adjusted to local conditions which aim to achieve a dynamic balance, multilateral, multi-party joint administration, and a balance between freedom and order.

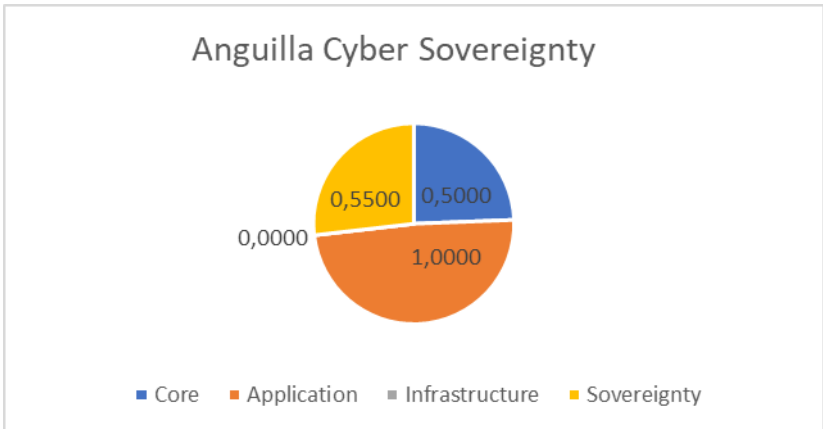
Meanwhile, those at the highest level are the core level. This level comprises the unmatched regime, law, political security and ideology that governs and realizes the core interests of the state. At the middle and lower levels of the triangle, cyber sovereignty can be transferred to a certain level that allows more stakeholders to participate then at the top level, the emphasis is on the main role of government.

3. 5. 1. Cyber Sovereignty Anguilla

Through excel data processing, the value of each country will be obtained from the country's cyber strength. For the country of Anguilla the following data were obtained:

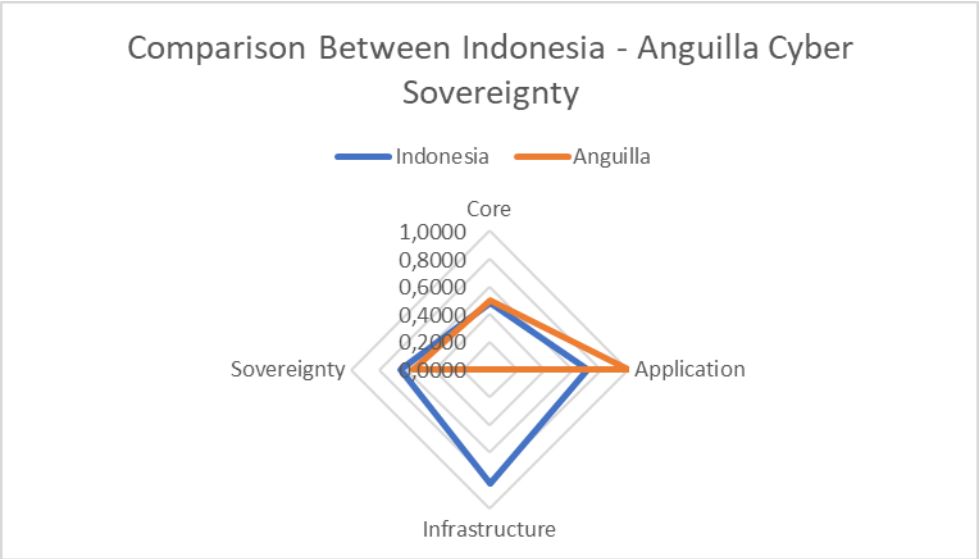
Type	Anguilla	Weight	
Core	0,5000	0,4	0,2
Application	1,0000	0,35	0,35
Infrastructure	0,0000	0,25	0
Sovereignty	0,5500		

So that if it is entered in the form of a pie chart, it will look like this:



The country of Anguilla has a sovereignty value of 0.5500. This value is the second largest value. Anguilla is superior in terms of cyber applications, then traces to cyber sovereignty, only then with a smaller portion has the lowest score in cyber core institutionally.

When compared with Indonesia, Cyber Sovereignty Indonesia is better than the country of Anguilla.

