Global Cyber Troops Country Profile: Costa Rica

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Introduction

Costa Rica is one of Latin America's most stable democracies. It has a multi-party political system, holds elections every 4 years, and its media is free and independent. A small middle-income country with a population of 5 million people, it has a very high level of internet penetration (74% as of January 2020), with 73% of the population actively using social media (Kemp, 2020).

The use of social media for electoral campaign purposes first became visible in 2010. Yet, it was still in its infancy. Parties did not have broad user databases² and Facebook usership had just started growing (Global Stats, 2009). It was not until the 2014 election that presidential candidates and political parties integrated social media more prominently into their electoral communications. Nonetheless, most candidates lacked organized e-campaigning strategies (Cruz Romero, 2015). Out of the 5 main contending parties (National Liberation Party (PLN), Social Christian Union (PUSC), Citizen Action Party (PAC), Libertarian Movement (ML), and Broad Front (FA), only two (PLN and PAC) had online campaign strategies in 2014 (Cruz Romero, 2015).

PAC is a newer, largely urban-based party. Its social media userbase had grown organically, from a much younger politically active audience who were already active on social media. PLN, in turn, is a much older and traditional party. Its older and more conservative base was slow to adopt social media. Thus, the PLN had to grow and organize usership to position its agenda on social media somewhat artificially.³ Their clumsy efforts were noted with disdain during the 2014 presidential debates, when the party tasked some of their members with commenting on social media platforms to support their candidate and criticize opponents.⁴

In 2016, Bloomberg journalists revealed that imprisoned Colombian hacker, Andrés Sepúlveda, had researched the opposition in Costa Rica in early 2013 (Robertson, Riley and Willis, 2016). PLN's presidential candidate, Johnny Araya, admitted having had contacts with Miami-based political strategist Juan José Rendon, for whom Sepúlveda claimed to work. However, Araya denied hiring his firm or any of his associates during the election campaign (Cambronero, 2016). As a result of these revelations, Costa Rica's far-left FA party, whose presidential candidate, José María Villalta, was leading the polls in December 2013 and eventually placed third, accused the PLN of cyber-espionage and asked the country's electoral tribunal TSE to open an investigation. The TSE did so in 2016 but it archived the case in 2018, citing a lack of

¹ Special thanks to the insights by four anonymous interviewees, as well as two expert reviewers.

² Interview, conducted on 24.6.2020.

³ Interview, conducted on 24.6.2020.

⁴ Interview, conducted on 24.6.2020.

evidence.⁵ In this case it did not take sinister cyber troop activity to damage the credibility of Villalta.⁶ Alarmed by the polls, Costa Rica's business community openly organized under the name "Costa Rican Alliance" ("Alianza Costa Rica") to campaign against Villalta. It distributed printed material to companies that portrayed his policies as a threat to the business community, to employment, and to Costa Rica's democracy (Agüero, 2014).

Yet, by 2018 social media had become both an important strategic platform "to launch attacks and spread false information" during the election of that year (OAS, 2018), but also to oppose reforms by the incoming government and polarize society. This report analyzes "cyber troop" activity in Costa Rica since 2018. Following Bradshaw and Howard's (2017; 2018) definition, "cyber troops" are "government or political party actors tasked with manipulating public opinion online". The case study here examines the organizational form, strategies, and tools at the disposal of cyber troops for spreading false information online, and seeks to analyze the capacity and resources invested in online manipulation. It argues that Costa Rican cyber troops are homegrown and homemade, and that various political parties, civil society organizations and individuals have been implicated in spreading disinformation deliberately during election campaigns, promoting anti-establishment populist, homophobic, and xenophobic discourses. However, it also argues that, thus far, cyber troops in Costa Rica have lacked the level of sophistication we have seen in Brazil, Mexico, or Colombia.

Facebook and Twitter have been the most prominent platforms for sharing disinformation. Human trolls are visible on both platforms, but the use of automated bots, cyborgs, hacked or stolen accounts, or the type of targeted advertising observed during the Cambridge Analytica scandal is still very limited. More recently, attempts by political actors to disinform have moved to the personal messaging system WhatsApp. This is alarming because it makes it much more difficult to uncover systematic political disinformation. Despite watchdogs created by the government and by private actors, as well as efforts by the TSE to stem systematic disinformation, the small size of the country, its high internet penetration and use of social media, combined with weak institutional cybersecurity systems, a low awareness of privacy risks, and widespread digital illiteracy create a fertile ground for the "professionalization" of cyber troop activity ahead of the 2022 elections.

An Overview of Cyber Troop Activity in Costa Rica

Organizational Form

Cyber troop activity in Costa Rica is largely of domestic origin. Various politicians and political parties have been implicated in cyber troop activity. During presidential election campaigns, political parties and their presidential candidates hire national or foreign private contractors, strategists and digital marketing agencies to manage their online campaign rhetoric. Cyber troop activity became particularly visible during the

 $^{^{5}}$ TSE DFPP-EE-RA-001/2018. The TSE did not find any PLN campaign expenses linked to Sepúlveda or a contract.

⁶ Interview, conducted on 25.6.2020.

⁷ Interview, conducted on 23.6.2020.

2018 election campaign but continued in fierce opposition to the incoming government's fiscal and civil service reforms. Cyber troops have also involved civil society organizations and leaders. The analysis that follows provides key examples of how these different actors have tried to mislead Costa Rican citizens.

Political Parties and Their Presidential Candidates

The most visible attempts to manipulate public opinion using social media have been pursued by conservative politicians from parties which have not yet held executive power in Costa Rica: the far-right National Integration Party (PIN) and the religious-right parties called National Restauration Party (PRN) and New Republic (NR).

PIN's presidential candidate and former security minister Juan Diego Castro – an avid Facebook, Twitter and YouTube user – has been dubbed a "Trump in the Tropics" (Grosser, 2018) due to his populist discourse, media appearances, and social media attacks on the integrity of Costa Rica's electoral process.⁸ The latter included sharing numerous messages, misleading photos and videos via Facebook and Twitter stating that he had pressed legal charges against the TSE, alleging that it was permitting electoral fraud (Madrigal, 2017). One of his widely shared false conspiracy theories involved a quid pro quo between the PLN and TSE's president Luis Antonio Sobrado, such that the PLN's presidential candidate, Antonio Alvarez Desantí, would win the election and allow his campaign to be financed by Honduran drug money, in exchange for a reform that would be passed by the PLN in parliament that would grant Sobrado a monthly luxury pension of over USD 17,000 (Chinchilla Cerdas and Oviedo, 2018). While pension reform was indeed underway in parliament, it did not contain such a provision.⁹ Neither did the TSE receive any legal complaint about illegal campaign financing of the PLN, as claimed by Castro.¹⁰

The PRN and the NR represent Costa Rica's evangelical community but have also attracted conservative catholic voters. The PRN rose to prominence over its opposition to same-sex marriage, an issue that dominated the 2018 election campaign after the unfortunate, politicized timing of an opinion issued by the Interamerican Court of Human Rights in November 2017 and published in January 2018 (Interamerican Court of Human Rights, 2017). It stated that all rights extended to heterosexual couples should be extended to gay couples. This led to heightened aggression in the campaign rhetoric and a highly polarized political debate which "[eclipsed] all discussion of the parties' manifestos as a whole".¹¹

The most prominent case of cyber troop activity linked to the PRN's presidential candidate Fabricio Alvarado, his campaign manager Juan Carlos Campos, and the private political consulting firm Opol Consultores, was the publication of six unrepresentative polls ahead of the runoff presidential election on Opol's media outlet elmundo.cr. Seeking to influence the second round of voting, the polls had been commissioned by the PRN campaign and positioned Fabricio Alvarado consistently

⁸ Juan Diego was not the only one who has attacked the TSE over the years. While overall public confidence in Costa Rica's Electoral Tribunal has remained high, it did fall from 59.4% in 2006 (Latinobarómetro, 2006) to 46.4% in 2017 (Latinobarómetro, 2017) before recovering to 56% in 2018 (Latinobarómetro, 2018).

