

**Deconstructing the Puerto Rican Reconstruction  
From a Global North and South Perspective**

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## **Abstract:**

Who is the ‘Global North and South’? This academic construct will be used to critically analyze Puerto Rico, and its relationship with the United States, as a case study to investigate how this false narrative affects vulnerability to climatic disasters.

The following research is a compilation of my first-hand reflections as a Latina community planner having lived, worked, and studied in Puerto Rico from 2018 until 2020. This academic endeavor was a cathartic experience in collecting the stories of American and *Boricua* recovery workers engaged in the Hurricane Maria disaster response and recovery from September 2017 until present day.

Hurricane Maria was a humanitarian crisis surrounded by intense media coverage, controversy, and scandal due to both the federal and state government’s lack of action or adequacy. This research uncovers major challenges and themes to post-disaster recovery, and to what extent does Puerto Rico’s historical relationship with the United States affects such challenges. Consequently, why experimenting disaster recovery doctrines, priorities, and practices from the ‘Global North’ complicates recovery planning.

Content and thematic analysis was dually constructed into a ‘Global North and South’ perspective through conducting text mining and sentiment analysis of recovery documents and interviews. Doing so, deconstructs whether there exists an “us” versus “them” or ‘othering’ dynamic in recovery planning. Limiting the scope to Hurricane Maria recovery workers and leaders amplifies their personal stories of spiritual resilience and first-hand observations on the recovery challenges and policies being applied to the Puerto Rico. More importantly, it informs how societal and structural racism contributes to disaster risk.

The ‘Global South’ perceptions and frustrations of post-disaster recovery challenges are modern-day colonial systems manifested through the federal reconstruction projects and reporting. In summary, this research uncovers why all these present-day systems collectively prevent(ed) communities from receiving the funding, planning, engagement, and investment necessary to adequately recover and progress toward equitable recovery goals.

**Acknowledgements:**

The following pages are for you,

Who turned the pages of 'Harry Potter,' beneath a flashlight, waiting,

For the darkness to subside

Who danced and sang *bomba* alongside your neighbors, awaiting,

For the darkness to subside

Who drove all over the island, checking if your family was alive,

For the darkness to subside

Who slept in the supply warehouses, waiting for Maria to arrive,

For the darkness to subside

Every day, for la Borinqueña.

## **Chapter 1: Introduction**

As a former reservist with the Federal Emergency Management Agency (FEMA), I will contribute observations, insights, and analysis to explain why the Puerto Rican recovery operation post-hurricanes Maria and Irma was and continues to be complex. More importantly, deconstruct why the relationship between the United States and Puerto Rico, as a Global North and South dynamic, plays an immense role in how initial disaster recovery was handled.

Prior to my role, I had no emergency management experience. In Paraguay, I was an environmental conservation extensionist that focused on agroforestry, soil conservation, livestock, and permaculture practices. By no means was I qualified to be a FEMA reservist due to my lack of experience in disaster response missions. However, there was an urgent need and recruitment effort for Spanish-speaking, Latino community planners to assist in long-term recovery planning from 2018 until early 2020.

Surprisingly, my code-switching abilities from growing up in a Peruvian-American household helped me to adapt, notice cross-cultural (mis)communication, and observe cultural clashes and stereotyping from both the Latin and North American perspectives. Interacting and learning with disaster officials, community leaders and locals as a Latina reservist led me to confront the abstract terms ‘Global North’ and ‘Global South’ daily. From site visits, conversations, and media coverage, it made me curious as to what the terms really mean, and what are the consequences of typecasting in a disaster recovery situation.

*‘Unmodern’. ‘Global North’. ‘Third World’. ‘Backwards’. ‘Developed’.* All these terms can be subliminally internalized throughout lectures halls, academia articles, movies, and media when discussing worldwide urban development practices. Depending on who one asks, the ‘Global North’ could constitute Euro-American countries, along with a few Oceania and Asian countries.

However, this is completely subjective depending on one’s perspective of geography and their academic training. For the purposes of crafting the argument, the current terms, “Global North and South,” will be utilized to analyze the unique context of Puerto Rico, and its relationship with the United States, as a case study to investigate how this false narrative affects disaster vulnerability.

**Chapter 1: Research Purpose & Caribbean Context**

Hurricane Irma arrived at the Caribbean September 5 through the 9<sup>th</sup> of 2017, and descended onto the islands of Barbuda, St. Martin, Puerto Rico, southern Bahamas, and the northern coast of Cuba.

Other nations that were severely damaged and evacuated to nearby islands include St. Barthelemy and the British islands of



Figure 1 Map of the Caribbean region.

Anguilla, British Virgin Islands, and Caicos (Sullivan, 2017, pg. 1). A Congressional impact report published in 2018 detailed the extent of Irma and Maria’s damages throughout the Caribbean.

In Antigua and Barbuda, the costs of solely rebuilding could total up to \$300 million, which excludes sheltering, schooling, and medical costs for the population displaced from their homes (Sullivan, 2017, pg. 2). Similarly, the northern Cuban coast experienced extensive infrastructural damage to their electrical, water and sanitation systems, which affected more than 2 million people (Sullivan, 2017, pg. 1). Neighboring countries of Dominica and St. Maarten had

90 percent of their buildings destroyed, washed out roads, damaged bridges, and communication outages, which complicated rescue operations like Puerto Rico.

Humanitarian funding for the 2017 hurricane season totaled around \$7.3 million (Sullivan, 2017, pg. 8). The vast infrastructural damage, loss in lives and widespread displacement, and lack of sufficient emergency response support from Global North countries showcased the strength and spiritual resiliency of the Caribbean islands. However, it was also a blatant reminder of how long-existing power structures have consequently eroded infrastructural, emergency, and social support services in a post-colonial setting.

This research will uncover the discrepancies in treatment and exclusion taking place in U.S. soil. By analyzing from the Global North and South perspective, one can observe how the dehumanization, exclusion, and lack of adequate support during disaster response and recovery promotes continuous risk, which perpetuates and reproduces disaster vulnerabilities. Throughout and beyond the United States, there are other countries, states, and communities undergoing disinvestment and structural erasure like Puerto Rico. Therefore, deconstructing what took place before and after hurricanes Irma and Maria will contribute to our understanding, as planners, of how resiliency planning should avoid ‘othering’ to evade further disruption, displacement, and climatic risk for communities in a similar predicament.

### **Research Question & Roadmap:**

Historically, Puerto Rico has been utilized as an experiment for the U.S. to test various social, military, pharmaceutical and housing development policies much to the detriment of locals. Additionally, it has been described as the ‘window to Latin America,’ due to its geographic proximity to the continental U.S. while also having a rich cultural heritage similarly found throughout Latin American and the Caribbean region.

Communities experiencing socioeconomic disparities tend to undergo greater challenges when recovering from a disaster due to pre-existing societal vulnerabilities. Hurricane Maria was the worst possible scenario to occur, and the literature review will detail the island's pre-existing fiscal crisis and other major development events, which resulted in titanic recovery challenges in comparison to other areas of the U.S affected during the 2017 hurricane season.

Overall, this research will address the major challenges to post-disaster recovery, and how in particular has Puerto Rico's historical relationship with United States (I avoid using the term "mainland"), affected these challenges?

To deconstruct the Puerto Rican reconstruction, research will detail current literature on the evolution of the Global North and South narrative, contextualize with post-colonial and sub-altern literature, and revisit the rich Puerto Rican urban planning history and development. Doing so, the methodology will be conducted two-fold, Global North and South, to critically analyze what took place during response and recovery in the aftermath of hurricanes Irma and Maria from 2017 until present day.

## **Chapter 2: Literature Review**

### **Who is the Global North and South?**

It is important to trace how academic reiterations of 'othering' has evolved over time to understand how problematic this academic framing is for the international planning field. The terms 'first and third world' initially emerged post-WWII in international development academia. Throughout the sixties and eighties, French sociological researchers would frequently refer to 'third world' countries as, "backward or uncivilized under-developed places" (Bratman, pg. 5). Doing so, initiated academic condescension, and superficially crafted superiority by labeling a nation based on whether it objectively met a perceived 'modernity' or 'developed' criteria.

Who is the Global South? The ‘backward’ or ‘uncivilized’ countries referenced, were recently independent nations that did not fit a communistic nor capitalist framework. However, such nations had a shared colonization experience, which to this day, reckons with legacies of poverty, structural racism, and inequality. In Puerto Rico, the last American-appointed Governor Rexford Tugwell complained during a speech in 1945 (met with protest and outrage) at the University of Puerto Rico that the island, “had no skilled labor and no administrative talent or experience to modernize its economy,” to justify the importation of American planners, academics, and experts (Reed, 2015). All this resulted in a top-down, centralized, and expanded welfare state that transitioned Puerto Rico from an agricultural economy to manufacturing through aggressive public policies that disincentivized the dominant sugar cane farming and exportation industry.

In terms of planning, post-colonial countries according to Watson’s article, ‘Seeing from the South’, “tended to reinforce and entrench colonial spatial plans and land management tools, sometimes in even more rigid form than colonial governments” (Watson, pg. 4). Along with spatial exclusionary practices, there are several examples of “imperial territories” being utilized by former or current colonial powers to test out administrative planning, zoning, and other ideas (Watson, pg. 4). According to Anibal Sepulveda in ‘The Island that Shrunk: The Evolution of Urbanism in Puerto Rico,’ Puerto Rico’s coastal urban areas were a “strategic functionality of trade and war and served as administrative centers,” as both a Spanish and American colony (Sepulveda, 1997, pg. 4). Even post-WWII, centralized planning from the Puerto Rican Planning Board (implemented by American, Rexford Tugwell), disfavored Puerto Rico’s municipal powers in favor of zoning laws from United States. These experimentations were inherited from an intended ‘Global North’ context to fit ‘Global South’ realities despite different societal, political, and cultural contexts that changed over time.

Even still, there are examples of ‘Global South’ countries utilizing 20<sup>th</sup> century Euro-American urban planning approaches to adapt to their governmental structures, urban conditions, and in the case of this research, their disaster framework. Decades of this problematic framing, distinction, and classification, has resulted in ‘Global South’ urbanism being academically viewed through a development lens as “imitations of Western cities,” and not as innovative cities where flows of urban solutions and ideas initiate (Watson, pg. 2). Planning practices was a major tool used during colonization; therefore, it is important that planning tools are utilized to improve the flow of knowledge. More importantly, one must critically analyze aspects of ‘South-South’ best practices that may also exist in a Global North context to deconstruct this circulation of knowledge production.

Of course, there is a lot of nuances and complexities in both ‘Global North and South’ urban spheres that cannot be solely attributed to failed planning systems. Market forces tend to strongly dictate property and land services, and consequently, where one lives. These tenure decisions can be detrimental to low-income households that do not fit within the ‘modern’ city model in a disaster scenario. Throughout the world, rapid urban growth is taking place, and with that, it challenges the government’s ability to sustain urban infrastructure and provide services. According to Watson, all this compromises an urban dwellers’ ability “to pay for such services and in coping with natural disasters,” since they become prone to living in high-risk areas or conditions as a result (Watson, 2009, pg. 5).

The evolution of this Global North and South framework was based and implemented on assumptions. Assumptions of how an urban space is; planning ideas are universally implementable; or that societal ailments of ‘poverty’, ‘inequality’, or derelict informal housing and infrastructure are synonymous to the Global South. According to Watson, “32 percent of the

population live on extremely low incomes and directly affected by both environmental disasters and social crisis” (Watson, 2009, pg. 5). Assumptions as such impress upon practitioners and institutions that the Global South must learn from the North. Deconstructing this narrative and reshaping it to learn from Global South planning practices would invite invaluable viewpoints, innovation, and inclusivity to adapt cities and vulnerable populations to global climatic uncertainty. For this reason, the research methodology will be dually structured by ‘Global North and South’ to allow for both viewpoints to deconstruct and observe the overall dichotomy of Puerto Rico’s observed recovery challenges.

## **Chapter 2: Deconstructing through Sub-Altern Planning**

Subaltern, according to the Oxford dictionary, is someone who holds a subordinate position within the ranks of the British army. In postcolonial and critical studies, subaltern refers to populations who are socially, politically, and geographically excluded from power due to being subjugated by a colonial power. Before engaging in research and analysis, subaltern planning calls for an acknowledgement of one’s positionality, and how that will affect the representation of this work.