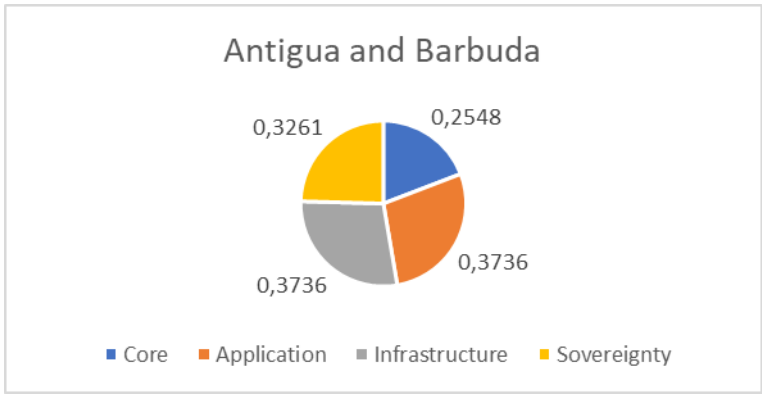


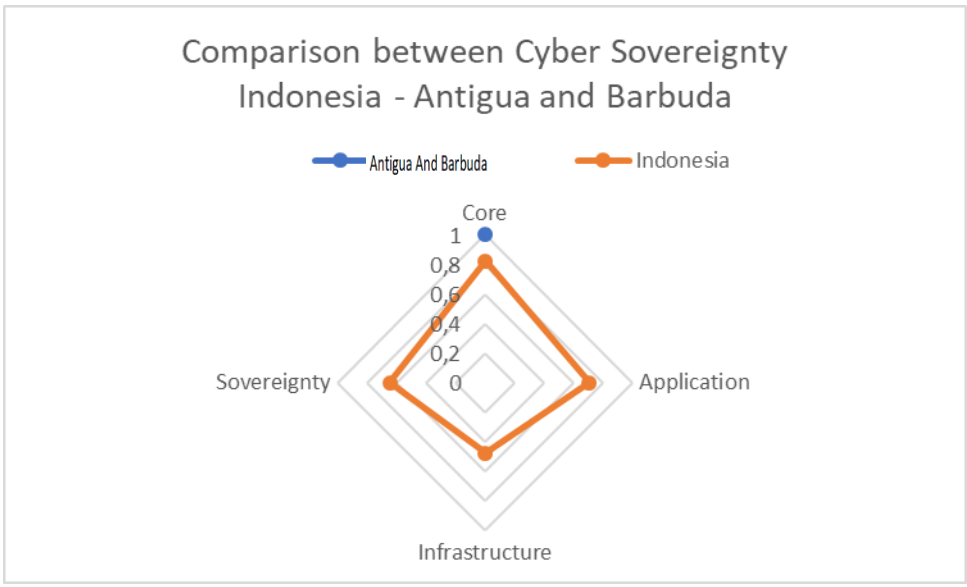
3. 5. 2. Cyber Sovereignty Antigua and Barbuda

Type	Antigua and Barbuda	Weight	
Core	0,2548	0,4	0,101931161
Application	0,3736	0,35	0,130773292
Infrastructure	0,3736	0,25	0,093409494
Sovereignty	0,3261		

Then for Antigua and Barbuda it has a sovereignty value of 0.3261. Which is the second lowest number after the cyber core. Summarized by the chart below.

The country of Antigua and Barbuda, a balanced value for cyber applications and infrastructure. So it can be said that Antigua and Berbudas are complementary in developing cyber diplomacy in their countries. But it still needs development in its cyber core.



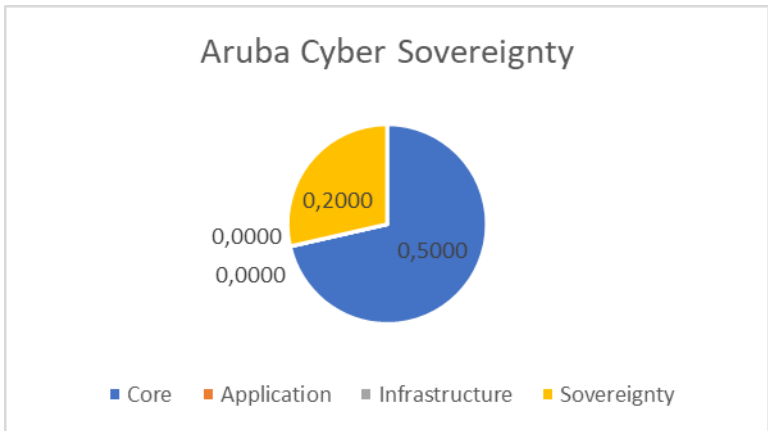


It can be seen that Indonesia's cyber sovereignty is more outreach, meaning that it has a greater value compared to Antigua and Barbuda.

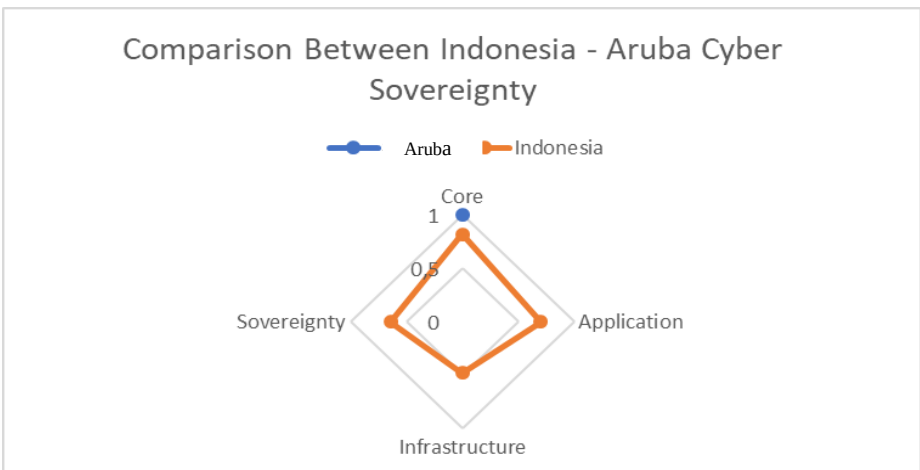
3. 5. 3. Cyber Sovereignty Aruba

Type	Aruba	Weight	
Core	0,5000	0,4	0,2
Application	0,0000	0,35	0
Infrastructure	0,0000	0,25	0
Sovereignty	0,2000		

Aruba's sovereignty value is 0.20. The second lowest score only owned by Aruba. So it can be analyzed that both the sovereignty and the core of Aruba's digital diplomacy are still lacking.



The country of Aruba appears to have a greater value on its Core and slightly less on managing its cyber applications.