 $^{^{\}rm 9}$ In fact, the reform intended to reduce public spending.

 $^{^{10}}$ Juan Diego Castro was leading in a poll conducted by the University of Costa Rica in December 2017 but placed 5^{th} in the February 2018 elections.

¹¹ OAS (2018).

between 10 and 15 points ahead (Cambronero, 2018). Alvarado and the PRN shared these polls widely on Facebook and sent audios and videos of the poll results to the Costa Rican press, giving the impression that these were independent polls by a non-partisan polling company.

The publication of a seventh poll was interrupted, as Opol complained about threats by PAC supporters who questioned the company's independence. A month after the election, Opol revealed the link between the misleading polls and Fabricio Alvarado to the TSE, because the PRN refused to pay an invoice of USD 31,200 for the polls. The case sparked a debate in the country about reforming its electoral laws to ensure transparency in relation to the origin and financing of polls.¹²

A second scandal linked to the PRN's electoral campaign involved the obtaining of access to 3.9 million mobile phones (44% of all active mobile lines in Costa Rica) for political propaganda purposes ahead of the run-off presidential election. As such, the party illegally obtained private data from 2.5 million voters (76% of all eligible voters in the country) (Arias Retana, 2019b). An investigation by Costa Rica's leading daily newspaper, La Nación, established that the PRN sent 6.4 million text messages between March 14 and 24 with 12 different campaign adds (Arias Retana, 2019b) depending on age, gender and voting location without the required legal consent by the recipients. The biggest activity was registered on the day of a televised presidential debate, when the PRN sent 2 million messages (Arias Retana, 2019b). According to records from the TSE, the USD 230,000 service was provided by ADD Integral Solution¹³ who, in turn, subcontracted Tecnologías SMS del Este. The PRN paid another USD 35,000 to ADD Integral Solution for a voter market analysis (Arias Retana, 2019). While this incident involved campaign adds, all messages directed voters to Fabricio Alvarado's Facebook page which contained the questionable polls mentioned above. It also shows that both political parties and private companies have ignored existing legal requirements in their digital advertising efforts, with companies being prohibited from selling private data bases in Costa Rica.

Cyber troop activity in Costa Rica has been higher in election periods, and most false news during the 2018 campaign focused on corruption and religion (Hidalgo, 2019). However, it did not cease after the election. Cyber troop activity has continued to focus on polarizing public opinion on diversity and inclusion issues, has focused on boycotting government reforms, and has followed an anti-immigrant discourse.

One of the most investigated cases was a scandal directedly linked to the NR, a party that was founded by Fabricio Alvarado after breaking away from the NPR in October 2018. The NR (although not officially recognized as a party by Costa Rica's Parliament) currently has six representatives in the legislature. They include Jonathan Prendas, whose brother Francisco Prendas became the president of the party. The scandal concerned the false claim published on the webpage diariolacarta.com (owned by Francisco Prenda's communication firm OBS and founded in May 2019)

¹² Pre-election polls are important in Costa Rica for two reasons. First, the amount of state funding that political parties receive after elections depends on their electoral results. This means that banks decide how much money to lend to a campaign and how much interest to charge them based on pre-election polls. Second, depending on polling results the media decides who to invite to televised debates. The equity problems this creates has been highlighted repeatedly by the OAS.

¹³ ADD's founder is a former treasurer of the PRN (Luis Diego Garro Sanchez) and its managing director (Alejandra Brenes Rodriguez) a former PRN candidate for parliament.

that the government would raise VAT from 13% to 16% in July 2019 (Sequeira and Chinchilla Cerdas, 2019).

The two Prendas brothers and Fabricio Alvarado subsequently shared the link to the false claim via their social media platforms, from which it was passed on more than 1,100 times by their followers (Cerdas, Sequeira and Oviedo, 2019). Their claim was explosive, even though identified as false by Costa Rica's Treasury and the Government. It came at a time when the country was paralyzed by strikes relating to the implementation of the tax reforms that the Costa Rian Parliament had passed in December 2018 to help address a deep fiscal crisis. The case sparked a fierce parliamentary debate about the destabilizing effects of fake news in Costa Rica's democracy and the involvement of political parties in the spread of false news. Jonathan Prendas defended himself by accusing the government of attacking their nascent media organization and arguing that other political parties were doing the same.

Civil Society Organizations and Individuals

Civil society organizations as well as individual citizens joined the disinformation campaign surrounding the country's reform efforts. Albino Vargas, the Secretary General of Costa Rica's civil servant trade union (ANEP) also shared the false Diario la Carta news via Twitter to mobilize his base to strike against the government.14 Vargas further rallied secondary students on false claims related, for example, to diversity and inclusion issues and dual education which were also spread via Facebook by the National Educators Association (ANDE).¹⁵ The student leader who organized secondary students via Facebook to join the strikes and stage protests was a former intern of Jonathan Prendas (Cerdas, 2019). The strikes led to the closure of more than 100 secondary schools and forced out the education minister, Edgar Mora. Mora had to resign, inter alia, given the widespread false information that the government would replace separate bathrooms for girls and boys in schools with gender neutral common bathrooms, the creation of a "diversity day" which was claimed would advocate homosexual relationships between children, and over the false claim that the government's new dual education program would force students to work for companies without pay or health insurance. The incident shows how politicians and civil society organizations have used citizens' digital illiteracy to advance their political goals through the deliberate spread of disinformation. Alarmingly, a survey conducted by the University of Costa Rica concluded that two of every ten Costa Ricans admitted to sharing false news via social media or WhatsApp, even though they thought that the information was untrue (CIEP, 2019).

Another group of civil society actors that has frequently and deliberately spread false information to manipulate public opinion online is a group of xenophobic activists, with a network of six to eight different Facebook pages¹⁶ that publish similar information, roughly at the same time.¹⁷ In August 2018, following an influx of Nicaraguan migrants, the group placed a series of untrue claims related to Nicaraguan immigrants on their

¹⁴ He has close ties to the FA party which also vigorously opposed the government's fiscal and civil service reforms.

¹⁵ See, for example Bolaños (2019).

¹⁶ One of them is called "Liberales Costa Rica". Another group named itself "Resistencia Costaricense".

¹⁷ Interviews, conducted on 25.6.2020 and 26.4.2020.

social media sites within the same week (Artavia, 2018). The images and messages also circulated via WhatsApp, triggering a violent anti-immigration manifestation at the Merced Park, a traditional meeting point of Nicaraguans in the Center of San José. Of the 400 protestors, 44 were arrested (Artavia and Solis, 2018 and Tico Times, 2018). This unprecedented aggression against Nicaraguans in Costa Rica led to a national televised presidential address calling for calm as well as a special session in parliament during which the executive explained how it was managing the situation with the Nicaraguan refugees. A legislative advisor to PRN deputy Carmen Chan subsequently used the incident to share videos and xenophobic audios of the manifestation on the legislator's Facebook page "Costa Rica Unida" ("United Costa Rica") and critique the government's immigration policy (Alfaro, 2018). Another politician exploited the incident to advocate for the withdrawal of the policy of extending Costa Rican citizenship to children born in Costa Rica to Nicaraguan parents.