Professor Ilan Kapoor commented on Spivak’s famous work ‘Can the Subaltern Speak’, through a reactionary essay pointing out the importance of not engaging in ‘epistemic violence’ when writing about the ‘subaltern’. He writes, “(one) cannot pretend to have pure, innocent, or benevolent encounters with the subaltern,” since doing so according to the post-colonial theorist, “perpetuates, directly or indirectly, forms of imperialism, ethnocentrism, appropriate” (Kapoor, 2004, pg. 10). The subaltern in this instance is Puerto Rico, which has been a social laboratory for U.S. policies, and has suffered throughout the decades because of its ‘limbo’ territorial status.

Since this research will engage with survivors from hurricane Maria in Puerto Rico, it is important to recognize my position as a North American, who worked for the Federal Emergency Management Agency during the devastating 2017-2020 hurricane and earthquake season as a community planning reservist. While I was dedicated to learning and integrating with the Puerto Rican culture as a Latina woman, it does not change my position of power as reservist nor as a Columbia University student researcher.

For this reason, I will take advantage of the opportunity and position to comment on why the ‘us’ versus ‘them’ dichotomy is problematic within the emergency management system. Analysis will involve showcasing resident comments and concerns about community development in a post-Maria context. In doing this, I do not wish to speak for the subaltern, but instead paint a picture of how the current system silences voices by limiting participation of the community in disaster recovery planning.

## **Chapter 2: Deconstructing through a Post-Colonial Lens**

Prevailing assumptions and generalizations make reconceptualizing decades of the Global North and South framework challenging. It is important to acknowledge the role architects and urban planners played in enabling modern day spatial exclusion through “building codes devised to produce a vision of ‘order’ and ‘beauty’ in a blatant effort to induce colonial investment in real estate” (Roy, 2011, pg. 6). Avoiding further reproduction of Euro-American-centric planning requires not only acknowledgement, but also the integration of Global North and South approaches to solve complex urban planning issues.

When one mentions the ‘Global South’, it refers to former European colonies and non-Western areas of the world. After gaining independence from colonist powers, these countries must still confront pervasive economic, social, political, and technical practices, which may be

complicated due to their colonial legacies. Post-colonial theory is a perspective that addresses inequalities between the North and South through deconstructing the ‘rich and poor’, ‘developed and developing’ divisions. In doing so, one can challenge perceptions of how different the Global South urban spheres are to reconceptualize and generate better-informed, critical urban theories.

Approaching urbanism from a post-colonial lens addresses the experiences of urban inequality worldwide. Economically speaking, the Global North has, “1/4<sup>th</sup> of the world’s population, and controls 4/5ths of global wealth” whereas the Global South, “has the preponderance of the world’s population, but has access to only 1/5<sup>th</sup> of world income” (Wood, 2020, pg. 3). This additionally demonstrates the need for low-income communities to be creative, problem-solvers with little to no resources to survive through climate change risks and impacts.

Post-colonial theory lens can apply to communities in the ‘Global North’ that also have informal activities that both low-income and elites utilize. Researchers Robin and Castan Broto provided the example of the post-industrial American city of Camden, New Jersey in how African American residents’ lives is affected and pressed by, “infrastructural neglect, disinvestment, and under maintenance,” which worsened once the Campbell’s soup factory closed in the seventies (Broto, 2020, pg. 5). Examples such as Camden is not synonymous to New Jersey, and it exemplifies colonial legacies and Global South elements that exist in disenfranchised communities throughout the Global North, United States.

All of this makes one question why the United States continues to ‘other’ or label nations as ‘unmodern’ or ‘primitive’ when such characteristics exist within its own borders? It is important to ask such questions when critically analyzing with a post-colonial lens since it explains how problematic the Global North and South dichotomy is; along with how resulting societal and structural racism contributes to disaster risk vulnerability in predominantly, indigenous, African

and Latin American communities throughout ‘Global North’, US cities. For this reason, Puerto Rico was chosen due to its culmination of geographic proximity to the United States, adoption of U.S. policies and laws, and experiences of structural racism and spatial exclusion to present day.

In the case of Puerto Rico, researcher Danielle Rivera applies elements of post-colonialism by considering how Eurocentrism and the structural use of repetitive disasters perpetuates racial violence and colonialism in her essay, ‘Disaster Colonialism: A Commentary on Disasters Beyond Singular Events to Structural Violence.’ Rivera’s main point is that disasters should not be framed as a singular instance of ‘crisis’ but rather, “understood as compounding and interconnected with societal histories,” which is unsettling in a time of climatic uncertainty and risk (Rivera, 2021 pg. 1). Disaster colonialism details how societal inequities and vulnerabilities become entrenched over time and will help explain the limitations of disaster recovery frameworks instituted from the Global North for the purposes of this research.

## **Chapter 2: Legacy of Operation Bootstrap & Rexford Tugwell’s on 20<sup>th</sup> Century Puerto Rican Planning History**

The Taino nation of Borinquen transitioned into Puerto Rico due to its functionality as a port that held sugar cane from the interior, but also gold, and silver from other colonies on the Western Hemisphere to be exported to Spain. Therefore, Puerto Rico’s coastal ports, and throughout the island, were developed for the purposes of expediting sugar cane in mass for effective trading. Because of this, the “urban-scape was developed with European influence,” which did not reflect the local reality (Sepulveda, 1997, pg. 4). Ultimately, this led to a structured economy that was purposefully designed to function like a machine.

Researcher Julian Go from the University of Chicago did a comparative study of Puerto Rico and the Philippines in his article, ‘Chains of the Empire,’ how these Spanish and American colonial

projects were set up to learn the “American style of democratic governance” (Go, 2000, pg. 4). His overall argument was that colonial projects are projected forms of manifest destiny, which are intended to control rather than realize a democratic, self-governing nation. He exemplifies this by commenting on how American supervision, “over local affairs were intensified over time and disciplinary mechanisms were tightened,” by using chains as a metaphor (Go, 2000, pg. 5). All of this resulted in a centralized colonial regime rather than creating local autonomy, and this research will evaluate the extent to which this ‘centralized colonial regime’ still exists today through the disaster recovery process.

Puerto Rican planning in the 20<sup>th</sup> century was accredited to Rexford Tugwell, a Columbia University social scientist and planner who was a part of Roosevelt’s ‘Brain Trust’ who assisted in policy development which culminated into the New Deal. He was also the last American appointed Governor of Puerto Rico from 1941-1946 who sought to bring an “improved version of the New Deal to a ‘backward’ place” (Lapp, 2011, pg. 8). This included restructuring the University of Puerto Rico, addressing the island via radio in English to the majority Spanish-speaking population, and initiating the island’s Planning, Urbanization, and Zoning Board in 1942 during his tenure. The Planning Board, (or commonly known as la Junta de Planificacion, JP) was established to create maps of the highways, island topography, and urban and rural land use to support public work projects focused on health, education, and economic development.

Tugwell is a controversial historical figure since he has been perceived as a colonizer arriving to the island and experimenting his ideologies and policy ideas that affect the island to this day. This idea is supported by Michael Lapp who details Puerto Rican history from 1945-1965 in his article, ‘The Rise and Fall of Puerto Rico as a Social Laboratory’ in describing the implications of ‘Operation Bootstrap’ with the island having “seized the imaginations of American academics”

such as urban planners, economists, sociologists whom attempted to create Puerto Rico into “a social laboratory, a model for Third World economic development, and a ‘showcase for democracy’” to transform the island into a “modern society” (Lapp, 2011, pg. 3). Puerto Rico’s proximity to the mainland, as well as “race, multiculturalism and colonialism” interested academics until the mid-sixties (Lapp, 2011, pg. 3).

Even after his governorship had ended, Tugwell maintained a close relationship with the first Puerto Rican-elected Governor Luis Muñoz Marin, an act which previously mentioned researcher Spivak would consider, ‘silencing the subaltern,’ since it continued the collaboration between Puerto Rican elites and American social scientists dedicated to modernizing the island. Meanwhile, the island’s sugar cane industry and population were suffering extreme poverty aggregated from the U.S. Great Depression, and Marin’s nationalistic political movement, Popular Democratic Party (PPD), which formulated as a call for social justice and land reform.

Tugwell and the PPD initiated the JP to implement economic and infrastructural development, but also to “establish state-owned industries as demonstration projects in location production...and established a government structure capable of implementing development plans” (Lapp, 2011, pg. 6). PPD planners continued to attract American industry to the island through creating various tax incentives and a stable framework to maintain investment.

The PPD leaders would look to American urban planners such as “Harvey Perloff, and economists like John Kenneth Galbraith, and political scientists like Carl J. Friedrich,” for ideas on industrializing and urbanizing Puerto Rico (Lapp, 2011, pg. 11). This shows how the island was utilized as a laboratory for social and political experiments throughout the fifties and sixties. Additionally, Tugwell maintained an American foothold throughout Muñoz’s tenure in

influencing the creation of the Commonwealth's Estado Libre Asociado (ELA) to develop Puerto Rico from 'traditional' to 'modern' in Latin American society.

## **Chapter 2: Disaster Coloniality Affects Social Justice in Equitable Recovery Planning**

Tugwell is a historical representation of 'Global North' imperialistic, American attitudes that influenced the creation and development of a 'Global South' Puerto Rican society. Since this research involves analyzing community voices and disaster vulnerabilities, it is important to revisit additional U.S. policies that affected the island's contemporary development. Once Puerto Rico converted from Spanish to an American territory, the economic transition from agricultural to manufacturing jobs invited rural migration, which allowed for alternative employment opportunities and the "emergence of the commercial and entrepreneurial sector" (Sepulveda, 1997, pg. 3). The city of San Juan was spatially arranged to facilitate production and welcome rural migration to benefit from opportune jobs.

Operation Bootstrap and housing policies from the U.S. is what prompted *jibaros* (countryside farmers), who were unemployed and purposefully uneducated to come into the urban areas for jobs, which resulted in housing construction in dangerous areas. At this point, 35 percent of housing was deemed inadequate, which called for urgent public housing construction (Sepulveda, 1997, pg. 4). The injected money during the post-World War II economy galvanized "radical planning, finance, design, and construction of public housing which showcases the planning decisions that took place to respond to the rapid economic and population growth" (Sepulveda, 1997, pg. 8). While there was obvious planning that took place to house people in the suburbs and through public housing; the booming economy perhaps occurred so fast that there was not sufficient integration of alternative transportation methods and environmental planning in the systems.

All this context matters and influences today. Examining the legacies of Operation Bootstrap and federal policies in Puerto Rican planning is an immense question for a literature review. However, it is important to revisit and analyze to understand how the legacies of disaster coloniality affects Puerto Rico's contemporary disaster recovery planning today. Equitable recovery consists of "implementing laws and policies to remove existing barriers to recovery solutions for frontline communities" (Georgetown Climate Center, 2021). Also, it should require collaboration with community leaders to derive appropriate and just solutions for disaster-afflicted communities. One of the four principles of social justice is participation where everyone voices their concerns and takes part in decision-making. The research will critically analyze to what extent does disaster coloniality, and the Global North and South dichotomy, affects disaster recovery; and consequently, community planning and participation which aims for an equitable recovery.

### **Chapter 3: Methodology**

#### **Background**

This research aims to uncover the major challenges to post-disaster recovery, and to what extent does Puerto Rico's historical relationship with the United States affects such challenges. With that, why experimenting recovery doctrines, priorities, and practices from the Global North complicates recovery planning.

The research questions reference post-colonial theory and the evolution of the Global North and South discourse in the literature review; since it is an example of U.S. recovery workers (with experiences ranging from Katrina, Sandy, Harvey, Irma and 9-11) enacting approaches to fit the Puerto Rican political and cultural context in an extreme, devastating recovery situation. Academics such as Watson's, 'Seeing from the South' and Rivera's "Disaster Colonialism: A Commentary on Disasters Beyond Singular Events to Structural Violence," will be referenced

throughout the analysis. Rivera asserts that a post-colonial reinforcement of spatial plans is more rigid than the colonial governments, and this research will evaluate whether this phenomenon is occurring by analyzing coloniality from all levels of disaster recovery.

The research virtually took place in Puerto Rico with former or current recovery workers engaged in the disaster response and recovery from September 2017 until present day, along with an analysis of pinnacle recovery documents. Text mining the interviews and reports will generate codes or themes to observe consistencies and differences between the Boricua and American perspectives of the operation's social and structural system, especially Puerto Rico's prior political and infrastructural conditions.