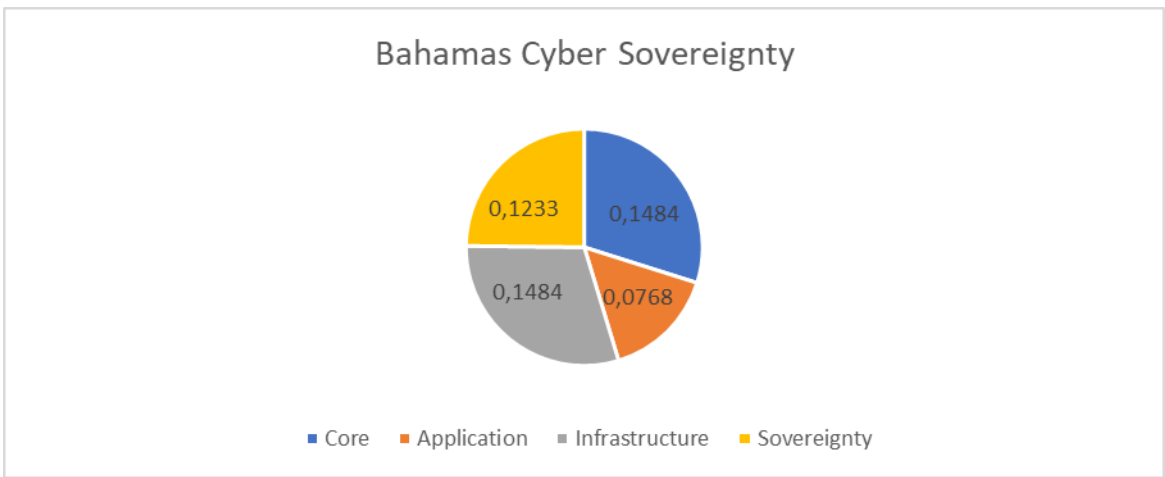


Indonesia also has advantages in cyber sovereignty compared to Aruba.

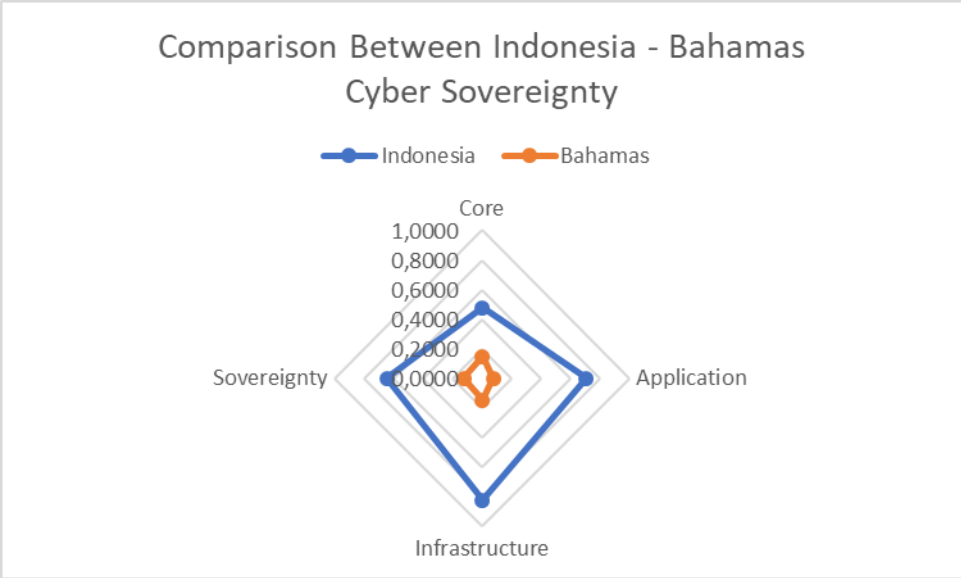
3. 5. 4. Cyber Sovereignty Bahamas

Type	Bahamas	Weight	
Core	0,1484	0,4	0,059351
Application	0,0768	0,35	0,026882
Infrastructure	0,1484	0,25	0,037094
Sovereignty	0,1233		

For calculations, the Bahamas country has a cyber sovereignty value of 0.1233. The second lowest score after the country's cyber application. As in the chart below, the Bahamas has the same value between the Core and the Infrastructure.



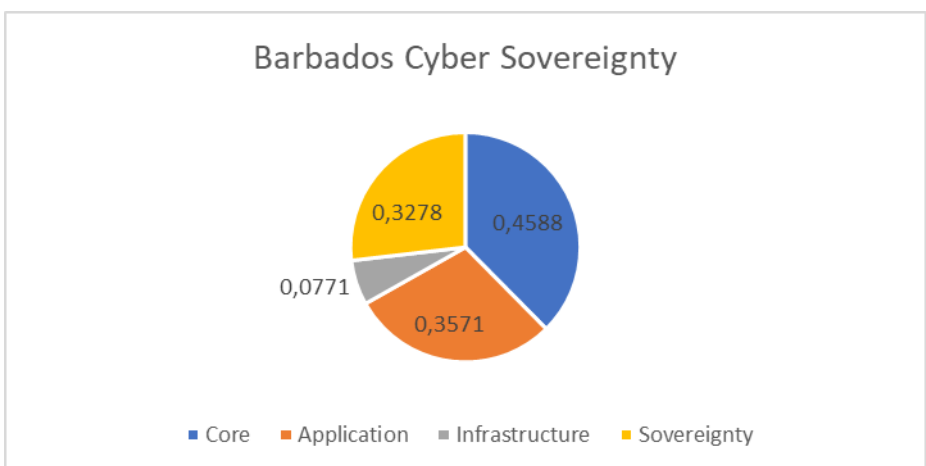
The table below is a comparative radar chart between Indonesia and the Bahamas. With the outermost line of the Indonesian state, it shows that Indonesia's cyber sovereignty is greater than that of the Bahamas