Since the Merced Park incident, the number of both xenophobic and homophobic Facebook accounts have grown further in Costa Rica, with around 165,000 followers combined (Robles, 2019 and Loaiza, 2019).

Private Contractors

Political parties in Costa Rica have not only worked with polling agencies, but also with private firms whose services include developing trolls. Some of the known cases involve "Soluciones Digitales" and "OW Marketing Agency". The head of OW Marketing, Iván Barrantes, was President Guillermo Solis' digital campaign advisor when the PAC was elected to form government for the first time in 2014. He was paid around USD 190,000 (CRC 111 million) for his services¹⁹ before continuing to work ad honorem for President Solis while maintaining his private clients. This caused an outcry and he resigned his post as special presidential advisor. Since then Barrantes has worked for various other parties in Guatemala and Costa Rica (including the PLN, ML and PRN) during national and municipal elections. A firm believer in "political marketing" (Murillo, 2015), his most recent emphasis seems to be opposition work.²⁰

In sum, various political parties, trade unions and other civil society organizations as well as private actors have been implicated in spreading disinformation deliberately during and after elections following an anti-establishment populist discourse or homophobic and xenophobic lines. The growth of the religious right, represented by the PRN and its spin off NR as well as Juan Diego Castro, have visibly contributed to this phenomenon and to an ever more toxic public discourse.²¹ Since 2014, private digital marketing companies or strategists have been hired during elections to "develop

¹⁸ These included false news and visuals claiming Nicaraguans were burning Costa Rican flags, that 1,000 Nicaraguan military agents had invaded the country, that Nicaraguan were receiving full scholarships by the University of Costa Rica, that the government had issued a decree to support Nicaraguan transwomen economically and cover their health insurance and that Nicaragua had released 400 rapists and 350 murders on the condition to move to Costa Rica (Artavia, 2018 and Tico Times, 2018).

¹⁹ See, for example, Chinchilla Cerdas (2018a).

²⁰ Interviews, conducted on 22.6.2020 and 24.6.2020.

²¹ Interviews, conducted on 23.6.2020 and 24.6.2020. In the pre-electoral phase, the TSE highlighted various times that the use of elements of religion as tools in political propaganda is prohibited by Costa Rica's Constitution and Electoral Code and issued a precautionary measure against the PRN party in March 2018 to this extent (see OAS (2018).

stories" and "place ideas" (Chinchilla Cerdas, 2018a). Table 1 summarizes the organizational form and prevalence of social media manipulation in Costa Rica.

Table 1: Organizational Form and Prevalence of Social Media Manipulation in Costa Rica

Initial	Government	Politicians &	Private	Civil Society	Citizens &
Report	Agencies	Parties	Contractors	Organizations	Influencers
2014		National	Opol Consultores	Evidence	Evidence
		Integration	(elmundo.cr); ADD	Found	Found
		Party (PIN);	Integral Solution;		
		National	Tecnologías SMS		
		Restauration	del Este; Grupo		
		Party (PRN);	Comunicaciones		
		New	OBS; Soluciones		
		Republic	Digitales; OW		
		(NR)	Marketing Agency		

Source: Authors' evaluations based on data collected. Blank spaces indicate no evidence was found.

Strategies, Tools, and Techniques

Cyber troops in Costa Rica have relied on different tools and tactics to manipulate public discussions about politics online. As seen by the examples above, politicians or individuals associated with them have not been shy about publishing false claims or conspiracy theories on their own social media platforms, as part of their political communication strategies and to mobilize their supporter base. On other occasions they have used questionable private news outlets to give an impression of independence and credibility. The digital media sources, which have been publicly accused of lacking independence and which have frequently mixed real with fabricated news, have included, but are not limited to, Diario La Carta, Noti Costa Rica, Noti Goico, Noticias Pococí, El Mundo Costa Rica, El Cantor Político, Guana Noticias, and El Guardián. Political activists or individuals have also disseminated false news that have pretended to be from the BBC or the local press via personal Facebook accounts, anonymous Facebook groups and WhatsApp. Sometimes the mainstream media picks up such news or politicians piggyback on false information generated by civil society groups or individuals sharing it with their followers.²²

Costa Rican legislators employ parliamentary advisors to manage their digital communications. Digital communications have included exaggeration or other forms of misleading imagery to support their agendas. For example, using pictures of automatic and semiautomatic rifles, Carolina Hidalgo, then President of Costa Rica's legislature from the PAC, tweeted misleading information in February 2019 about a motion adopted in the Legislative Assembly's Public Security Committee modifying proposed government reforms of the country's high caliber weapons regulation (Chinchilla, 2019). The image and tweet gave the impression that carrying automatic weapons would no longer be prohibited in Costa Rica after the adoption of the motion, a development that she opposed. However, the possession of automatic rifles remains prohibited. Protecting the status quo, the parliamentary committee instead rejected the

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²² Interview, conducted on 22.6.2020.

incorporation of new legal prohibitions related to the possession of semiautomatic rifles which is allowed under current legislation (Mora, 2019).

Fake accounts and false followers have been detected on occasion, but most accounts are human rather than automated. One expert interviewed by the researcher said:

"There are always humans behind the trolls, there is very little automation in Costa Rica. So far the problem is "handmade" and there is much room to systemize."²³

Human trolls which are particularly active on Twitter in Costa Rica. Prominent strategies include defamation and harassment attempts, attacks on the government and the promotion of social unrest. As one interviewee put it, on Twitter a "war is raging between progressive groups and an army of religious trolls." Another interviewee argued:

"The real division is not necessarily religion, but it has to do with human rights and social topics. Abortion is a prime example. Even if activist groups do not have a chance to get anywhere in terms of a change in policies, they use social media to feed and mobilize their hard core base to remind them what they are all about."²⁵

Trolls have also been active on Facebook. A well-known independent Costa Rican journalist, radio host and youtuber complained in February 2018 to his 55,000 followers about a troll intimidation attack by Fabricio Alvarado's campaign after he posted an opinion piece supporting gay rights. The troll attack led to his account being frozen by Facebook for 24 hours. Alvarado's supporters, in turn, have accused the government of spying and attacking their social media networks. A former parliamentary advisor to legislator Harllan Hoepelman from the PRN (now PR) complained to Costa Rica's Constitutional Court in February 2020 that, by the means of trolls, the government's controversial former Presidential Data Analysis Unit (UPAD) reported and blocked his social media pages. Both political parties and the government deny supporting online trolls. The Prosecutor's Office ("Ministerio Público") is investigating, but thus far without any concrete results nor a formal accusation.

In sum, attacks on Twitter and Facebook in Costa Rica have lacked the level of sophistication seen elsewhere in the world. Thus far, the TSE has not detected active networks of Twitter bots that are deployed ahead of or during an election to shape or affect a candidate's image.²⁷ One interviewee mentioned:

"If there is any attempt of bots, they are done badly in Costa Rica. For example, in one instance 10 accounts sent the exact same text, so these are easily identified. But any such attempts are disjointed. Theoretically, bots could have much greater impact, but I am not sure this is true for small countries, such as Costa Rica. Here politics is local – so if lies are being spread, for example about immigrants, this travels wide and fast over WhatsApp without the use of bots."²⁸

²³ Interview, conducted on 24.6.2020.