Hurricane Maria was a humanitarian crisis surrounded by intense media coverage, controversy, and scandal due to both the federal and state government's lack of action or adequacy. Due to the sensitivity of the topic, participants received a voluntary interview request and the research proposal to read over in Spanish and English, and their consent and anonymity was ensured once they were aware of the research objectives and value added. To evaluate whether there exists an "us" versus "them" or 'other' labeling dynamic in emergency management, the same ten interview questions were posed to both life-long *Boricua* survivors, academics, and professionals in Spanish, and compared to interviews with American disaster managers and leaders within the recovery who have limited, temporary knowledge on Puerto Rican culture, society, and politics.

Limiting the scope to hurricane Maria recovery workers and leaders focuses the discussion with people that have first-hand observation of the complex system, and can comment on recovery challenges, and consequently, critique federal policies being applied to the Puerto Rican context. More importantly, it will inform how societal and structural racism contributes to disaster risk.

### **Chapter 3: Constructing the Baseline with Community Voices**

Since post-colonialism, sub-altern, and disaster coloniality are mainly theoretical, interviewing Puerto Ricans and Americans, in addition to analyzing primary and secondary reports and surveys was conducted using content, thematic and grounded qualitative analysis through R Studio coding.

To establish the Global South perspective of recovery, I will be re-examining primary source ‘Community Input,’ worksheet responses to related to recovery after hurricane Maria as a baseline. This was collected for six weeks from December 2018 through February 2019 by Federal Emergency Management Agency’s (FEMA) community planning team to gain a better understanding of communities’ problems and concerns through the collection of primary, or “firsthand” information.

Worksheets were distributed throughout Puerto Rico’s 23 Community Recovery Centers (CRC) for an average of six weeks, and 9,876 responses were collected from December 2018 through February 2019. CRCs consisted of schools, libraries, stadiums, or any structure that could host hundreds of thousands of survivors on a weekly basis looking for support services for home or business damages, etc.

When waiting in line for services, participants filled out worksheets with concerns and insights related to their community’s health, safety, and development. Once collected, a database was created to record each submission by question, CRC, and number received. Depending on the response’s theme it was categorized as such:

- Infrastructure & Safety
- Recreational Spaces
- Public Health
- Economic & Social Services

The database is available for public use since the information collected came directly from the community and was not generated by FEMA. The worksheets did not ask for demographic information such as age, income, gender, and education levels for privacy purposes. Therefore, the responses are limited to anonymous content from recovery centers opened during this timeframe, which unfortunately does not include priority municipalities such as Culebra, Loiza, and Vieques since the recovery centers were closed during the data collection period.

### **Chapter 3: Thematic & Content Analysis of the Community Voices**

The community input worksheets were utilized as a baseline to postulate both the Global North and South dichotomy to each other. Since the worksheet collection period took place one year after the storm, it is assumed that the survivors continuing to visit and seek services are of critical need and whose perspective should be greatly taken into consideration.

The worksheets collected from this anonymous form of citizen engagement was mined for textual data through thematic and content analysis. The most frequently used words out of the 9,876 responses were tallied with R Studio, to visualize the priority community concerns one year after Maria. The results of this process were used as a frame of reference to compare against the sentiment analysis results of the interviews and reports detailed in later sections. Doing so, one can observe overlaps and diverging opinions of the Global North and South participants on recovery needs and challenges.

The worksheets were organized into a spreadsheet titled, “*respuestas*” (or responses in English) by the question prompt, disaster recovery center ID number, Barrio and Municipality, and original excerpt. Assigning in this manner accounted for survivors traveling in from surrounding municipalities to receive recovery services. Therefore, quantity of concerns by municipality can be measured to understand the scope of the study’s results.

To analyze results, R Studio text mining packages “qdap” and “tm” were installed to highlight the most frequented words in the original excerpts. The ‘tm’, or text mining, and ‘Qdap’ package was chosen since it bridges the gap between qualitative data and quantitative analysis by building a “corpus”. A ‘corpus’ is a collection of documents to analyze string vector phrases and create charts based off the results.

The ‘excerpt’ column of the ‘responses’ spreadsheet was selected and transformed into a data frame string vector to create the word corpus, as shown below:

```
library(tm)
text <- respuestas$Excerpt
words.vec <- VectorSource(text)
words.corpus <- Corpus(words.vec)
```

Once the corpus was created, the text was cleaned and aggregated to remove extra spaces, slashes, punctuations, numbers, stop words, and to make all text lower case. This was a precautionary step to remove irrelevant text to not distract from the data’s story. During this pre-processing step, a dictionary of stop words and expressions was created and added throughout the analysis process. This pre-processing, text transformation work was assigned to another separate data frame spreadsheet called, “docs” as shown below:

```
Remove: Extra space and slashes
docs <- tm_map(words.corpus, toSpace, "/") #change slashes to spaces
docs <- tm_map(docs, toSpace, "@") #@ to spaces
docs <- tm_map(docs, toSpace, "\\|")
Remove: Numbers
docs <- tm_map(docs, removeNumbers)
Remove: Spanish common stop words
docs <- tm_map(docs, removeWords, stopwords("spanish"))
docs <- tm_map(docs, removeWords, c("mas", "estan", "muchas"))
Remove: Punctuations:
docs <- tm_map(docs, removePunctuation)
Remove: Extra white spaces
```

```
docs <- tm_map(docs, stripWhitespace)
Convert: text to lower case
docs <- tm_map(docs, content_transformer(tolower))
```

Once the excerpts were cleaned and standardized, a document term matrix was created to move further with text processing and pick up the most frequently used words from the community concerns worksheets. The resulting table of the Document Term Matrix was two columns listing the words and their numerical frequency counts.

	<b>Word</b>	<b>Freq</b>
Carreteras (Highways)	Carreteras (Highways)	1,392
Iluminacion (Illumination)	Iluminacion (Illumination)	1,141
Falta (to fault)	Falta (to fault)	924
Dañadas (Damages)	Dañadas (Damages)	647
Calles (Streets)	Calles (Streets)	524

Figure 1 Document Term Matrix of the most-frequently used words found in community residents' responses.

Initially, the results of the original Document Term Matrix listed singular and plural words such as “parque (park)” and “parques (parks)”, or “dañada (damage)” and “dañadas (damages)”. The table was reworked to fix and merge singular into plural words to produce a more accurate word frequency. The function, “content\_transformer” of the text mining package was used to modify and perform such action:

Fix and merge words together:

```
toSpace <- content_transformer(function(x , pattern ) gsub(pattern, " ", x))
fixdanadas <- content_transformer(function(x)gsub("danadas", "dañadas", x))
fixcarreteras <- content_transformer(function(x)gsub("carretera", "carreteras", x))
fixcalles<- content_transformer(function(x)gsub("calle", "calles", x))
fixparques <- content_transformer(function(x)gsub("parque", "parques", x))
fixmejor <- content_transformer(function(x)gsub("mejor", "mejoras", x))
```

As a result, the Document Term Matrix listed 2,715-word observations. At which point, the cut-off number of 100 was chosen to focus on the most pressing issues faced at the community-level a year after the hurricanes. Two-word clouds were initially created to visualize the results.



These results will structure the Global South, ‘disaster coloniality’ historical narrative by detailing how Puerto Rico’s state of lighting and transportation consequently led to its fragility during and after Maria. More importantly, the conversational interviews and additional research will reveal *why* there are overwhelming amounts of infrastructural concerns throughout Puerto Rican communities, and whether it represents a complicated recovery.

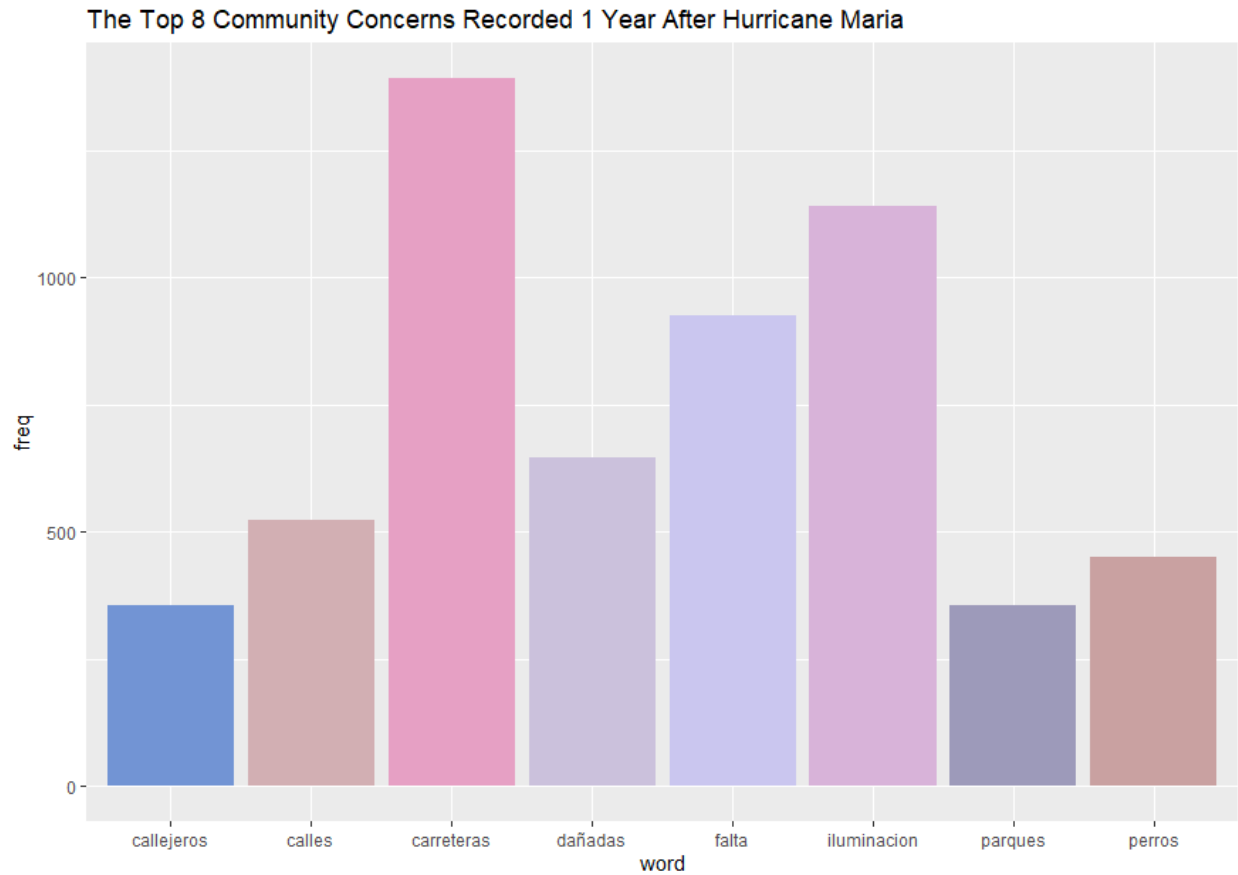


Table 2 Top 8 infrastructural and safety of “street animals,” “streets,” “highways,” “damages,” “lack of,” “street lighting,” “parks,” “street animals,” concerns after hurricane Maria according to residents.