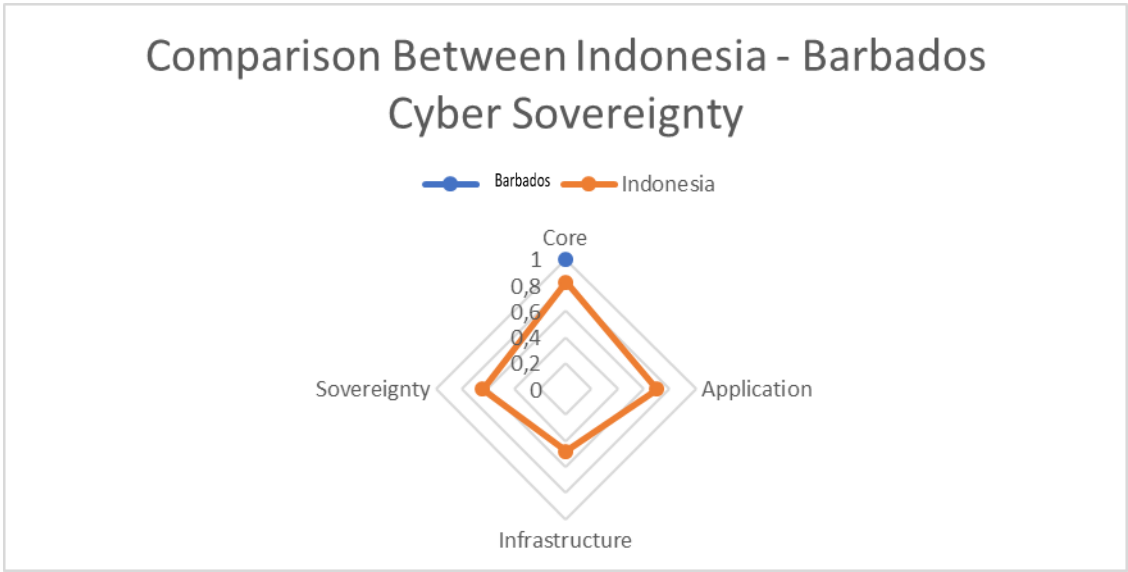
3. 5. 5. Cyber Sovereignty Barbados

Type	Barbados	Weight	
Core	0,4588	0,4	0,183503
Application	0,3571	0,35	0,125
Infrastructure	0,0771	0,25	0,019284
Sovereignty	0,3278		

In the country Barbados has a cyber sovereignty value of 0.3278. The highest value of the country of Barbados lies in its Core Sovereignty. Meanwhile, the lowest score is found in the infrastructure. It has been summarized to make it easier to see the numbers at each cyber level as in the chart below:



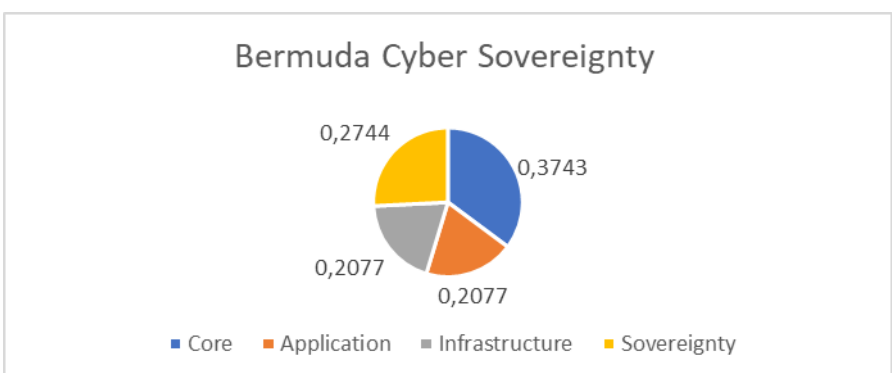
In the chart below, it can be seen that the outermost line given by the Indonesian state shows that Indonesia's cyber sovereignty is stronger than that of Barbados.



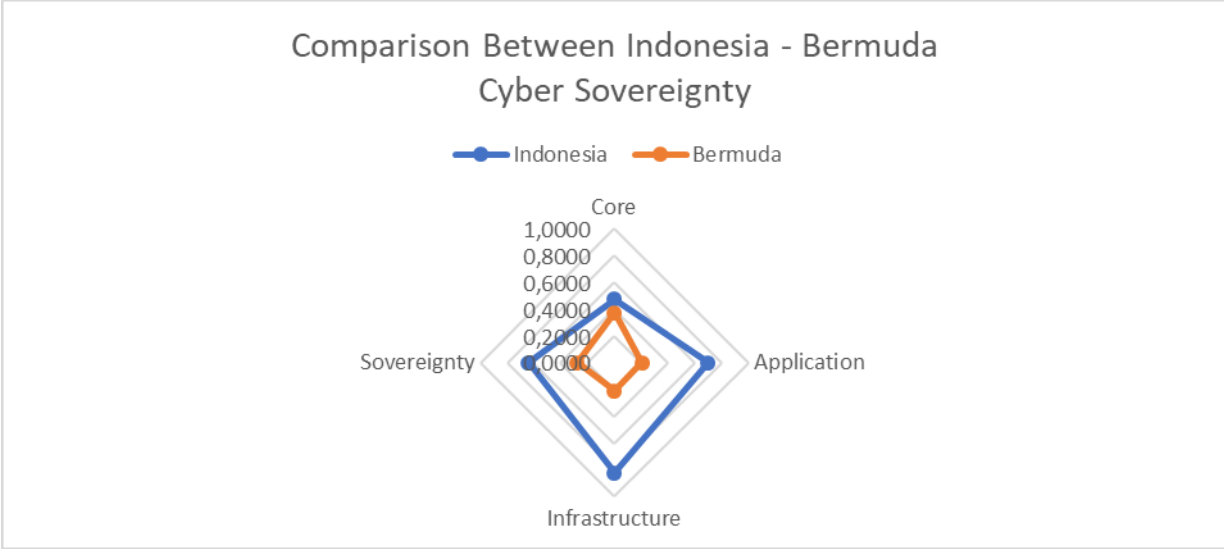
3. 5. 6. Cyber Sovereignty Bermuda

Type	Bermuda	Weight	
Core	0,3743	0,4	0,149720067
Application	0,2077	0,35	0,072710623
Infrastructure	0,2077	0,25	0,051936159
Sovereignty	0,2744		

In Bermuda, it has a sovereignty value of 0.2744. The second largest value after Core. As in the chart below, with the largest order to the smallest Bermuda countries starting from Core, Sovereignty, Application and Infrastructure (equivalent).