²⁴ Interview, conducted on 24.6.2020.

²⁵ Interview, conducted on 25.6.2020.

²⁶ See René Montiel, 27.2.2018 (Available at https://www.youtube.com/watch?v=8bs1Qa2w-DQ&list=LLJBadPz5nWr8yaWwinTq5Fw&index=113).

²⁷ Interview, conducted on 26.6.2020.

²⁸ Interview, conducted on 25.6.2020.

Similarly, sophisticated "deepfakes", in which a person in an existing image or video is replaced with someone else to manipulate content, have not yet been generated in Costa Rica for political propaganda purposes. Instead, political activists have usually used existing imagery from elsewhere, making it easy to identify as false. In April 2020, for example, a false picture of supposedly Nicaraguan migrants entering Costa Rica via Boca Tapada was shared widely via Facebook and WhatsApp. In reality, the photo showed a group of Central American migrants crossing the river Suchiate to get from Guatemala to Mexico on their way to the US. It had been published by the AFP a few months earlier. Numerous similar examples have been identified by *La Nación*.

Finally, the systematic use of social media influencers (paid or unpaid) by political parties or other political actors to amplify their messages, has not been an issue in Costa Rican elections to date.

Social Media Platforms

Facebook is by far the frontrunner of all social media platforms in Costa Rica for any cyber troop activity. Surveys since the 2014 election have showed that 70% of voters have used Facebook for news and information (CIEP, 2014). As of May 2020, active Facebook usership was around 68%, compared to 18% for Pinterest and 10% for YouTube (Global Stats, 2020). Twitter and Instagram trail far behind with under 2% (Global Stats, 2020). Although the general public uses Facebook rather than Twitter, Costa Rican politicians and political activists do have Twitter accounts. One interviewee explained that political activists rely on Twitter to move their issues persistently into the spotlight, so that politicians perceive them not as a fringe debate but as a real social concern:

"Despite low Twitter usage, repetition pays to affect politicians' perception of the public mood."²⁹

More recently, attempts by political actors to disinform have moved to WhatsApp and include voice messages and memes.³⁰ WhatsApp is used by 83% of the population (Latinobarómetro, 2018). According to research by *La Nación*, 76% of the false news items detected during the 2018 election were distributed via Facebook, 10% appeared in Facebook and WhatsApp, 8% was only shared via WhatsApp, and 6% were on Twitter (Hidalgo, 2019). By July 2019, more than half of all false news identified by *La Nación* circulated via WhatsApp (Arias Retana, 2019c).

To slow the dissemination of false information, WhatsApp has responded with numerous revisions to its mechanics and its terms of use. Until 2018, WhatsApp users had been able to forward a message to 250 groups at once. Given the rapid spread of fake news in personal communications, this was subsequently reduced to 20. In 2019, WhatsApp tightened these limits further, initially to 5 and in April 2020, the company announced that users who receive a frequently forwarded message would only be able to share it to one chat at a time (Hern, 2020). The effect of such policies in Costa Rica remains to be seen. One interviewee mentioned:

²⁹ Interview, conducted on 25.6.2020.

³⁰ Interviews, conducted on 23.6.2020, 24.6.2020 and 25.6.2020.

"WhatsApp is a private messaging system, not social media. It is private and hidden. Hence, the WhatsApp fake news phenomenon is a threat that can only be stemmed with greater digital literacy."³¹

Table 2 summarizes the observed strategies, tools and techniques of social media manipulation in Costa Rica.

Table 2: Observed Strategies, Tools and Techniques of Social Media

Manipulation in Costa Rica

Account Types	Messaging and Valence	Content and Communication Strategies	Platforms
Human	Polarization strategies including attacks on government reforms, immigration, diversity and inclusion, and religious values/human rights/social issues, Trolling and Harassment, Defamation attempts/accusations of corruption	Facebook pages, disinfo/misinfo websites, including news websites linked to political parties, memes, misleading photos or images from elsewhere	Facebook, WhatsApp, Twitter

Organizational Capacity and Resources

Cyber troop capacity in Costa Rica is low compared to other countries in Latin America. Activities by politicians or their political operatives are still mostly uncoordinated and rely on human accounts and human trolls. Given that the country does not have an army and lacks experience with the type of military intelligence operations seen in other Latin American countries, its current low level of sophistication is unsurprising.

During election periods political parties have small teams working on their digital communications which reduce in size after the elections have finished. As one interviewee said:

"There is little money for such [cyber troop] campaigns in between elections, they spring up more systematically during election campaigns." 32

Public data on the amount of resources spent on digital marketing, data mining and cyber troop capacity is almost non-existent. This has been, in part, due to the fact that neither digital marketing agencies nor researchers hired privately during election campaigns need to register with the TSE. Only companies which conduct polls intended to be published during elections and the media which accept money for political advertising need to register by a certain deadline with the TSE. But digital marketing agencies are currently outside of the legislation operating under "a veil of opacity", as one interviewee lamented.³³ In addition, while the TSE looks into spending

³¹ Interview, conducted on 26.6.2020.

³² Interview, conducted on 22.6.2019

³³ Interview, conducted on 26.6.2019.

on marketing, costs to develop trolls, for example, are hidden in the category of digital marketing. Hence, it is difficult to isolate resources spent on political propaganda by cyber troops.

The scandals outlined above reveal some of the resources spent on developing manipulated content or actors which have been involved in the past. They include the USD 31,200 the PRN owed to Opol for the unrepresentative polls, USD 230,000 paid for digital advertising, and USD 35,000 for a voter market analysis to ADD Integral solutions. But the amounts paid on any trolling activity by companies, such as Soluciones Digitales or OW Marketing Agency are unknown.

According to Iván Barrantes, communication strategy fees amount to USD 50,000 per month in Costa Rica (Cambronero, 2014). Of the USD 190,000 he was paid during the 2014 election, almost USD 130,000 (CRC 75 million) was a bonus for winning (Chinchilla Cerdas, 2014; and Cambronero, 2014). Such amounts pale into insignificance compared to the USD 600,000 budget Andrés Sepúlveda had at his disposal for cyber troop activities during Mexican President Pena Nieto's election campaign (Robertson, Riley and Willis, 2016). Table 3 captures cyber troop capacity in Costa Rica.

Table 3: Cyber Troop Capacity in Costa Rica

Team Size Resources Spent (USD) Small USD 31,200 for unrepresentative Election Periods, Coordination Low	Capacity Measure	0 1 0		_	
		Coordination	Activity Levels	•	Team Size
polls by Opol; USD 230,000 digital advertising paid to ADD Integral Solution; USD 35,000 to ADD Integral Solution for a voter market analysis; Contracts with Soluciones Digitales, OW Marketing Agency, OBS for unknown amounts.	Low	Low	Election Periods, with some continuity	unrepresentative polls by Opol; USD 230,000 digital advertising paid to ADD Integral Solution; USD 35,000 to ADD Integral Solution for a voter market analysis; Contracts with Soluciones Digitales, OW Marketing Agency, OBS for	Small

Government and Private Responses

Various public and private projects have been undertaken to stem the spread of online disinformation in Costa Rica. These include initiatives by the TSE to protect the integrity of the electoral process, as well as fact-checking projects by the government, the UCR, the digital daily CrHoy.com, and *La Nación*. Each is briefly described below.