### Chapter 3: Comparing the Global North and South via Primary Source Interviews

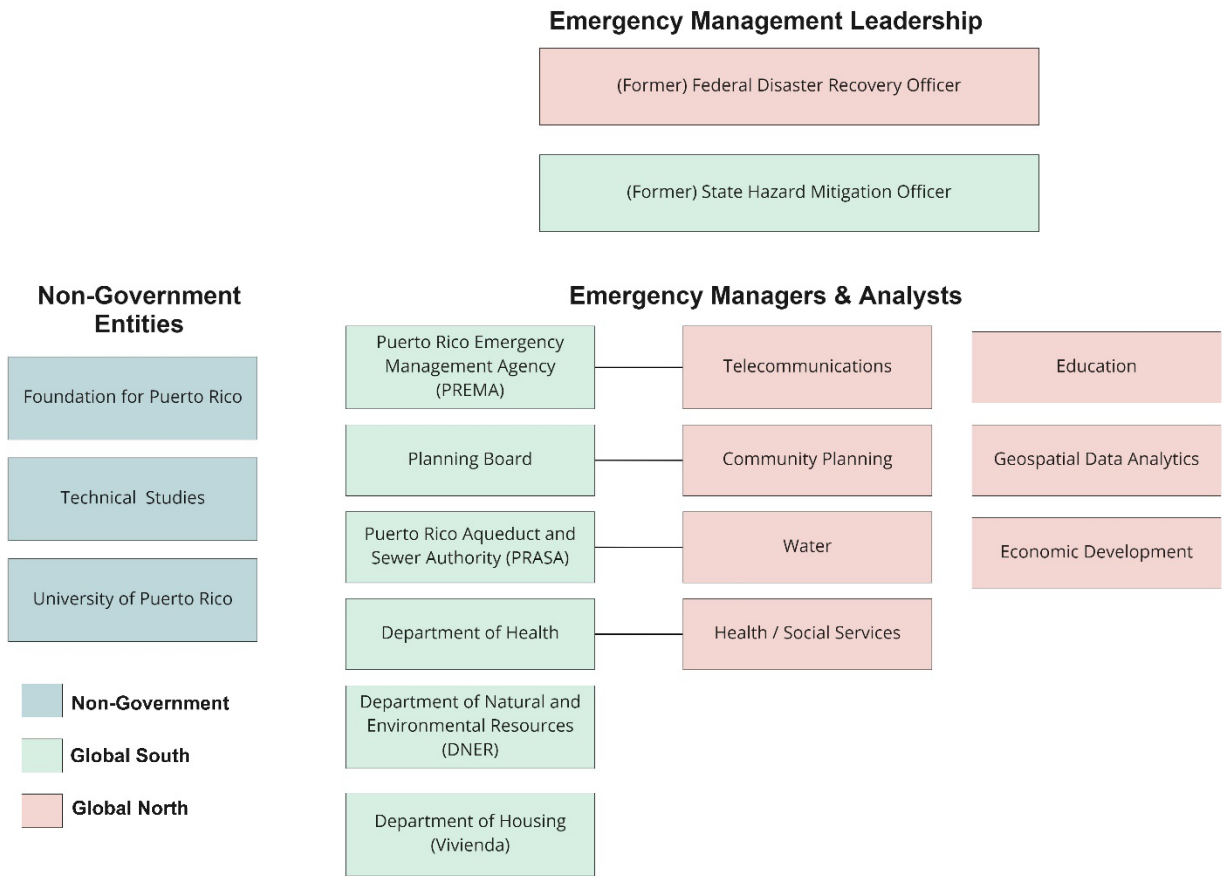


Figure 1: Diagram showing the interviewee's positionality in relation to disaster recovery power structures.

Global South:

Apart from a historical narrative, the resulting ‘Top Eight Concerns’ chart shown in Table 2 of the previous section was also used during interviews with eight former and current Puerto Rican state government employees from the Planning Board, Puerto Rico Aqueduct and Sewer Authority (PRASA), Department of Health, Department of Natural and Environmental Resources (DNER), Puerto Rico Emergency Management Agency (PREMA), Department of Housing (Vivienda), and recovery workers from Foundation for Puerto Rico, FEMA, Estudios Tecnicos, and University of Puerto Rico. Their reactions to the results were transcribed and textually

analyzed with the same process stated above to support opinions on the major challenges to recovery.

For the study's purpose, it was important to gage with local professionals familiar with the local government and can comment on the infrastructural and political landscape before the hurricanes for context. In addition, their experiences interacting with FEMA's top-down policies to investigate whether there is an "us" versus "them" dichotomy in practice, and how their obligations evolved over time. Interviews lasted about an hour, and the questions were as follows:

1. ¿Cuánto tiempo has vivido en Puerto Rico? (*How long were you (or lived) in Puerto Rico?*)
2. ¿A qué te dedicabas antes de este trabajo actual? (*What did you do before this job?*)
3. ¿Cuál es tu trabajo actual? (*What is your job now or during recovery?*)
4. ¿Puedes describir tu posición(es)? ¿Cuáles fueron tus obligaciones y expectativas? (*Can you describe your position(s), what were your obligations and expectations?*)
5. ¿Dónde trabajaste? ¿Tenías tu alguna conexión con el sitio? (*Where did you work? Did you have any connection to the site(s)?*)
6. Como un participante activo en la recuperación o como ciudadano: ¿Como visualizas el future de Puerto Rico? (*As an active participant in the recovery (or citizen)-How do you envision Puerto Rico's future?*)
7. A tu manera de entender, piensas tú, ¿que los objetivos de la recuperación corresponden con esta visión? ¿Como se ha ido desenvolviendo esta recuperación a través de los años, especialmente con el COVID-19? (*Do you think the recovery's operational goals (as you understand them) fits this vision that you describe? How has it evolved over the years, especially with COVID?*)
8. **Cuales piensas tú, ¿que (o porque) han sido los principales retos para la recuperación? Piensas tú, ¿Qué la participación de Estados Unidos dificulta la recuperación?** (*Why do you feel there have been recovery challenges? Do you think the relationship with the U.S. plays a role?*)
9. **¿Has observado choques culturales fuera o dentro de la oficina?** (*Have you noticed this clash inside or outside the office?*)
10. Piensas tú, ¿qué las necesidades de las comunidades fueron suficientemente consideradas en el proceso de recuperación? (*Do you think the communities' realities were considered enough or at all in the recovery process? How do you think this could be improved?*)

After the interviews were conducted, they were transcribed and combined to one text file to perform the same word frequency algorithm as the baseline community voices section, but with an added sentiment analysis process in R Studio.

#### Global North:

Like the Puerto Rican interview participants, American emergency managers and leaders were chosen from various timeframes between September 2017 to March 2022 to understand how the operation, and their recovery responsibilities evolved over time. Also, it was important to notate pre-conceived notions or historical, cultural, and societal knowledge each interviewee had about Puerto Rico before going to understand their positionality.

Ten analysts representing both the social services and infrastructure sectors such as community planning, geospatial data analytics, education, economic development, telecommunications, water, health, and social services were interviewed to ensure as many included perspectives about the recovery as possible. Some of the recovery workers interviewed originated from other U.S. territories and were survivors of other natural disasters such as hurricanes Katrina and Wilma in 2005, and flooding events in Colorado in 2014 and West Virginia in 2016. Their personal stories affected their observances surrounding Puerto Rico as a territory. Consequently, they reflected on similarities and differences between hurricane Maria recovery challenges to others they have seen first-hand throughout United States.

Once conducted, the interviews were transcribed to uniformly perform the word frequency and sentiment analysis algorithm as the baseline community voices analysis. The FEMA recovery workers were interviewed using the same ten questions posed to the locals:

1. How long were you (or lived) in Puerto Rico? ¿Cuánto tiempo has vivido en Puerto Rico?
2. What did you do before this job? ¿A qué te dedicabas antes de este trabajo actual?

3. Can you describe your position(s), what were your obligations and expectations? *¿Puedes describir tu posición(es)? ¿Cuáles fueron tus obligaciones y expectativas*
4. As an active participant in the recovery (or citizen)-How do you envision Puerto Rico's future? *¿Dónde trabajaste? ¿Tenías tu alguna conexión con el sitio?*
5. Do you think the recovery's operational goals (as you understand them) fits this vision that you describe? How has it evolved over the years, especially with COVID? *Como un participante activo en la recuperación o como ciudadano: ¿Como visualizas el future de Puerto Rico?*
6. **Why do you feel there have been recovery challenges? Do you think the relationship with the U.S. plays a role?** *Cuales piensas tú, ¿que (o porque) han sido los principales retos para la recuperación? Piensas tú, ¿Qué la participación de Estados Unidos dificulta la recuperación?*
7. **Have you noticed this clash inside or outside the office?** *¿Has observado choques culturales fuera o dentro de la oficina?*
8. (For non-Puerto Ricans) What did you know about Puerto Rico before going? Was there something your learned (historical, cultural, etc.) that surprised you?
9. Do you think the communities' realities were considered enough or at all in the recovery process? How do you think this could be improved? *Piensas tú, ¿qué las necesidades de las comunidades fueron suficientemente consideradas en el proceso de recuperación?*

The intention of the interview questions was to understand how the practitioner ended up in their role, their experience and understanding of the recovery, their interactions with non-locals and what they envision for Puerto Rico moving forward.

Once analyzed, the themes were be compared to understand the extent to which these Global North and South perspectives overlap or contrast, and whether disaster coloniality exists from within the recovery. This was done to observe narrative differences and similarities between locals and Americans of how Puerto Rico's pre-existing systemic and infrastructural vulnerabilities mattered and culminated with the recovery operation's challenges.

### **Chapter 3: Content Analysis of Global North and South Interviews and Reports**

Due to the complex nature of disaster recovery and the historical mistreatment of Puerto Rico, a content analysis research approach was chosen to distinguish the communication trends between Americans and Puerto Ricans towards this topic. Ideally, content analysis would reveal

patterns in emotional reaction and communication style between primary and secondary interviews and reports related to the recovery.

Through a conceptual content analysis, emotional reactions and communication trends will be distinguished through word frequency counts and observing the word's relationship to other words within phrases through sentiment analysis. Like the community voices baseline, the open-ended interviews, conversations, and reports were broken down into additional “codes” or “code category” themes through sentiment analysis.

The following sections will detail the text mining and sentiment analysis algorithm used for both the Global North and South interview and report word corpuses. However, since there are no sentiment dictionaries of Afinn, Bing, NRC in Spanish, visualization, and thematic sentiment coding aspects were revised, translated to English, and reanalyzed to compare with the Global North results. The revised algorithmic process and reanalysis will be detailed in the later section titled, “Revision of Algorithm for the Global South Text Mining Section”.

### **Chapter 3: Text Mining Section of Algorithm**

To draw a methodological comparison, Global North or South word corpuses were created from interview and report text files, and the same algorithm was applied uniformly by interchanging the data frame titles such as, “GN\_COA\_analysis”, “GS\_recovery challenges”, or “GN\_RAND\_sentimentanalysis”. For the purposes of explanation, “GNText” will be used an example to demonstrate the text mining and sentiment analysis coding process of the algorithm.

The interviews and reports were text cleaned through removing punctuations, excessive spaces, and transforming words to lowercase and root words. Finally, commonly used English and

Spanish stop words were removed, and the resulting frequently used words were detailed in the chart below:

Common English Stop Words Removed from Interview & Report Word Corpora		
Puerto Rico	Like	Know
Yeah	Yeah	Just
Puerto	Thing	Work
People	Lot	Guess
Think	Kind	Okay

Figure 2 Commonly used 'stop word' eliminated from text mining process.

### **Chapter 3: Sentiment Analysis Section of Algorithm in R Studio**

The sentiment analysis was conducted to measure the emotional intent of the interviews by classifying the sentiments as either positive or negative. A sentiment analysis was done by creating a separate data frame with the original interview or report phrases in a column table (named “text\_unique”), as show below:

```
text_unique <- str_to_lower(GN)
text_unique <- gsub("like", "", text_unique)
GNtext.df <- data.frame(text = text_unique, stringsAsFactors = FALSE)
```

A list of the most frequently used words was derived from the “text\_unique” data frame, summed and assigned a sentiment with one of the following emotions: anger, anticipation, disgust, fear, joy, sadness, surprise, trust, negative, and positive. The sums of all the counts (named “emo\_sum”) was created into a table, and joined to the NRC Sentiment Lexicon dictionary, as detailed below:

```
emotions <- get_nrc_sentiment(GNtext.df$text)
emo_bar = colSums(emotions)
emo_sum = data.frame(count=emo_bar, emotion=names(emo_bar))
emo_sum$emotion = factor(emo_sum$emotion,
levels=emo_sum$emotion[order(emo_sum$count, decreasing = TRUE)])
```

Doing so allows for this combination of words to equate positive or negative sentiment, along with other emotions such as surprise, fear, joy, anticipation, trust, sadness, or anger to create visualizations of word clouds, tables, and bar plots, as visualized in Table 3.

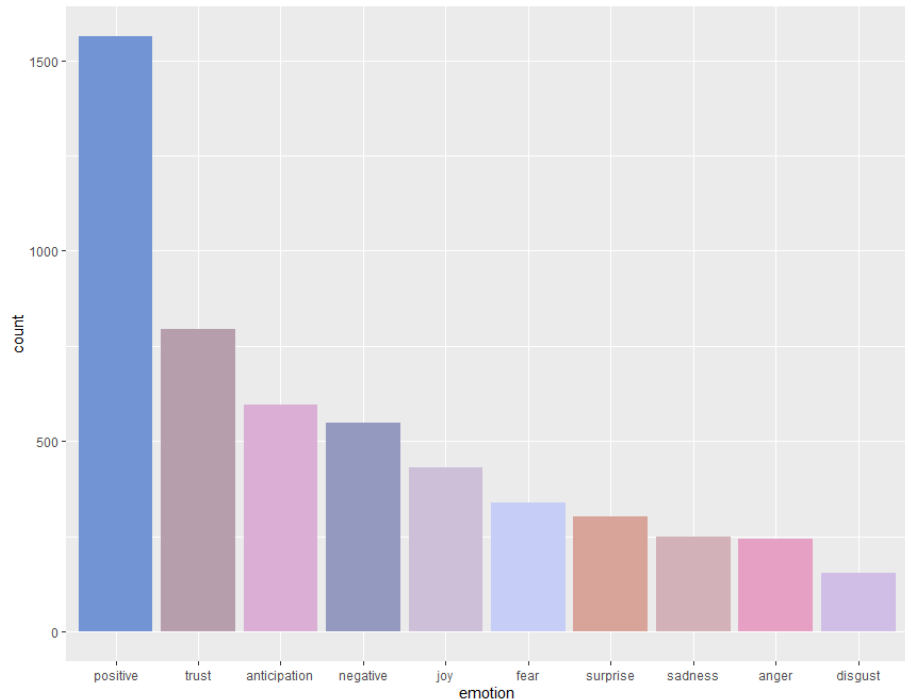


Table 3 Example of sentiment analysis results of the community voices input on recovery and community development challenges.