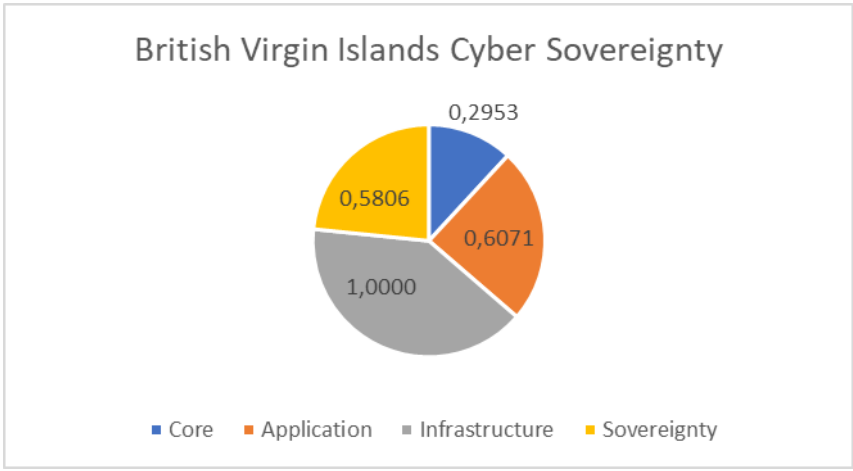
When compared to Indonesia, Bermuda lies within the Indonesian radar circle. So it can be said that Indonesia has a greater sovereignty value compared to Bermuda. Shown in the radar chart below:

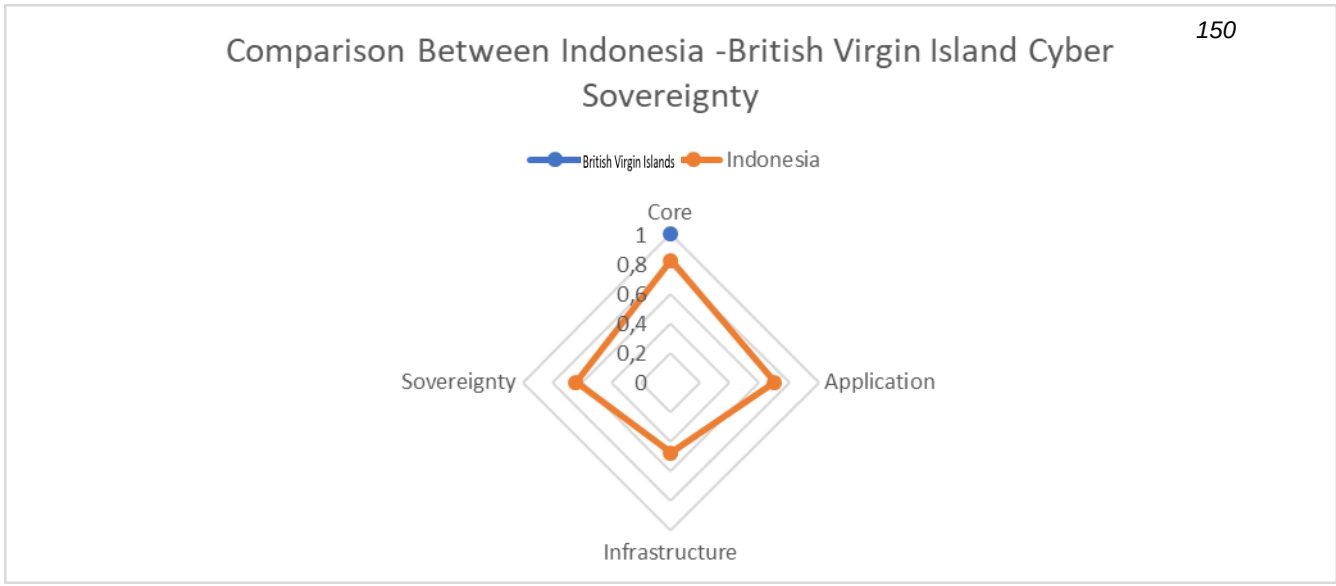


3. 5. 7. Cyber Sovereignty British Virgin Islands

Type	British Virgin Islands	Weight	
Core	0,2953	0,4	0,118117923
Application	0,6071	0,35	0,2125
Infrastructure	1,0000	0,25	0,25
Sovereignty	0,5806		

Then for the British Virgin Island, it has a sovereignty value of 0.5806. British Virgin Island scores impeccable on its cyber infrastructure. The pie chart shows the largest portion after infrastructure, namely application, sovereignty, and finally the core.



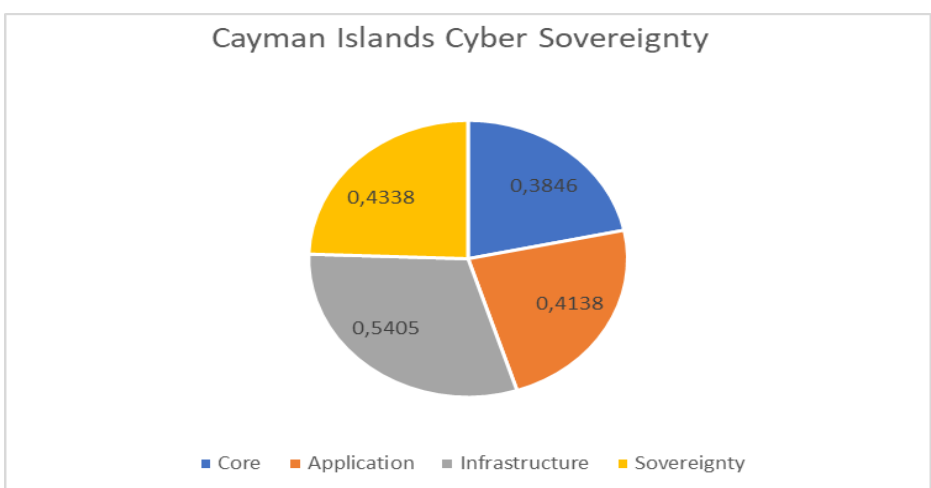


This time, it is the British Virgin Islands that have superior cyber sovereignty compared to Indonesia.