TSE initiatives

The TSE has opted to fight disinformation campaigns through education and communication (rather than pursuing a punitive approach). Its strategy rests on three

main pillars: a) enhanced digital literacy; b) improved communication; and c) prompt reaction to disinformation campaigns.³⁴

The digital literacy program is run by TSE's Institute of the Formation and Study of Democracy (IFED).³⁵ Since 2019 the program has involved collaboration with Facebook and Twitter. The program started as a pilot project ahead of the 2020 municipal elections to evaluate and improve responses to disinformation before the 2022 general elections. Facebook facilitated the content of workshops in digital literacy and trained TSE officials as instructors. Given the TSE's concern about the spread of false news and to further strengthen the module developed by Facebook, TSE collaborated with the UCR's fact checking initiative "Double Check" (see below) who provided an additional training session on detecting fake news in Costa Rica to TSE officials. A diverse population of 750-760 people received training in digital literacy across the country as a result.³⁶ Some workshops were conducted with a target audience, including local politicians, municipal leaders, and political youth leaders. Others were open to the public. In a similar agreement, Twitter gave three different seminars to community managers, political parties, and the media on how to identify disinformation and propaganda.

The second pillar of the TSE's strategy has consisted in improving communication by sharing interviews and videos debunking common electoral myths, and explaining electoral processes to journalists, especially municipal elections. The program involved working with directors of major news outlets and opinion formers. According to one interviewee:

"The goal was to prevent false news from going viral. Developing a relationship and open communication channel with the media was important to ensure that when dubious material is discovered, they doubt it, ask critical questions, and call the TSE to verify before contributing to false news going viral. This way the TSE wanted to save itself a lot of problems." 37

The third pillar of the TSE's response to disinformation campaigns has involved the implementation of prompt reactions by including in its agreement an open channel with Facebook that contained provisions to take down content which could threaten the integrity of the 2020 municipal electoral process. To achieve this, the electoral judges would be compelled at a first stage to issue a resolution providing evidence to justify their decision. Once justified, the TSE would subsequently be permitted to call a number at Facebook to request that content be taken down.³⁸ The provision would only be used in extreme situations, for instance when public order or the fundamental right to vote were threatened by fake news or organized social media manipulation. This was not the case during the 2020 municipal elections. Hence, the mechanism has not been used to date. Facebook further agreed to share details with the TSE about the amounts spent on electoral campaign advertising and by whom. Yet, in practice this is only possible if the advertisement is labeled as electoral campaign advertising. One interviewee admitted that:

³⁴ Interview, conducted on 26.6.2020.

³⁵ The IFED was created in 2009 to promote democratic values, citizen participation and civic culture in electoral agents, political parties and citizens more generally.

³⁶ The initial goal was 1000 (Chinchilla Cerdas, 2019b).

³⁷ Interview, conducted on 26.6.2020.

³⁸ Interview, conducted on 26.6.2020.

Facebook offered three additional products to Costa Rica's TSE ahead of the municipal elections. On election day voters upon opening their Facebook page: a) were alerted that the election is taking place, b) automatically got a link to the TSE informing them where they could vote; and c) could share that they voted to incentivize participation. The idea for the 2022 general election is to have in place a similar agreement with Facebook.⁴⁰

A fourth pillar of the TSE's strategy did not come to fruition. The TSE had hoped to create a fact-checking alliance between all main news outlets at a national level with the help of Facebook. The idea was that each news company would assign two of their journalists to an overarching fact-checking team during the election process and would publish the unit's findings in all participating news outlets. The unit would keep ownership of editorial process while enjoying the symbolic support of the TSE. Facebook was subsequently to notify their users of the false news. This initiative failed to take off, given the rivalry between existing individual efforts at fact-checking. These individual efforts include "the Government Clarifies" (Gobierno Aclara) program, the UCR's "Doble Check" (DobleCheck) program, Crhoy.com's initiative "Don't fall for it" ("No Caiga"), as well as the "Don't be Fooled" ("NoComaCuento") project by *La Nación*. Each of them is further explained below.

Initiatives by the Executive

The website "The Government Clarifies", launched on July 31, 2019 was the government's direct response to the incorrect claim that VAT would be raised by 3%. The platform was managed by the Communication Ministry and discontinued after June 2020. It focused mainly on anonymous content circulating on social media rather than information produced by the media. The public could follow "Gobierno Aclara" via the website, Facebook, Twitter as well as WhatsApp (Zuñiga, 2019). Of the 18 items identified as false and published by the government (see Table 4) which were circulating on social media or via WhatsApp between 31 July 2019 and 7 June 2020, six had to do with the welfare state, falsely claiming Costa Rican citizens would lose some of their current social benefits (in one occasion to immigrants), three had to do with the corona crisis or natural disasters, two were related to fiscal reforms and the country's liquidity, another two were false govt. endorsements of bitcoin, and a few others concerned false news about the president, related to the first lady, government salaries, the education ministry and transport regulations. 15 out of 18 were false news items that were negative about the government.

³⁹ Interview, conducted on 26.6.2020.

⁴⁰ Interview, conducted on 26.6.2020.

Table 4: Summary of anonymous False News on Social Media Identified by the Costa Rican Government (July 2019 - 7 June 2020)

Topic	No. of Items	Туре
Welfare State/Social Service Provision	6	negative
Corona Virus	3	negative
Fiscal Reform and Govt. Liquidity	2	negative
Bitcoin	2	positive endorsement
First Lady	1	positive endorsement
Ministry of Education/Education Policy	1	negative
Public Sector Salaries	1	negative
Transport regulation	1	negative
President	1	negative
Total	18	

Source: Author's summary based on archive available at https://aclaraciones.presidencia.go.cr/.

Private Initiatives

"Double Check" started in October 2018 to contrast news and detect false, misleading statements or half-truths in Costa Rica's political discourse as well as the media. It is financed by the UCR's Office of Dissemination and Information and has been supported by the University Radio and Television (Channel 15), as well as the university newspaper Semanario Universidad. Since February 2020, "Costa Rica Noticias", the main public television news program features weekly contributions from "Double Check". The initiative received the 2019 National Journalism Prize Pío Víquez awarded by Costa Rica's Ministry of Culture. Of the 128 items which circulated on social media and were identified as outright false by the editors (rather than misleading) between 1st October 2018 and 5th July 2020, 22 were lies related to the coronavirus, followed by 14 pieces of disinformation on government spending and public sector salaries. Another 14 items were anti-establishment propaganda. 11 items were fake news related to immigration and xenophobic content. Attacks on the government's health policies also featured 11 times. False information relating to taxes and the PAC's fiscal reform were identified 10 times. Another eight pieces related to the 2018 strikes and attacked on the Minister of Education and false news about his policies. Abortion featured seven times, as did false news related to the economy. 5 articles published by Doble Check within this timeframe referred to disinformation on the country's security situation or arms. Pro-government propaganda featured only twice, so did elections. Finally, seven fake news items covered various other topics. The source of at least 17 of these items were current legislators. These results are summarized in Table 5.

Table 5: Summary of Information shared on Social Media Identified as outright

false by "Double Check" between 1 October 2018 and 5 July 2020

Topic	No. of Items	Type
Corona Virus	22	positive and negative
Government Spending and	14	negative
Public Sector Salaries		
Anti-Establishment/Anti-	14	negative
Government		
Immigration/Xenophobic	11	negative
content		
Public Health Policy	11	negative
Fiscal Reform and Taxes	10	negative
Strikes	8	negative
Ministry of	8	negative
Education/Education Policy		
Abortion	7	negative
Economy/Poverty/Debt	7	negative
Various other	7	positive and negative
Security/Arms/Crime	5	negative
First Lady/Pro-Government	2	positive endorsement
Propaganda		
Elections	2	negative
Total	128	

Source: Author's summary based on archive available at https://doblecheck.cr/. Only articles which were marked with an "X" as false were included, not items which were identified half-truths.