An additional approach utilized to detect underlying, implicit sentiments is by conducting a relation content analysis. The ‘Syzuhet’ package available in R Studio examines the overall phrase or theme by measuring the strength of a word’s relationship (otherwise known as “accompanying words”) to the coded concepts found throughout the text. Relational concepts based on the Global North or South reports, or interviews were visualized for observational differences between positive and negative sentiments with another level of granularity beyond word clouds.

Accompanying word visualizations that will be used in the analysis section are visualized in Table 4 as examples:

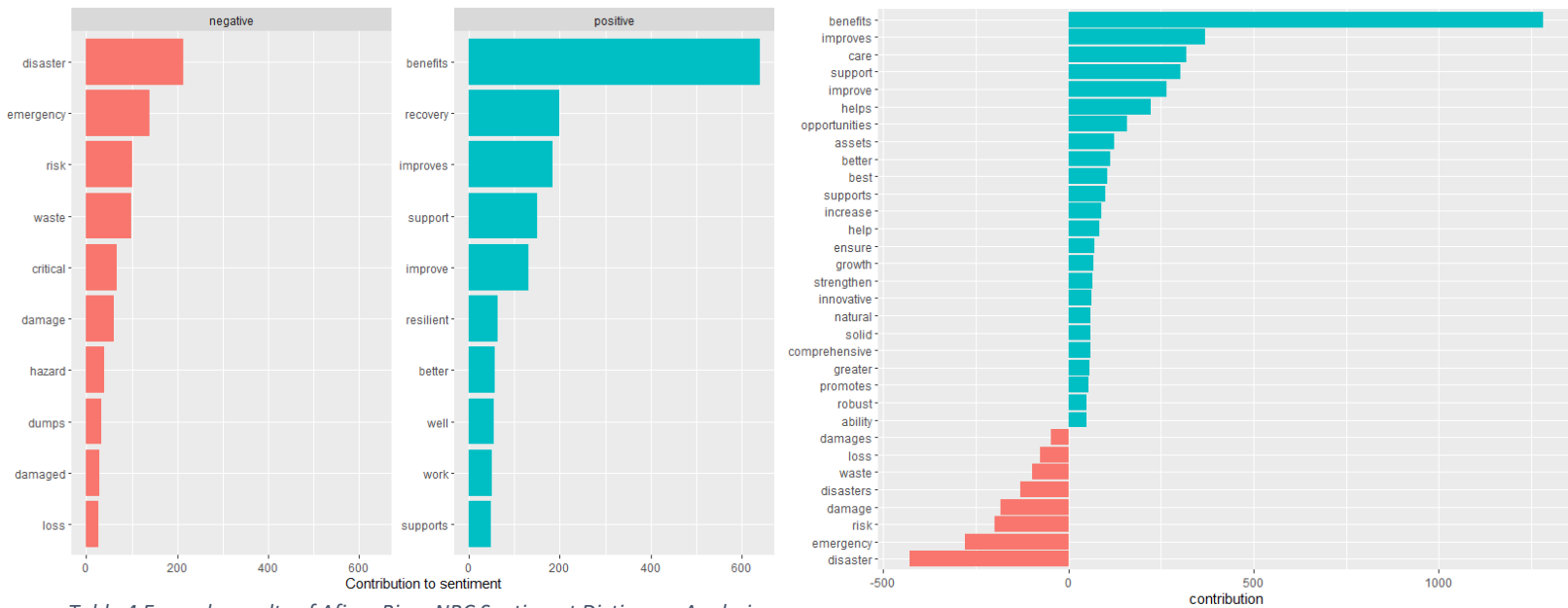


Table 4 Example results of Afinn, Bing, NRC Sentiment Dictionary Analysis visualizations.

### **Chapter 3: Revision of Algorithm for the Global South Text Mining Section**

Conducting interviews in Spanish was a pivotal aspect of not engaging in ‘epistemic violence,’ as described in the subaltern planning literature by Professor Kapoor. Apart from perpetuating English as a form of Ameri-Euro centrism or as a linguistic form of imperialism, interviewees were more comfortable and willing to share about their perceptions and opinions in Spanish.

However, much to the dismay of the researcher, the written algorithm cannot perform the sentiment analysis in Spanish. After hours of research, a comparison cloud based on emotions gathered from the reactions to interview questions is possible in Spanish. The following codes were revised in the algorithm for the Spanish research content to measure emotional content to visualize comparative word clouds:



manifestation of disaster coloniality through examining reports, and then how coloniality manifests at a personal level through the interviews.

#### **Chapter 4: Analysis of Global North and South Recovery Plans**

After conducting the interviews, every participant mentioned their work being modeled after the ex-Governor’s “Courses of Action” plan since it was how the recovery operated their priorities. For comparison, the “State Hazard Mitigation Plan of Puerto Rico,” was analyzed since it was conducted by urban planning students from University of Puerto Rico, and it exemplifies a Global North framework being applied to a Global South context. The following sections will detail a background of the plans along with the word frequency and sentiment analysis results.

To compare against the local community’s voices, or the Global South perspective of recovery, the Global North voices will be constructed and analyzed using the same algorithmic process. In this instance, the Global North will be a compilation of ten interviews with recovery workers, along with two secondary source recovery documents:

1. Global North: “*Courses of Action*,” Appendix of the ex-Governor’s Plan, “*Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico*,” published in August 2018 by the ex-Governor of Puerto Rico and COR3 Office of Recovery, Reconstruction, and Resiliency, which closely details the recovery initiatives and project cost estimates.
2. Global South: “*The State Hazard Mitigation Plan of Puerto Rico*,” published in August 2021 and concordance with COR3 and University of Puerto Rico Department of Planning

#### **Chapter 4: Global North’s Recovery Courses of Action (COA) Plan**

For the Global North secondary source document, the “Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico,” was produced by the Governor of Puerto Rico and COR3 to secure project funding from Congress. Several reports detail the recovery mission’s sector priorities, and this plan is updated at six-month

intervals (though it is not clear by whom). The Courses of Action is the official, ex-Governor's recovery plan that all interviewees referred to during interviews when speaking of recovery goals and plans.

The Governor's Plan was a compilation of foundational documents, such as the "Build Back Better Plan" of 2017, the "New Fiscal Plan" of 2018, along with the Community Development Block Grant-Disaster Recovery Action Plan (pg. 220). While speaking with FEMA interviewees from the water, telecommunications, data analytics, education, health, economic development, and municipal planning sectors, they referenced the plan's "Courses of Action" or (COAs) that illustrate each sector's objectives, investments, and strategic initiatives that support ex-Governor Rossello's vision of recovery and resilience. The sectors were broken up into infrastructural and social services, such as:

#### Infrastructure

1. Communications and Information Technology
2. Water
3. Energy
4. Housing
5. Public Buildings
6. Transportation

#### Social Services

1. Community Planning & Capacity Building
2. Education
3. Economic Development
4. Health & Social Services
5. Municipalities
6. Natural & Cultural Resources

According to the Governor's Plan, each of the twelve sectors developed the list of COAs by considering Puerto Rico's critical needs, available resources to meet such critical needs and an estimation of each project's maintenance and operational costs. Therefore, the ex-Governor's Plan splits the COAs into two: Capital Investments and Strategic Initiatives. Capital Investments are

projects that involve modernizing, restoring, transforming, or rebuilding already-existing infrastructural systems; whereas Strategic Initiatives are forward-thinking, visionary goals based upon the suggested Capital Investment projects.

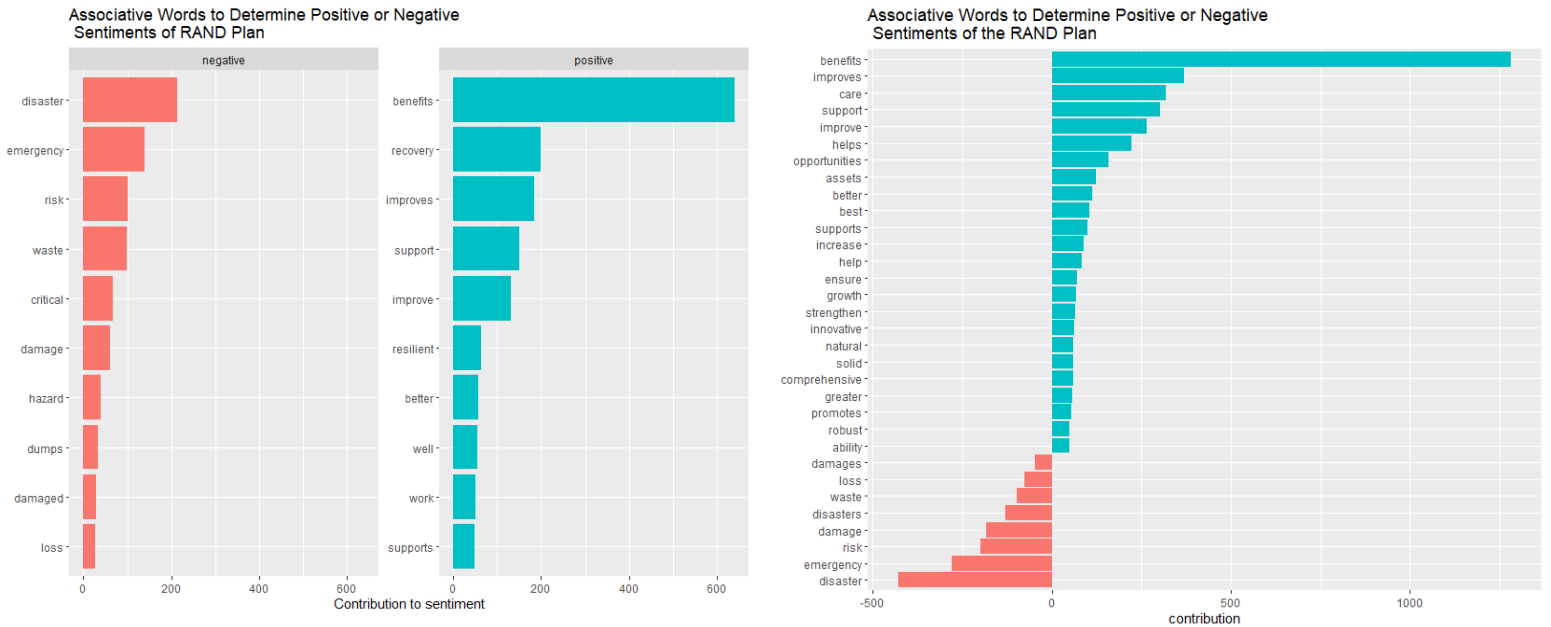


Table 5 Table 4 Results of Afinn, Bing, NRC Sentiment Dictionary analysis of RAND's ex-Governor's Recovery Plan, which dictated the 'Courses of Action' utilized by disaster recovery planning.

However, the results reveal the normality of government language that tends to be optimistic and positive. The RAND organization was contracted from Washington, D.C. to perform the research and formulate the recovery plan. The RAND project was formed in 1948 after World War II with the intention of “connecting military planning with research and development decisions” as a nonprofit organization dedicated to “furthering and promoting scientific, education, and charitable purposes for the public welfare and security of the United States” (RAND, 2022). Since RAND oversaw producing the research and narrative of this recovery plan, perhaps more positive language would be used to predict the recovery necessities such as, “benefits”, “support”, “resilient”, or “improve” as mentioned in Table 5. Along with more

pressing words such as “disaster”, “emergency”, “risk”, “critical”, and “waste” that is a more general description of the disaster.