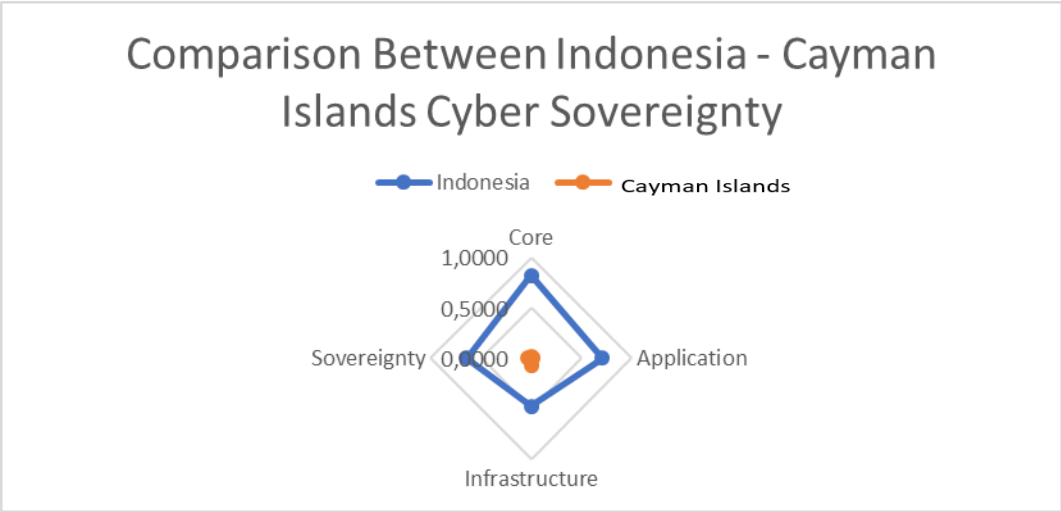
3. 5. 8. Cyber Sovereignty Cayman Islands

Type	Cayman Island	Weight	
Core	0,3846	0,4	0,153842119
Application	0,4138	0,3500	0,1448
Infrastructure	0,5405	0,2500	0,1351
Sovereignty	0,4338		

The value for the cyber sovereignty of Cayman Islands is 0.4338. Second lowest after Core. The Cayman Islands' greatest value lies in their infrastructure. This indicates that the tools used by Caymand Island in digital diplomacy have not been realized in essence from the indicators of their state institutions. Can be listened to via the chart below:



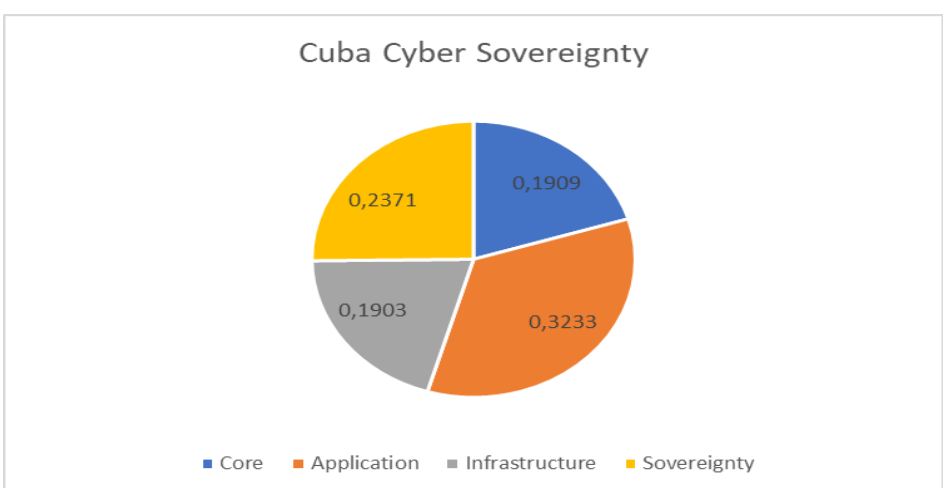
Likewise, with the comparison between Indonesia and the Cayman Islands. It can be seen that the intersection of the line chart on the infrastructure section means that even though the value of Cayman Island infrastructure is greater than that of Indonesia, overall Indonesia is still superior compared to the Cayman Island which is indicated by the coverage of the blue line covering the Cayman Islands radar line.



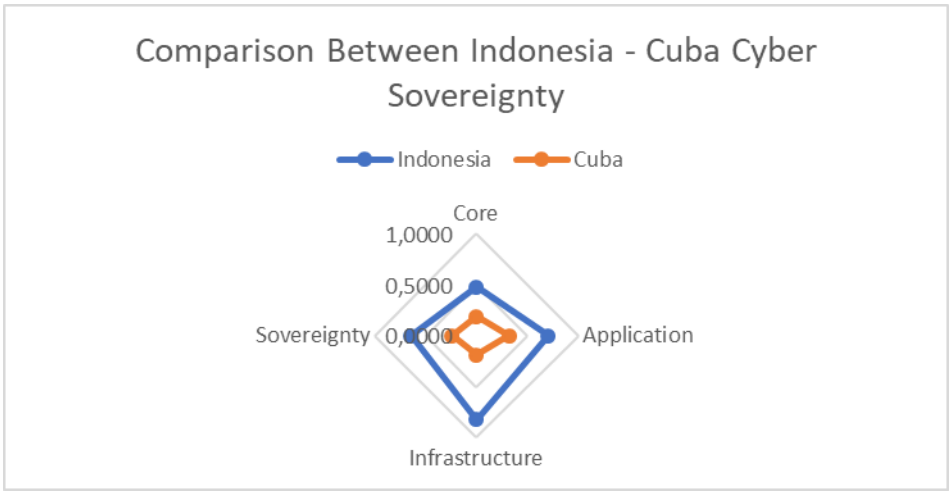
3. 5. 9. Cyber Sovereignty Cuba

Type	Cuba	Weight	
Core	0,1909	0,4	0,076349801
Application	0,3233	0,35	0,11314162
Infrastructure	0,1903	0,25	0,047567512
Sovereignty	0,2371		

For the value of the sovereignty of Cuba is 0.2371. Which is the highest value after application. As shown in the chart below:



The largest portion of the country is Cuba in its Cyber Application and the lowest in its Infrastructure. So only infrastructure is needed to support the development of cyber diplomacy in Cuba, considering that the necessary facilities are sufficient.