Similarly, the project "Don't Fall for it" started after the 2018 elections to counteract the impacts of false content that circulates on the Internet. It was developed by the influential news website crhoy.com, owned by the banker and former finance minister Leonel Baruch.

The only fact-checking initiative which monitored social media during the election was *La Nación's* "Don't be Fooled" project, which started in January 2018.⁴¹ Readers were invited to submit stories to be verified by *La Nación* which subsequently published examples of false claims in its online edition (BBC Monitoring, 2018). Given the success of the project it continued after the election. During its first year of operation, the initiative debunked 209 items (Mora, 2019), of which 63 were circulating during the election (Hidalgo, 2019) and 51 were related to the fiscal reform (Arias Retana, 2019a). As such 54% of all false news items were related to two issues: the general election as well as the incoming government's fiscal reform attempts (Arias Retana, 2019a).

Conclusion

Social media in Costa Rica has become an important strategic political campaign tool. While there is no systematic "weaponization of social media" to engineer election results, numerous political parties, trade unions and individual citizens have

⁴¹ The newspaper *El Financiero*, also owned by *La Nación*, pioneered fact checking in Costa Rica during the 2014 election with its initiative "Challenge the candidate" ("Rete al candidato").

discovered the potential of social media for political campaigning since the Cambridge Analytica scandal in the US.

The deliberate spread of disinformation during and after elections has become particularly visible since 2018, when religious parties significantly consolidated their presence within Costa Rica's political landscape. Both the PRN and the PR have frequently been linked to the spread of fake news, the publication of unrepresentative opinion polls, the recruitment of trolls, and harassment on Facebook and Twitter.

The production of political propaganda in Costa Rica is still predominantly a homegrown and human activity. Neither the TSE nor private initiatives have found any sophisticated attempts at automation, or the use of professionally manipulated imaging to mislead voters. Since the 2018 election, disinformation attempts have focused on local contentious social and political topics. Exploiting existing polarization, key themes include corruption, government reforms, immigration, as well as abortion and marriage equality.

While Facebook and Twitter remain the most prominent platforms to share disinformation, the use of WhatsApp has risen sharply. Increasing digital literacy in the country is hence crucial. Fact-checking has been an important response both by the government and private actors. So too have efforts by the TSE to stem the emergence of systematic disinformation. Nonetheless, observers fear that there will be a progressive professionalization of cyber troop activity in Costa Rica ahead of the 2022 elections, given the small size of the country, its high internet penetration and use of social media, its weak institutional cybersecurity systems, and a low awareness of privacy risks and digital literacy.

References

Agüero, M. (2014, January 15) "Grupo Alianza Costa Rica Pide Advertir a Empleados Sobre José Maria Villalta" (Available at: https://www.nacion.com/el-pais/politica/grupo-alianza-costa-rica-pide-advertir-a-empleados-sobre-jose-maria-villalta/CR22UO4CUNECTDLPDUYPTRFHTE/story/).

Alfaro, J. (2018, August 20) "Diputada de Restauración Nacional Acuerpa a Asesor que Respaldó Marcha Xenophóbica", Semanario Universidad. (Available at: https://semanariouniversidad.com/pais/diputada-de-restauracion-nacional-acuerpa-a-asesor-que-respaldo-marcha-xenofobica/).

Arias Retana, G. (2019a, January 15) "#NoComaCuento: Mayoría de Noticias Falsas Surgió con Elecciones y Reforma Fiscal, durante el 2018". *La Nación*. (Available at: https://www.nacion.com/no-coma-cuento/mayoria-de-noticias-falsas-surgio-con-elecciones/TUQMI7BUWFCFTANXHTZDTVBWVI/story/).

Arias Retana, G. (2019b, December 9) "Restauración Nacional Obtuvo Datos Privados de 2,5 Milliones de Cotantes sin Consentimiento". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/restauracion-obtuvo-sin-consentimiento-datos/SYADJQEIKRHLTNI76BUMZHJHLI/story/).

Arias Retana, G. (2019c, July 21) "Noticias Falsas en WhatsApp se Multiplicaron en el Primer Semestre del Año". (Available at: https://www.nacion.com/no-comacuento/noticias-falsas-en-whatsapp-se-multiplicaron-en-el/6N6P2UP7XNFJXGASUZWJDTJZM4/story/).

Arias Retana, G. and Hidalgo, A. (2019, June 21) "#NoComaCuento: Noticias Falsas en WhatsApp se Multiplicaron en el Primer Semestre del Año" (*La Nación*, 21.6.2019) (Available at: https://www.nacion.com/no-coma-cuento/noticias-falsas-en-whatsapp-se-multiplicaron-en-el/6N6P2UP7XNFJXGASUZWJDTJZM4/story/).

Arrieta, E. (2016, March 31) "Frente Amplio Pide a Fiscalia Investigar Incursión de Hack en Campaña 2014". (Available at: https://www.larepublica.net/noticia/frente amplio pide a fiscalia investigar incursion de hacker en campana 2014).

Artavia, S. (2018, August 18) "Ola de Noticias Falsas Antecedió Agresiones". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/ola-de-noticias-falsas-antecedio-agresiones/KAC4GDBPIBGSXG5RQ4GACQGTYA/story/).

Artavia, S. and Solís, G. (2018, August 18) "20 Detenidos por Agresiones Xenofóbicas en San José". *La Nación.* (Available at: https://www.nacion.com/el-pais/politica/20-detenidos-por-agresiones-xenofobicas-en-san/WKDKQGKT7RCV7K6ZKOMRFZPXOE/story/).

BBC Monitoring (2018, March 30) "'Don't be Fooled' – Busting Fake News in Costa Rica". (Available at: https://monitoring.bbc.co.uk/product/c1dp0mdj).

BBC News (2018, February 5) "Costa Rica Goes Into Run-Off as Evangelical Lead". (Available at: https://www.bbc.com/news/world-latin-america-42938510).

Bloomberg News (2016, May 12) "Colombian Election Hacker Moved From Protective Custody". (Available at: https://www.bloomberg.com/news/articles/2016-05-12/colombian-election-hacker-moved-from-protective-custody).

Bolaños, D. (2019, July 23) "Video de Sindicato Difunde Falsedades Sobre Educación Dual desde el 2016". *Double Check*. (Available at: https://doblecheck.cr/video-de-sindicato-difunde-falsedades-sobre-educacion-dual-desde-el-2016/).

Bradshaw, S. and Howard, P. N. (2017) "Troops, Trolls and Troublemakers: A Global Inventory of Social Media Manipulation". *COMPROP Working Paper Series*. (Available at: https://comprop.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/07/Troops-Trolls-and-Troublemakers.pdf).

Bradshaw, S. and Howard, P. N. (2018) "Challenging Truth and Trust: A Global Inventory of Organized Social Media Manipulation". *COMPROP Working Paper Series*. (Available at: http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/93/2018/07/ct2018.pdf).

Cambronero, N. (2014, August 5) "Estratega de Luis Guillermo Solís recibió 75milliones en premios por ganar las elecciones" (*La Nación*, 5.8.2014) (Available at: https://www.nacion.com/el-pais/politica/estratega-de-luis-guillermo-solis-recibio-c-75-millones-en-premios-por-ganar-las-elecciones/EIELTHLXORAWXFNGGDGU4VZFEA/story/).