After analyzing through the associative words to determine positive or negative sentiment, Table 5 shows that a majority of the COA plan is positive with words such as, “benefits,” “support,” “care,” “increase,” “innovative,” and “strengthen”. Since the COA’s were produced by RAND, comparing these results to the State Hazard Mitigation Plan will determine whether a difference in authorship makes a difference in the overall sentiment of the plan.

#### **Chapter 4: Global South’s The State Hazard Mitigation Plan (PRSNHMP) of Puerto Rico**

For the Global South secondary source document, “Puerto Rico State Natural Hazards Mitigation Plan,” was prepared by the Puerto Rican Emergency Management Bureau (NMEAD) in collaboration with Central Office of Recovery, Reconstruction, and Resilience (COR3), and the Graduate School of Planning at the University of Puerto Rico (UPR) in July 2021. The intention of the Puerto Rico’s Mitigation Plan is to identify risks and provide long-term mitigation solutions to reduce natural hazard vulnerabilities. A state’s hazard mitigation plan is an important determinant to secure funding for mitigation projects and must be updated every five years. More importantly, the plan must be developed in consultation with the community to be as comprehensive as possible and adhere to FEMA’s mitigation plan requirements to be approved.



The results of the sentiment analysis visualized in Tables 6 and 7 indicate overwhelmingly negative sentiments as opposed to the ex-Governors Recovery Plan. Similarly, words such as “disaster,” “emergency,” “risk,” were also the most frequently used, but other words such as “warnings,” “losses,” “failure,” and “broken” were found in the mitigation strategies. The alarming word choices may be because the plan is about natural hazards and risks. However, the associative words used to determine the positive or negative sentiment about the mitigation strategies varied greatly from the ex-Governor’s Recovery Plan.

For instance, the ex-Governor’s associative words were mainly optimistic and emphasized innovation and support during recovery. In contrast, Puerto Rico’s hazard mitigation plan’s negative associative words, visualized in Table 7, is like the Global North but also include words

such as, “failure,” “distrust,”

“illegal,” and “severe”.

Essentially, there is more local context and nuance included in the plan than the ex-Governor’s.

All of this gives a more comprehensive understanding of the vulnerability of the

infrastructural and societal systems.

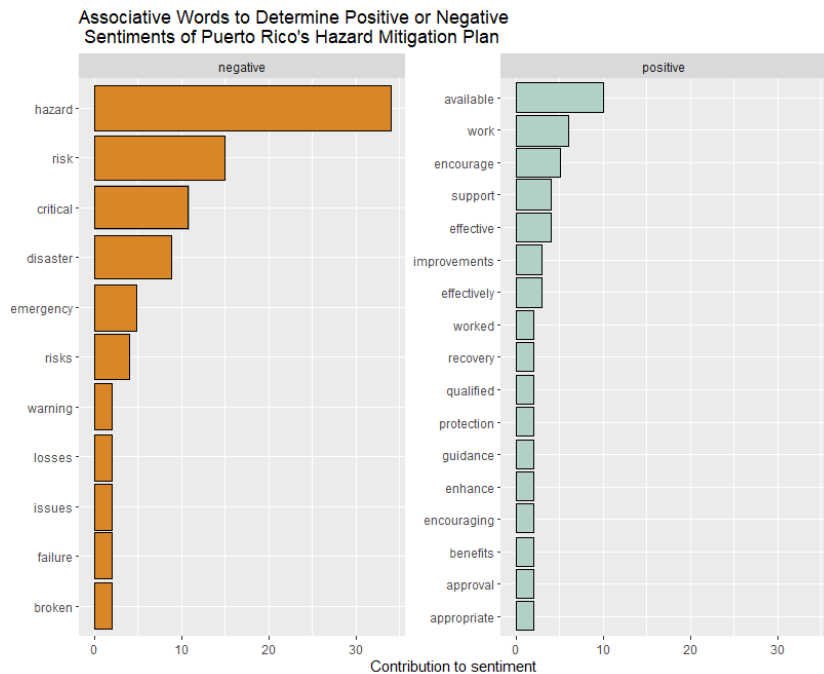


Table 6 Afinn, Bing, NRC Sentiment Dictionary analysis results of Puerto Rico's Hazard Mitigation Plan.

Analyzing federal documents shows how the difference in authorship affects the overall sentiment of the text and gives more context to understand how critical it is to improve Puerto Rico's infrastructural and socioeconomic systems. Main questions for further discussion are why outside contractors oversee dictating the recovery early on, rather than local researchers that have the appropriate knowledge, cultural,

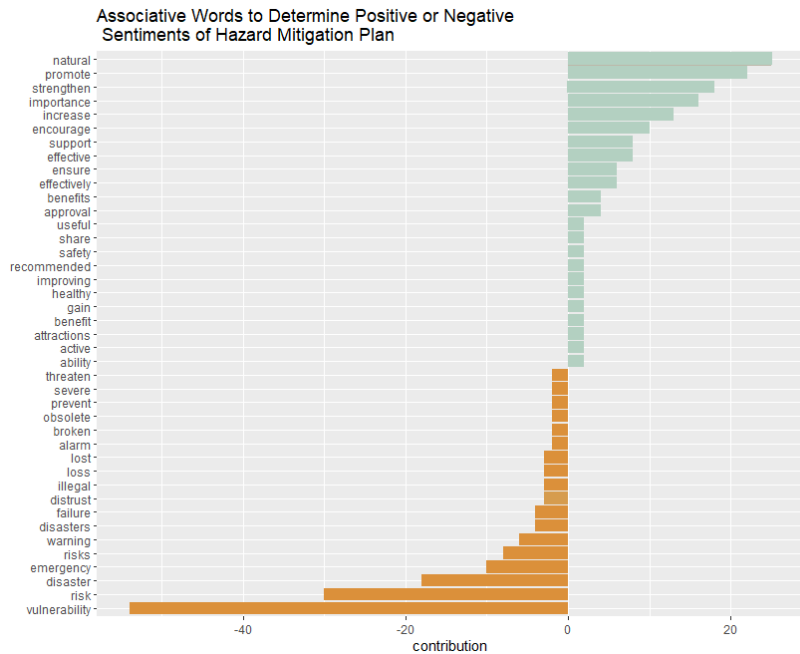
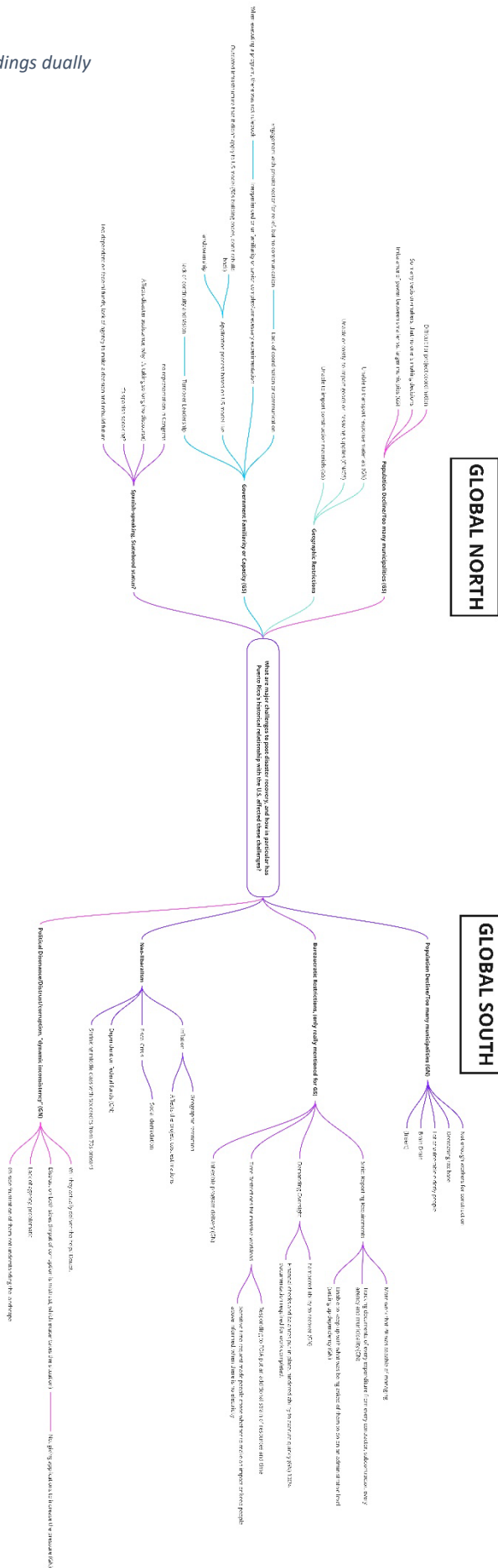


Table 7 Afinn, Bing, NRC Sentiment Dictionary analysis results of Puerto Rico's Hazard Mitigation Plan.

and technical capacity to create plans to guide recovery. The next chapter will manually analyze the thematic results of the interviews to objectively understand disaster coloniality from a bureaucratic and interpersonal level.

# Thematic Analysis

Figure 5: Thematic Analysis results of interview findings dually organized by Global North or South.



## Chapter 5: Thematic Analysis of Interview Results

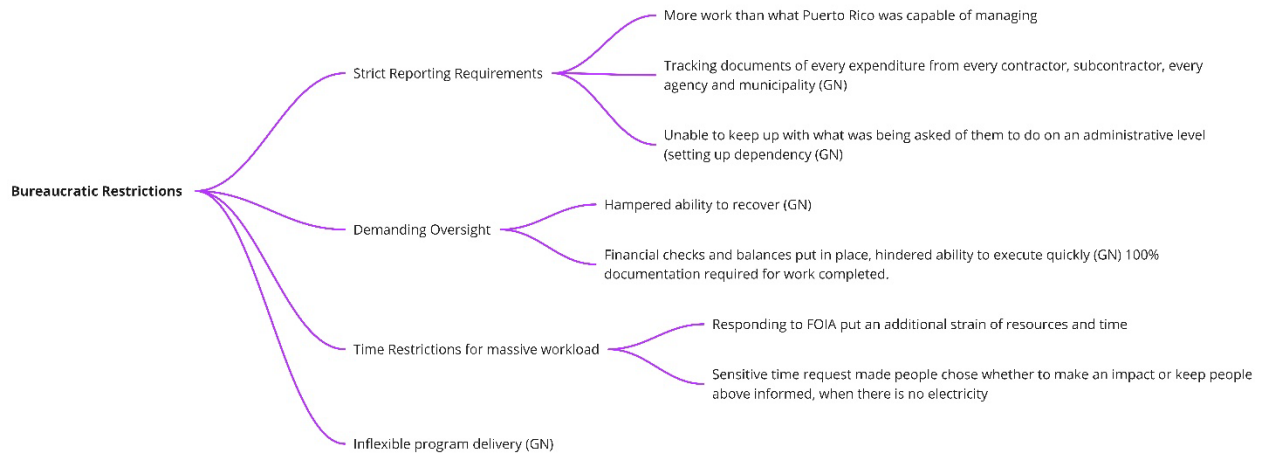


Figure 6 Bureaucratic restriction results of thematic analysis of Global South interviewees.

### Global South Perceptions of Post-Disaster Recovery Challenges- Bureaucratic Restrictions

Four major themes were identified through interviews with both Global South interviewees and echoed by Global North interviewees. The first common theme that emerged when asking Puerto Ricans about post-disaster recovery challenges were the strict, top-down, bureaucratic restrictions of FEMA and other federal disaster recovery programs when reporting on projects.