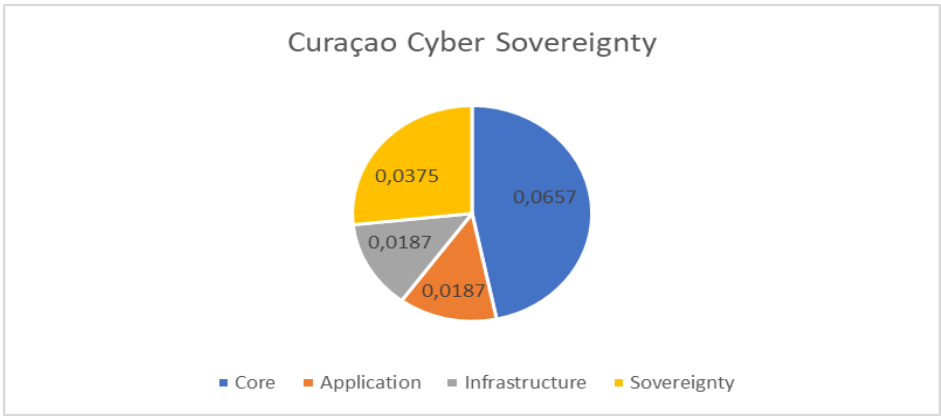


When compared with Indonesia, the Cuban state is still behind the Indonesian state in cyber sovereignty.

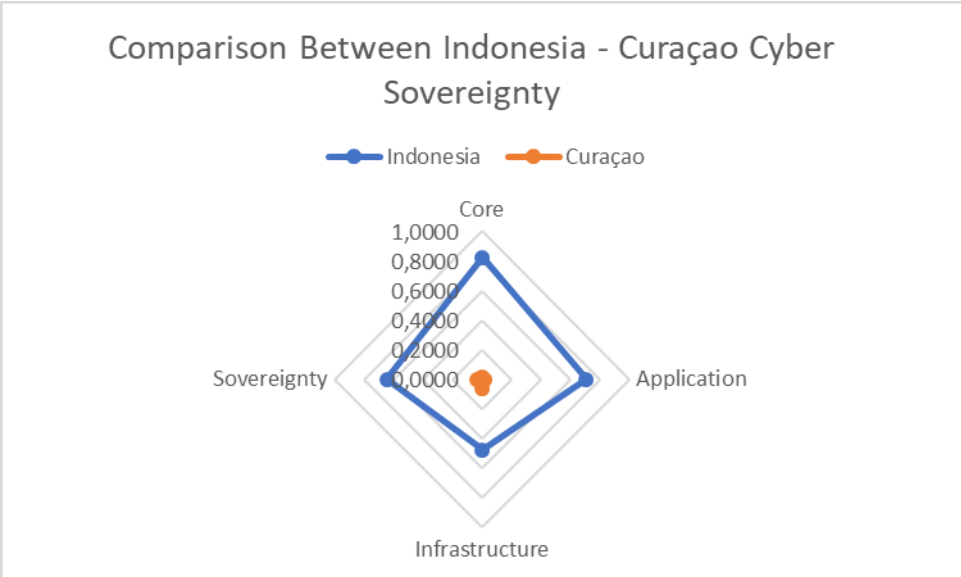
3. 5. 10. Cyber Sovereignty Curaçao

Type	Curaçao	Weight	
Core	0,0657	0,4	0,026285714
Application	0,0187	0,3500	0,0065
Infrastructure	0,0187	0,2500	0,0047
Sovereignty	0,0375		

In the Curaçao country, the sovereignty value is 0.0375. It is quite low compared to the core. As in the chart below:



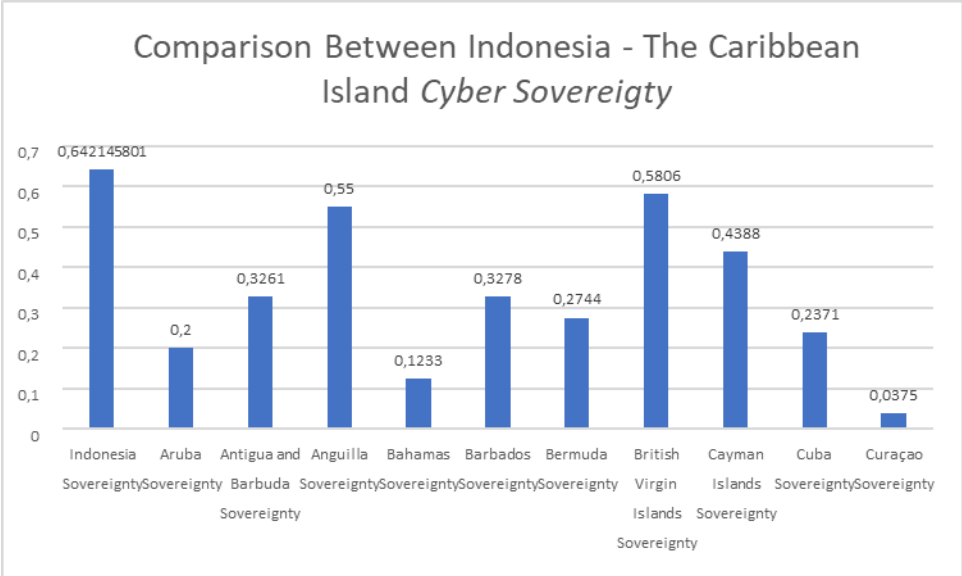
The lowest score for Curaçao lies in its infrastructure and applications. When comparing the value of Indonesia with Curaçao:



It is clear that Indonesia has a more dominant and stronger value than the Curaçao country. Therefore, Indonesia's Cyber Sovereignty strength is superior to that of the Curaçao country.