Cambronero, N. (2016, April 1) "Hacker Andrés Sepúlveda Informó a Bloomberg de que en Costa Rica Hizo un Trabajo Normal", *La Nación* (1.4.2016) (Available at: https://www.nacion.com/el-pais/politica/hacker-andres-sepulveda-informo-a-bloomberg-de-que-en-costa-rica-hizo-un-trabajo-normal/NTORSMNFR5AVNEYABH5A7QKQ2A/story/).

Cambronero, N. (2018, May 24) "Encuestas de Opol se hicieron por encargo de Restauración Nacional de cara a segunda ronda". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/encuestas-de-opol-se-hicieron-por-encargo-de/67BL2AJD2FGCPHG7CMMIPTCXFU/story/).

Cerdas, D. E. (2019, July 30) "Dirigente estudiantil 'bromea' con cobre de 'la mensualidad' a Albino Vargas por organizarle bloqueos". *La Nación.* (Available at: https://www.nacion.com/el-pais/educacion/dirigente-estudiantil-bromea-con-cobrode-la/BHXF43XTORFPXLEIZBQMV5JA6Y/story/).

Chinchilla Cerdas, S. (2018a, February 23) "Fabricio Alvarado se Acerca a Estratega de Campaña de Luis Guillermo Solís y Antonio Alvarez". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/fabricio-alvarado-se-acerca-a-estratega-de-campana/DQW2JQCKMBDVXHGZMZEMYSKHLU/story/).

Chinchilla Cerdas, S. (2018b, November 2) "Tras la Pista de Una Página que Difunde Noticias Falsas en Costa Rica". *La Nación*.(Available at: https://www.nacion.com/el-pais/politica/tras-la-pista-de-una-pagina-que-difunde-noticias/OLNERNVJY5GY5IZARECMHWO5TM/story/).

Chinchilla Cerdas, S. (2019a, July 28) "Extrañas Alianzas Impulsan Protestas". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/extranas-alianzas-impulsan-protestas/YBMDGEQQ6BBGVGTCQ53VERRRDY/story/).

Chinchilla Cerdas, S. (2019b, October 2) "TSE se Alia con Facebook y Twitter Para Combatir Noticias Falsas de Cara a Elecciones Municipales". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/tse-se-alia-con-facebook-y-twitter-para-combatir/CSION76QV5GHFDDUH7KNWPXHMQ/story/).

Chinchilla Cerdas, S. and Oviedo, E. (2018, January 5) "#NoComaCuento: Juan Diego Castro cuestrinonó al presidente del TSE con base en una premisa falsa". *La Nación.* (Available at: https://www.nacion.com/el-pais/politica/juan-diego-castro-cuestiono-al-presidente-del-tse/2N6V5M3WDZEAZFVGZYZBWPTW2M/story/).

Chinchilla Cerdas, S.; Sequeria, A. and Oviedo, E. (2019, July 31) "Página ligada a presidente de partido fabricista difunde noticia falsa sobre aumento del IVA". *La Nación.* (Available at: https://www.nacion.com/el-pais/politica/pagina-ligada-a-presidente-de-partido-fabricista/IAWX7HSMFJGCFF37D5ALQE5LQ4/story/).

Chinchilla, D. (2019, February 23) "Carolina Hidalgo Divulgó Información Imprecisa Sobre Rifles de Alto Calibre" (Doble Check, 2019, February 23) (Available at: https://doblecheck.cr/carolina-hidalgo-divulgo-informacion-imprecisa-sobre-rifles-de-alto-calibre/).

CIEP (2014) "Electoral opinion poll" (University of Costa Rica: San José. January 2014).

CIEP (2019) "Informe de Resultados de Estudio de Opinion Sociopolítica – Audiencias Noticiosas de Medios Digitales" (University of Costa Rica: San José. July 2019). (Available at: http://cicom.ucr.ac.cr/wp-content/uploads/2019/07/Informe-Audiencias-noticiosas-de-medios-

<u>digitales.pdf?fbclid=lwAR3FTLuEY9oDYd_4jdqgNysgsX0JiQFmx3Fz5Mgdb-</u>zSHfOk1APYQ2dto_c).

Colburn, F. and Cruz, A. (2018) "Latin America's Shifting Politics: The Fading of Costa Rica's Old Parties" *Journal of Democracy*, Volume 29, Number 4, October 2018, pp. 43-53.

CrHoy.com (2018, August 18) "Videos: Fuera Alvarado Gritan Manifestantes en la Merced". (Available at: https://www.crhoy.com/nacionales/videos-fuera-alvarado-gritan-manifestantes-en-la-merced/).

Cruz Romero, R. (2015) "Social Networks and Politics: The Use of Facebook in the Costa Rican 2014 Presidential Election" *International Journal for e-Learning Security (IJeLS)*, Volume 5, Issue 2, September 2015.

Diario Extra (2020, August 5) "Utilizan Logo de Diario Extra para montar Noticias Falsas". (Available at: https://www.diarioextra.com/Noticia/detalle/409933/utilizan-logo-de-diario-extra-para-montar-noticias-falsas).

Doble Check Costa Rica (Available at: https://doblecheck.cr/).

El País (2016, April 1) "El Hacker Colombiano que Incomoda a Varios Goberinos de América Latina. (Available at: https://elpais.com/internacional/2016/04/01/america/1459533039_924819.html).

Gallagher, E. (2018, February 9) "Interview with Colombian Hacker Andrés Sepúlveda". (Available at: https://medium.com/@erin_gallagher/interview-with-colombian-hacker-andr%C3%A9s-sep%C3%BAlveda-f985fe860f7f).

Global Stats (2009) (Available at: https://gs.statcounter.com/social-media-stats/all/costa-rica/)

Gobierno Aclara (2018, July 31) "Ministerio de Comunicación Lanza Plataforma Digital Contra la Desinformación". (Available at: https://aclaraciones.presidencia.go.cr/ministerio-de-comunicacion-lanza-plataforma-digital-contra-la-desinformacion/).

Gobierno Aclara. (Available at: http://aclaraciones.presidencia.go.cr/).

Grosser, S. M. (2018, January 9) "A Trump in the Tropics? Why a Demagogue Became the Leading Contender in Costa Rica's Upcoming Election". *OXPOL*. (Available at: https://blog.politics.ox.ac.uk/a-trump-in-the-tropics-why-a-demagogue-became-the-leading-contender-in-costa-ricas-and-what-this-means-for-the-upcoming-election/).

Hern, A. (2020, April 7) "WhatsApp to Impose new Limit on Forwarding to Fight Fake News" (The Guardian, 7.4.2020). (Available at: https://www.theguardian.com/technology/2020/apr/07/whatsapp-to-impose-new-limit-on-forwarding-to-fight-fake-news).

Hidalgo, A. (2019, May 4) "Cómo la desinformación se filtró en las elecciones de Brasil, México, El Salvador, Colombia y Costa Rica?". *La Nación*. (Available at: https://www.nacion.com/no-coma-cuento/como-la-desinformacion-se-filtro-en-las/2HOZ6CJV4JGVPFKHCARQCTGFQY/story/).

Interamerican Court of Human Rights (2017) "State Obligations Concerning Change of Name, Gender Identity, and Rights Derived from a Relationship Between Same-Sex Couples (Interpretation and Scope of Articles 1(1), 3, 7, 11(2), 13, 17, 18 and 24, in relation to Article 1, of the American Convention on Human Rights)", Advisory Opinion OC-24/17, Inter-Am. Ct. H.R. (ser. A) No. 24 (Nov. 24, 2017) (Available at http://www.corteidh.or.cr/docs/opiniones/seriea 24 eng.pdf).