Figure 8 shows additional sub-themes identified throughout the conversations such as demanding oversight, time restrictions, and program inflexibility. The following quotes from interviews were chosen to exemplify the frustration and confusion participants felt in implementing the ‘Courses of Action’ found in the ex-Governor’s Transformation & Innovation Recovery Plan:

*“(In terms of recovery plan) Who are we responding to? To that plan? The **guidance is given from a federal agency where you must comply with so many requirements to be able to use those federal funds otherwise it will not work out.**” (Global South Participant #1, Female)*

*“(Speaking of the recovery plan) you need direction from the state government. You must give a clear direction of what you want. You (the state government) have an approved recovery plan, but then you have instructions given to so many agencies whose responsibility is to implement the recovery plan, and many agencies did not do so.” (Global South Participant #3, Male)*

The same participants continued to express concerns of how the strict reporting and time restrictions is consequently overloading the workforce and limiting their ability to conduct meaningful community planning:

*“We have six months to development the plan and every 30 days there is a deliverable very, very heavy with information...to answer in a strict format. there is even a guide for each activity’s indicator, which is so demanding and a waste of time. **All of this to comply with the requirements so much so that the community planning part suffers**, especially when conducting analysis for each municipality, when in truth, that is the real deliverable.” (Global South Participant #1, Female)*

*“The administration ran by the former President, Donald Trump, admitted former agency heads were mal intentioned. They were forced to **impose greater restrictions on funding administration on Puerto Rico**...The former director resigned due to the heavy impositions...(now) they have been working hard to loosen the procedures so that the money arrives easily or more quickly. We have a huge amount of funds with **limited, ridiculous, short timeframe and workforce capacity to deliver ...**” (Global South Participant #3, Male).*

On the theme of bureaucratic restrictions, two participants from the Global North voiced major concerns about how the rigidity of the federal reporting process affected local staff workflow and program delivery:

*“The financial checks and balances that were put in place hindered the Commonwealth’s ability to execute quickly, their (270 fiscal) transparency process they had to come up with, and the **fiscal oversight management board that put in all these checks and balances to require like 100% documentation for work completed, before they would give them money**. Like, that, inherently set the Commonwealth up for failure to spend money that both, the federal and local, government knew that they did not have to ensure they weren’t gonna get more into debt.” (Global North Participant #6, Male)*

*“The way (recovery funding program requirements) was set up, just required, like **more work than the Commonwealth was capable of managing**, even just paperwork-wise, like being able to track all the different documents of every expenditure from every single contractor, subcontractor and sub, sub-contractor that did work on the island. For every entity, every public entity, whether it was a municipality or public or state agency, from the beginning was just insane, and the fact that FEMA set up the recovery office in a way that transitions to several different iterations of different systems, like, made it way too **challenging for them (local workers) to track or, like, keep up with what was being asked of them to do on an administrative level.**” (Global North Participant #9, Female)*

The same participants then detailed how the demanding oversight and mistrust from the federal agencies and leadership, or Global North entities, toward local agencies and leaders debilitated decision-making:

*“The political or executive administration was very polarized. I don’t think that the federal agents gave a shit about what the President (Trump) was saying or doing in a disaster like that. So, I don’t blame the*

*shortfalls on like, oh, it's because the administration did not care. I don't think that's true, but in fact, I think the **agency's over-attempt to step in so strongly actually hampered** their (Puerto Rico's) ability to recover." (Global North Participant #6, Male)*

*"There was an interesting like, dichotomy between like the very highly experienced and knowledgeable local agency staff and (American) folks that were clearly just politically appointed, who did not have the subject matter expertise to do the work that was needed. Also, because of the financial situation in Puerto Rico there was an inherent lack of trust between the federal government and the local government, and how they were going to be utilizing the funding that was given to them. And so, with that **lack of trust, there was a kind of 'prove us right' attitude. They wanted to make sure (Puerto Ricans) were being responsible, but it was almost to the point of like them not being able to do anything, like it was crippling**, like the anxiety that they had and making sure they were following the rules and that they weren't spending things like inappropriately..." (Global North Participant #9, Female)*

*"FEMA and federal agencies were coming in and saying, 'here are your options. These are all legitimate options of how to tackle the recovery or like what path to take, you just have to make a decision' (Puerto Ricans) were just like, well, 'I don't want to make that decision. I don't want to sign off on that' So that kind of lack of decision making caused a lot of delays, and it's to no fault of their own like, (Puerto Rican leadership) were basically told (by U.S. officials), **'we're putting all of these extra layers of red tape on the process because you don't have any funding, and we're giving you billions of dollars with the expectation of spending it appropriately, and if you don't spend it appropriately you might go to jail,'** which of course, made (Puerto Rican) folks feel really uncomfortable about key decision points." (Global North Participant #9, Female)*

The chosen excerpts exemplify the presence of mistrust between both United States and Puerto Rico, but manifested through a bureaucratic situation, which consequently affected locals receiving needed help and services in a timely manner. The Global North interviewees had observed other states' recovery programs outside of Puerto Rico, so their insights were included to support how uncompromising federal agencies were in expecting '100 percent documentation' before administering funds.

The interviewees first-hand observations from the leadership and practitioner level can be connected to Rivera's essay on disaster coloniality where she describes how "deep colonizing becomes embedded within planning procedures and processes," which result in further violence and dispossession (Rivera, 2020, pg. 1). From the overall leadership perspective, it illustrates how the recovery planning procedures and processes veered Puerto Rican leaders into an uncompromising position. Based on these excerpts, their options were to move forward with the programming requirements and adhere to the oversight, or else risk losing funding entirely.

The Puerto Rican practitioners’ perspective reaffirms this disconnect and illustrates how the time-consuming reporting process and parameters limits technical professionals’ ability to conduct meaningful community engagement and

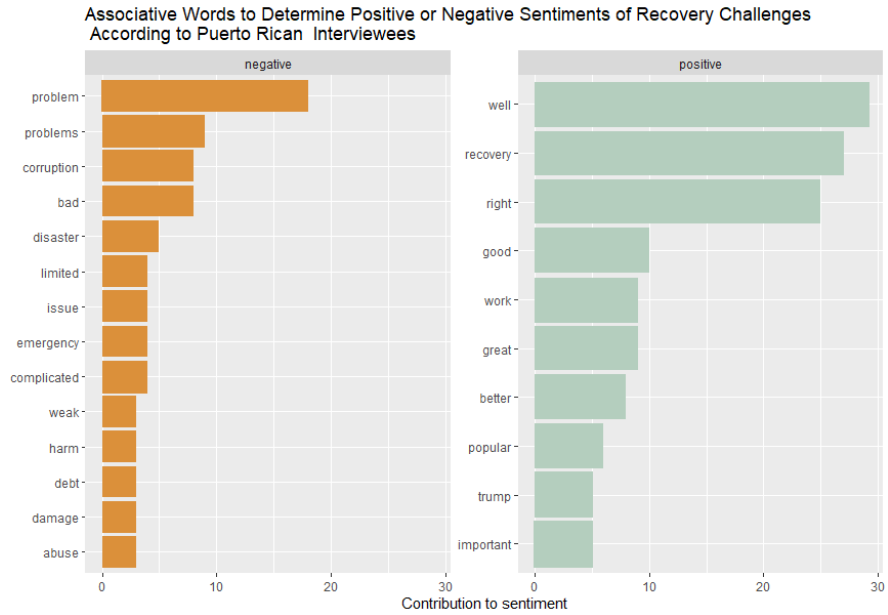


Table 8 Bureaucratic restriction results of thematic analysis of Global South interviewees.

planning. Table 8 sentiment analysis results of the Puerto Rican interviewees show words such as “limited,” “problem,” and “complicated,” along with an ‘100 percent or else’ type of expectation implies a top-down management style not enforced in other United States recovery programs but Puerto Rico.

Therefore, setting unrealistic expectations upon a small workforce to comply with all these strict parameters to receive funding during the limited program timeframe demonstrates an unequal power dynamic. More importantly, this pre-existing structural racism exemplifies post-colonialism (or in this case, neo-colonialism) further perpetuating disaster risk vulnerability because these bureaucratic processes inhibit progress (or funding) from reaching the communities.

## Chapter 5: Global South Perceptions of Post-Disaster Recovery Challenges- Corruption

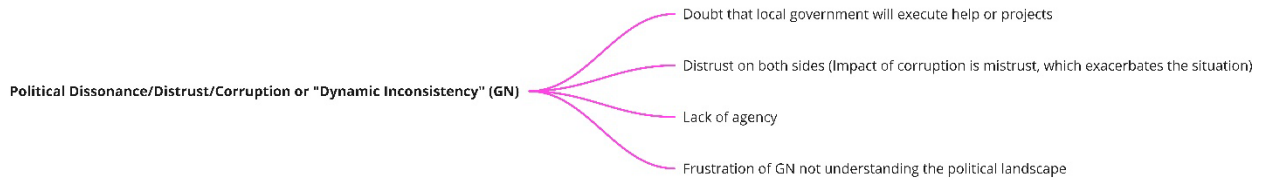


Figure 7 Corruption results of the thematic analysis of Global South interviewees.

The second major theme identified by Global South participants and acknowledged by Global North participants are issues of mistrust and corruption of the Puerto Rican government. Figure 9 shows consequential sub-themes such as lack of agency, as well as frustration and mistrust between both federal and local agency parties in recovery project execution.

The following quotes are excerpts about how participants visualize Puerto Rico’s future, which is ideally without corruption, and was (almost unanimously) identified by all participants as the main recovery challenge:

*“What I want for the future of Puerto Rico is for there to be less corruption, (despite the top-down, heavy supervision from United States) the (local government) could be stealing a lot of money, because here (in Puerto Rico) the corruption of that party, specifically the one in power, has them. They have a lot of private companies owned by people who donate a lot of money to the party and that is the exchange between the private sector and the government...like **the recovery did not tackle one of the biggest problems here, which is the permitting mafia! That despite everything the recovery and federal agencies tried to accomplish, it had no effect on that! Everything is still the same!**” (Global South Participant #1)*

*“(The Department of) Education in Puerto Rico receives millions almost billions every year in federal funds for education, but it gets lost in the bureaucracy and in the contracts of the helper, the helper’s helper, the helper’s helper helper...” (Global South Participant #2)*

The Global North perspective on corruption within the recovery process was witnessed first-hand and observed from the leadership level:

*“The hotel I was staying at...there was a mayor meeting with a representative who owned a solar company. The owner of the company said to the mayor, ‘this is what I can offer you...for the lower income folks, we’re going to offer this level of solar panel because they work all day and don’t need to run appliances all day...but for the wealthy of your municipality, we can offer a higher end solar panel...but I need you to give me X millions of dollars’ I went to work, **I told my supervisor and she said ‘there is nothing we can do’ but this happens in the U.S., no matter what state, when disasters happen, crooks***

*from come out of their homes, targeting the elderly who have lost their property and tricking them out of their money.” (Global North Participant #10)*

*“Corruption at the executive level was a massive problem as well, executive, federally or state or at the Commonwealth level. They were clearly playing for time. In my opinion, they were playing for time, especially (PREMA) **they were playing with time more than anyone because they were very slow in providing the required documentation to get things rebuilt.** And I think the reason they were doing that, just my opinion, leadership at the highest levels of that agency knew the longer money was not disbursed to (PREPA) that the political pressure would increase, and that political pressure would increase on the federal government and would trickle down politically to the executive administration. **So, the longer money was disbursed, the more pressure there will be, in my opinion, was potentially done so they could get away with stuff that they have a history of getting away with.**” (Global North Participant #6)*

The same participant recalled a specific moment where leadership was frustrated and observed the local government agencies ‘playing for time’:

*“(The Federal Coordinating Officer) wanted to push the money and projects out, and “the (energy sector chief) stood up in front of that whole building. And he was like, ‘**we can say we’re going to do it as much as we want, but if don’t get what we need from (undisclosed state agency) there’s nothing we can do. And we (the energy sector) have been asking for this documentation.**’ He had the balls to ask that in front of the whole audience, because that’s what in my opinion, was what was going on. Let the political pressure build until they could get away with it. That was the shared opinion among many people.” (Global North Participant #6)*

The interviews acknowledge how corruption cripples’ society and politics, and manifests during post-disaster contractor deals. All of this intensifies internal tensions and mistrust amongst Puerto Ricans to each other, and consequently opens to paternalistic attitudes and regulations from United States. The following section details examples of how neoliberal policies has affected Puerto Rican contemporary history, and subsequently recovery challenges. Therefore, this section will initially connect beyond how corruption thrives in a post-disaster environment through Puerto Rico’s history of colonial rule. The subsequent section will focus on how this colonial relationship has morphed through present-day neoliberal and austerity measures.

For the purposes of this study, it is important to briefly uncover *why* there is mistrust and *where* did this perception of Puerto Rico lacking agency originate. Furthermore, understand *how* the United States’ historical role as a colonizer plays a role in Puerto Rico’s present-day disaster recovery challenges. In the North American Congress on Latin America’s journal article,

“Corruption Narrative and Colonial Technologies in Puerto Rico,” author Villanueva begins with how Puerto Rico, and other non-Global North U.S. territories, were listed in the “European Commission’s top twenty-two jurisdictions deficient in combatting money laundering and ‘terrorist financing’” (Villanueva, 2019, pg.1). To clarify, solely U.S. territories, such as American Samoa, Guam, Virgin Islands, were included on the European Commission’s list who have also experienced U.S. colonization and imperialism like Puerto Rico.