After reviewing one by one Cyber Sovereignty from Caribbean Island countries, and compared to Indonesia, the following is a brief summary of the previous explanation:

States	Cyber Sovereignty Index
Indonesia	0.642145801
Anguilla	0.55
Antigua and Barbuda	0.3261
Aruba	0.2
Bahamas	0.1233
Barbados	0.3278
Bermuda	0.2744
British Virgin Islands	0.5806
Cayman Islands	0.4388
Cuba	0.2371
Curaçao	0.03755



It can be ranked Cyber Sovereignty from strongest to weakest; Indonesia, British Virgin Islands, Anguilla, Cayman Islands, Barbados, Antigua and Barbuda, Bermuda, Cuba, Aruba, and finally Curaçao.

IV. Conclusion

After quantitatively reviewing the official twitter account data for the embassies in the Caribbean and Indonesia, then processing them in the Gephi and Excel applications to get the digital diplomacy value of a country, continuing to search for the value of Cyber Sovereignty with the addition of the Maltego application, it can be concluded as follows:

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States	Cyber Infrastructure Security Index	Cyber Application Index	Cyber Core Security Index	Cyber Sovereignty Index
Indonesia	0,8220	0,702371429	0,477020864	0.642145801
Anguilla	0,0000	0	0,5	0.55
Antigua and Barbuda	0,373637977	0,373637977	0,254827901	0.3261
Aruba	0,897435897	1	0,5	0.2
Bahamas	0,076807078	0,076807078	0,148376845	0.1233
Barbados	0,077135939	0,357142857	0,458757075	0.3278
Bermuda	0,207744636	0,207744636	0,374300166	0.2744
British Virgin Islands	1	0,607142857	0,295294809	0.5806
Cayman Islands	0,540526559	0,413841923	0,31672763	0.4388
Cuba	0,190270047	0,323261772	0,190874503	0.2371
Curaçao	0,018702108	0,018702108	0,065714286	0.03755

In carrying out digital diplomacy, the country that has the greatest strength in Cyber Infrastructure Security is the British Virgin Islands. Then the best means of digital diplomacy (Cyber Application) is the country of Aruba. Meanwhile, the strongest core state sovereignty / Cyber Core Security is Anguilla and Aruba. The highest cyber sovereignty belongs to the Indonesian state.

REFERENCES

Mike & Cross, Solange. 2020. Caribbean Diplomacy: Research on Diplomacy of Small States in http://archive1.diplomacy.edu/pool/fileInline.php?IDPool=352, accessed 03/01/2021

Dwikarna, et al. 2017. Strategic Transformation of the Era of Diplomacy in Digital: Identification of Indonesia's Digital Diplomacy Posture, in http://repository.unpar.ac.id/bitstream/handle/123456789/4719/lpdsc189_Sapta%20Dwikardana_Transformasi%20strategi%20diplomasi-p.pdf?sequence=1&isAllowed = y, accessed 03/01/2021

Cyber-diplomacy: the formation of an international community in the digital era André Barrinha & Thomas Renard cites this article: André Barrinha & Thomas Renard (2017): Cyber-diplomacy: the formation of an international community in the digital era, Global Affairs, DOI: 10.1080 / 23340460.2017.1414924

Buzan, B. (2014). An introduction to English schools for international relations: A social approach. Cambridge: Polity Press.

Bull, H. (1977/2002). The Anarchical Society: A Study of Order in World Political (3rd Edition). Basingstoke: Palgrave.

Owen, T. (2015). Disruptive power: State crisis in the digital age. Oxford: OUP.
New Reality Abroad: Diplomacy in the 21st Century - SWP Research Papers by Volker Stanzel (Ed.)

White, Brian. (2005). “Diplomacy” in Baylis, John and Steve Smith (eds.). Globalization of World Politics: Introduction to International Politics. Oxford: Oxford University Press [Chapter 17].

Gibson in the book Roy, S.L. (1995). Diplomacy. Jakarta: PT. Grafindo Raja Perkasa

Volker Stanzel (ed.) New Realities in Foreign Affairs: Diplomacy in the 21st Century
SWP Research Paper 2018 / RP 11, November 2018, 69 Inner pages https://www.swp-berlin.org/en/publication/new-realities-in-foreign-affairs-diplomacy-in-the-21st-century/

Alquran SINDO. 2018. Negara Merdeka dari Hutang, in https://ekbis.sindonews.com/berita/1273712/35/negara-merdeka-dari-utang?showpage=all, accessed 02/01/2021.

Nationsonline.org, 2021. Antigua and Barbuda, in https://www.nationsonline.org/oneworld/antigua_barbuda.htm, accessed 09/01/2021
Stewart, C. A. et al. (2010) 'What is cyber infrastructure?', Proceedings of ACM SIGUCCS User
Services Conference, p. 37–44. doi: 10.1145 / 1878335.1878347.

Yeli, H. (2018) 'A THREE-PERSPECTIVE THEORY OF CYBER SOVEREIGNTY', PRISM, (2), p. 109–115.

Britannica. 2021. Flag of Aruba. In https://www.britannica.com/topic/flag-of-Aruba, accessed 09/01/2021.

Britannica. 2021. Bahamas. In https://www.britannica.com/topic/flag-of-Aruba, accessed 09/01/2021.

Bermuda, 2019. Where is Bermuda. In https://www.bermuda.com/where-is-bermuda/, accessed 09/01/2021.

Nationsonlie, 2021. British Virgin Islands, in https://www.nationsonline.org/oneworld/virgin_islands_british.htm, accessed 09/01/2021

Global Edge, 2021. Cayman Islands: Introduction, in https://globaledge.msu.edu/countries/cayman-islands, accessed 09/01/2021

Britannica, 2021. Curaçao, in https://www.britannica.com/place/Curacao, accessed 09/01/2021