Inter-American Development Bank (2020) "Reporte Ciberseguridad 2020 – Riesgos, Avances y el Camino a Seguir en América Latina y el Caribe". (Available at:

https://publications.iadb.org/publications/spanish/document/Reporte-Ciberseguridad-2020-riesgos-avances-y-el-camino-a-seguir-en-America-Latina-y-el-Caribe.pdf).

Kemp, Simon (2020) Digital 2020: Costa Rica. (Available at: https://datareportal.com/reports/digital-2020-costa-rica#:~:text=There%20were%203.76%20million%20internet,at%2074%25%20in%20January%202020).

La Nación (2016, February 14) "Iván Barrantes: Del Triunfo con Luis Guillermo Solís, a la Debacle del Libertario". (Available at: https://www.nacion.com/el-pais/ivan-barrantes-del-triunfo-con-luis-guillermo-solis-a-la-debacle-del-libertario/CH4WHIUFS5BDVMFC7TOTFTNQNI/story/).

Latino Barómetro Database (various years) (Data available at: http://www.latinobarometro.org/latOnline.jsp).

Latinobarómetro (2018) Informe 2018.

Loaiza, V. (2019, October 22) "Página de Detenido por Explosiones Atacaba a Grupos LGBTI y Migrantes con Noticias Falsas". *La Nación*. (Available at: https://www.nacion.com/sucesos/crimenes/pagina-de-detenido-por-explosiones-atacaba-a/DASL6QUH5JEJRLI2OFXNNRAJOM/story/).

Madrigal, L. M. (2020, February 27) "Abogado Denuncia que la UPAD Espió y con Troles Bloquearon sus Redes Sociales". *Delfino*. (Available at: https://delfino.cr/2020/02/abogado-denuncia-que-la-upad-le-espio-y-con-troles-bloquearon-sus-redes-sociales).

Madrigal, R. Q. (2017, November 28) "Juan Diego Castro Presenta Denuncia Privada Sobre Fraude Electoral". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/juan-diego-castro-presenta-denuncia-privada-sobre/DBZDI3XXWNCABHUEPT6VYTVVWA/story/).

Mayorga, A. (2018, May 30) "Buenos Días De Debajo de la Mesa. *La Nación*. (Available at: https://www.nacion.com/opinion/columnistas/buenos-dias-de-abajo-de-la-mesa/E6D72LBB6RAL3JDABOUOMPGXY4/story/).

Mojica, Y. (2018, August 29) "San José's Little Nicaragua: La Merced Park After the Hate". *Tico Times*. (Available at: https://ticotimes.net/2018/08/29/san-joses-little-nicaragua-la-merced-park-after-the-hate).

Mora, J. A. (2019a, January 30) "Gustavo Arias, Fundador de Proyecto #NoComaCuento de '*La Nación*' recibe mención honorífica en Premio Nacional de Periodismo". *La Nación*. (Available at: https://www.nacion.com/viva/cultura/gustavo-arias-fundador-de-proyecto-nocomacuento/X7I7YEF5JBGAZJJ2EZ6KPLKZDY/story/).

Mora, J. A. (2019b, February 22) "Congreso Enciendo Nueva Polémica por Tendencia de Armas". *Delfino*. (Available at: https://delfino.cr/2019/02/congreso-enciende-nueva-polemica-por-tenencia-de-armas).

Mora, J. A. (2019c, December 9) "Restauración, el TSE y los polémicos mensajes de texto de 126 milliones". *Delfino*. (Available at https://delfino.cr/2019/12/restauracion-el-tse-y-los-126-millones-en-mensajes-de-texto-que-el-tribunal-se-niega-a-pagar).

Murillo, A. (2015, June 28) "Entrevista con Iván Barrantes, Exconsejero de Luís Guillermo Solis: 'Nadie sabe bien qué es el cambio poítico'". *La Nación*. (Available at: https://www.nacion.com/el-pais/politica/entrevista-con-ivan-barrantes-exconsejero-de-luis-guillermo-solis-nadie-sabe-bien-que-es-el-cambio-politico/ROTLIY2ZIFBPVOBDEPB27XY3BI/story/).

Organization of American States (2018a) "Electoral Observation Mission National Elections Costa Rica – Final Report". OAS: Washington DC.

Organization of American States (2018b, February 5) "OAS Electoral Observation Mission in Costa Rica says that the Costa Rican electoral system is robust". (Available at: http://www.oas.org/documents/eng/press/Informe-Preliminar-MOE-CR-2018-Eng.pdf).

Organization of American States Press Release (2014, February 3) "Preliminary Report of the Electoral Observation Mission of the OAS in Costa Rica" (Available at: https://www.oas.org/en/media_center/press_release.asp?sCodigo=E-032/14).

Robertson, J.; Riley, M. and Willis, A. (2016, March 31) "How to Hack an Election" (Available at: https://www.bloomberg.com/features/2016-how-to-hack-an-election/).

Robles, M. (2019, August 26) "#NoComaCuento: Páginas Xenofóbicas Crecen en Facebook a un Año" (*La Nación*, 26.8.2019) (Available at: https://www.nacion.com/nocoma-cuento/paginas-xenofobicas-crecen-en-facebook-a-un-ano/W3X2KQNTCNEZ5G4M4UXHWL33PY/story/).

Ruiz Valerio, J.F. (2017) "Los desafíos de la consolidación electoral: El caso del Tribunal Supremo de Elecciones" *Derecho Electoral*, Primer Semestre 2017, Número 23 (Available at: https://www.tse.go.cr/revista/art/23/ruiz_valerio.pdf).

Sequiera, A. and Chinchilla Cerdas, S. (2019, July 31) "Jonathan Prendas Defiende Noticia Falsa Sobre Alza del IVA en Sitio Web Ligado a él" (Available at: https://www.nacion.com/el-pais/politica/jonathan-prendas-defiende-noticia-falsa-sobre-alza/REH5KMKUOJC43HKI6HOFPUTVYE/story/).

Sonneland, H. K. (2018, January 18) "Explainer – Costa Rica's 2018 Election" (Americas Society/Council of the Americas: 2018 Election Guide). (Available at: https://www.as-coa.org/articles/explainer-costa-ricas-2018-elections).

The Dialogue (2018, January 6) "How Much is Fake News Influencing Latin Elections?. *Latin America Advisor*. (Available at: https://www.thedialogue.org/analysis/how-much-is-fake-news-influencing-latin-elections/).

The Tico Times (2018, August 19) "False Social Media Posts Preceded Anti-Immigrant Protest in Costa Rica". (Available at: https://ticotimes.net/2018/08/19/false-social-media-posts-preceded-anti-immigrant-protest-in-costa-rica).

Tribunal Supremo de Elecciones (2018) TSE DFPP-EE-RA-001/2018.

UCR Noticias (2017, December 20) "Castro y Álvarez consiguen empate técnico en última encuesta del año". (Available at: https://www.ucr.ac.cr/noticias/2017/12/20/castro-y-alvarez-consiguen-empate-tecnico-en-ultima-encuesta-del-ano.html).

Zúñiga, A. (2019, August 1) "Costa Rica Launches Platform Dedicated to Fighting Fake News". *Tico Times*. (Available at: https://ticotimes.net/2019/08/01/costa-rica-launches-platform-dedicated-to-fighting-fake-news).