Referring to the previous Global North and South literature, right away one can immediately notice the double standard of corruption solely existing in Global South-like U.S. territories, which perpetuates a relationship of, “colonial and postcolonial subjects as (being) deficient, and in need of intense monitoring to discipline their corrupt tendencies” (Villanueva, 2019, pg. 1). Paternalism is exemplified through the interviews included in this and the previous section detailing accounts of over-supervision, skepticism, and undertones from the U.S. that the Puerto Rican government could not manage or handle the recovery funds.

The over-supervision of colonial subjects may stem from the early 20<sup>th</sup> century when U.S. capitalists patrolled Puerto Rican rural, sugarcane plantations and “exploited the legal ambiguity of new (Caribbean) colonies to circumvent U.S. federal banking laws” and continuously, “buy the favor of colonial officials, and bypass local regulations to forcibly acquire land, assets, and a large labor force” (Villanueva, 2019, pg. 4). By the Great Depression, indebted *colonos* or sugarcane planters had limited options but to take out loans and credits from Wall Street bankers, which resulted in selling their land.

According to Villanueva, by 1935 “four absentee-owned sugar plantations directly managed 25 percent of all land devoted to sugarcane and 45 percent of the sugar produced in Puerto Rico came from their mills” (2019, pg. 4). The concentration of wealth to a miniscule

number of land holders led to workers, or *agregados*, being forced to live in unsafe and unsanitary housing units located in the sugar plantations in exchange for labor and left with limited or no freedom of speech and assembly. Despite having rights to vote, *agregados* were forced into an uncompromising position to vote for political parties that favored sugar plantation owners out of fear of eviction.

The election of the first democratically elected Puerto Rican Governor, Luis Muñoz Marín in 1948, led to legislation that granted land and expanded voting rights to *agregados*. Despite the ground-breaking legislative victories, the *agregado* or Creole class did not accumulate enough capital nor technical capacity to manage industrial programs. Moreover, Governor Marín catalyzed Puerto Rico's economic growth through industrialization, but through tax incentive programs encouraging industries to come from United States, not Puerto Rico.

As Puerto Rico gained more autonomy throughout the 1950s the Constitution granted “public corporations the juridical power to manage and distribute federal funds, private investments, and fiscal contributions” (Villanueva, 2019, pg. 5). Mentioned previously in the literature review, ‘Operation Bootstrap’ introduced rapid technological and economic development in Puerto Rico, which despite immense economic growth, profit and income was leaving the island to investors located abroad. As a result of this extractive process, Villanueva argues that for Puerto Ricans to maintain their class status, “in a neocolonial economy with limited surplus capital to redistribute, many took recourse on their privileges and close connections with strategic government officials” to secure additional favors and profits (Villanueva, 2019, pg. 6). The additional and exclusive access to capital by a limited number of ruling elites, then, translates to modern-day practices of securing contracts through the ruling classes and parties.

There may be other complex, psychological rationale for why corruption persists in society. However, current day issues of corrupt contractor deals can be dated to Puerto Rico’s colonial history of sugar cane plantation and extraction. Then and now, there was a reliance on political parties and the ruling classes maintained their status through access to connections and favors. Consequently, all of this maintains a dynamic where whoever is in charge, or closest to the colonizer, owns the most capital and power, and justifies this paternalistic belief that Puerto Ricans are not capable of being trusted and must be supervised. Ultimately, Puerto Rican communities suffer from not reaching its fullest potential of economic and societal growth due to this highly charged, unequal power dynamic, and corruption.

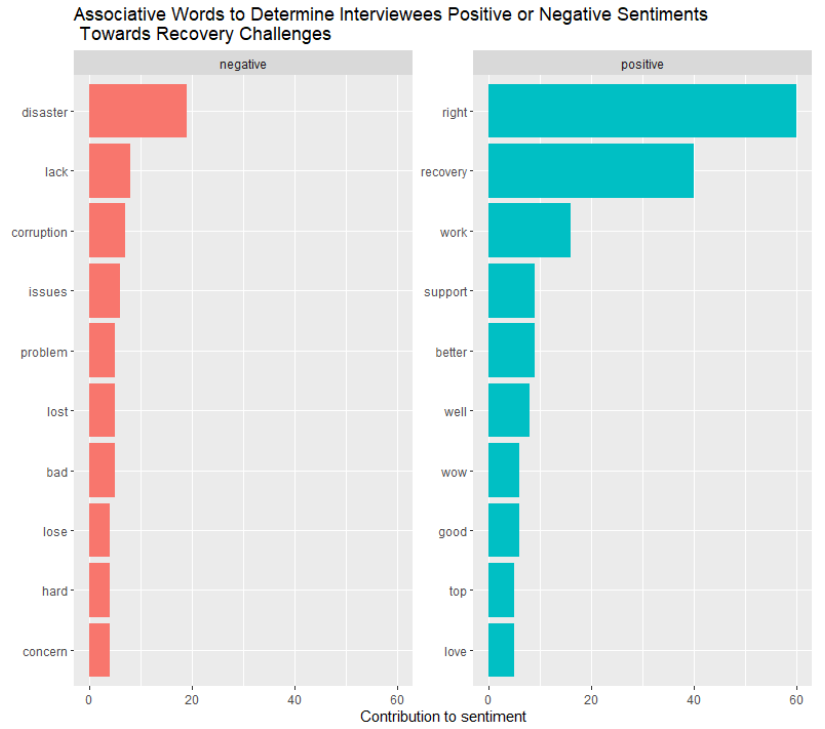
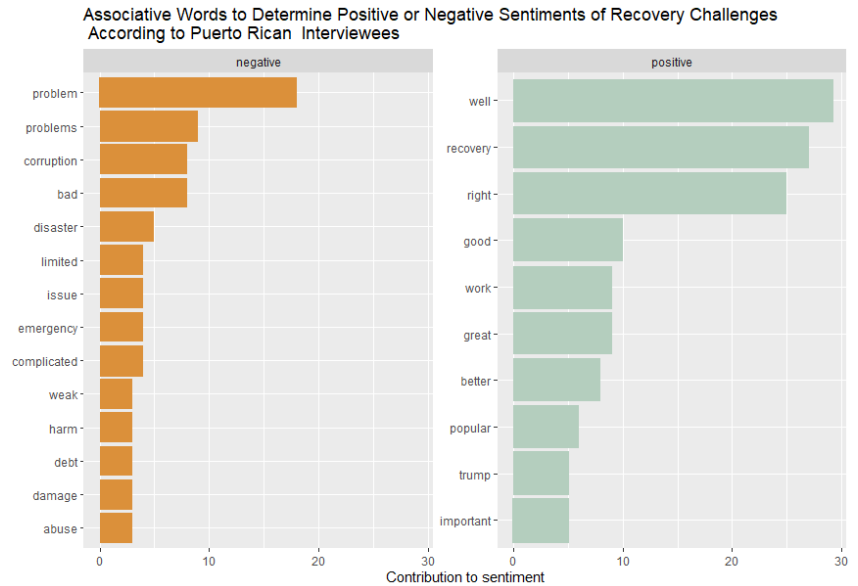


Table 9 Afinn, NRC, Bing sentiment dictionary results of recovery challenges perceived by Global North and South participants.

Table 9 shows the sentiment analysis results demonstrate how both the Global North and South list “corruption” as being a

recovery challenge, along with “damage,” “abuse” and the next section will detail further how “debt” through neoliberal policies have further implications for society and the recovery.

### Chapter 5: Global South Perceptions of the Post-Disaster Recovery Challenges- Neo-liberalism

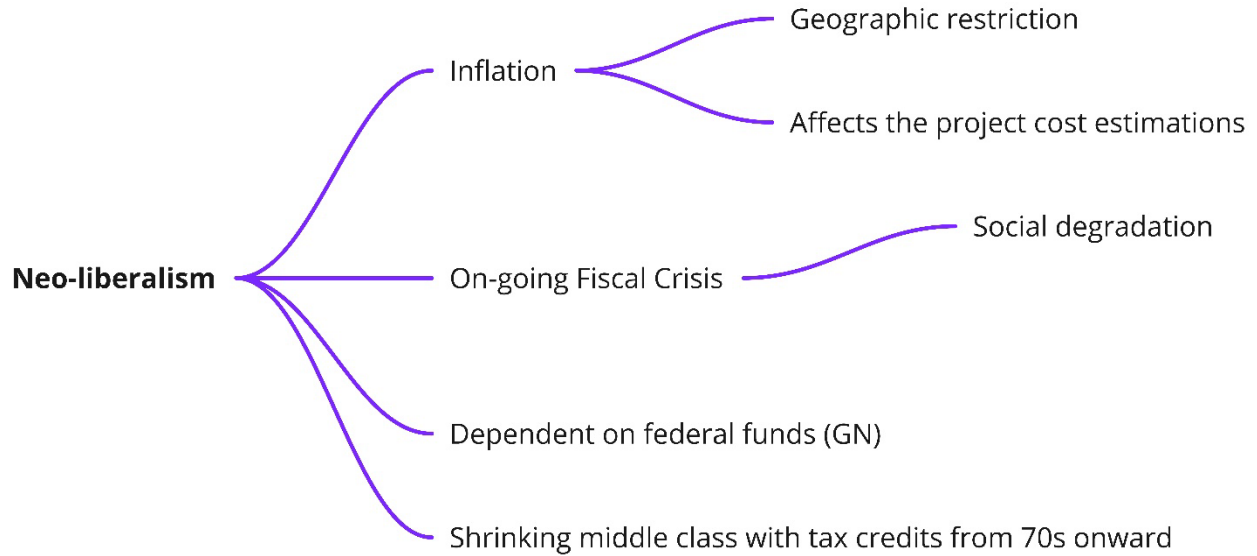


Figure 8 Neoliberalism results of the thematic analysis of Global South interviewees.

Neo-liberalism is another overarching theme that dominated the Global South conversations in reflecting how the decades long fiscal crisis has been thinning the social services sector in Puerto Rico. The following quotations are chosen by sub-theme when interviewees, with a strong background in economic development, elaborated on the consequences of neo-liberalism and how it has been impeding the disaster recovery process. In terms of inflation:

*“And now with the pandemic and state of global affairs is harming the recovery, because when (project cost) estimates are made, they make an estimate at the current moment...and that’s what hurts, is that inflation a year and half later affects the recovery in terms of construction costs”. (Global South Participant #3, Male)*

Another aspect is the numerous, almost visceral, societal needs that must be addressed through funding. However, this then concurrently reinforces a dependent relationship to the United States:

*“Puerto Rico has practically no monetary policy because it uses the dollar and they depend a lot on the policies that are made there in the (U.S.) Central Bank, specifically for Puerto Rico...but all the business relationships in Puerto Rico are through Jacksonville since everything that is imported to Puerto Rico must come through Jacksonville, Florida.” (Global South Participant #5, Male)*

*“We depend a lot on federal funds because Puerto Rico is an economy that is highly dependent on federal funds, and a large portion of the funds is dependent on the states’ economy. In other words, we have to wait for the help given to formulate policy to be able to pay for better infrastructure or to be able to do other projects. All of this greatly affects the scope of economic policy. **The economic problem result in other social problem such as increases in unemployment, suicides, spousal abuse, more divorces.**” (Global South Participant #5, Male)*

A participant from the Global North also noted the sub-themes of a shrinking middle class, and dependency stemming from Puerto Rico’s austerity measures:

*“And it’s hard to build I think, psychologically, it’s hard to independently identify and work toward your goals when they’re so dependent on federal support. Because there are communities (in the U.S.) I’ve worked with that are like, even if the Feds weren’t there, and when you’re not dependent on federal funds, **they’re like ‘we’re gonna rebuild our community on our own, and the feds can take a backset and give us money, but we’re the ones driving the ship’**. But I think because Puerto has been so dependent on federal funds for so long. They don’t have the same, agency or sovereignty.” (Global North Participant #6, Male)*

*“(Puerto Rico) was able to build like the wealthiest middle class in United States during the 70s and 80s. So, I don’t think you’d exclusively blame everything on America, I don’t know. Does the colonial status really matter? There’s a relationship between the federal government as a territory. But they had the highest family income in the US, compared to any state...a lot dried up in the pharmaceutical tax credits offered that went away. **So, (Puerto Rico) can do it! They did it for decades! But when your economy is not self-sufficient anymore, you’re dependent on federal funds, it’s hard to build your own future.**” (Global North Participant #6, Male)*

Neo-liberalism is not explicitly stated by any of the interviewees as being a recovery challenge. However, these shared observances existed prior to hurricane Maria and has exacerbated and exposed societal degradation due to Puerto Rico’s decades-long fiscal crisis. This section will further examine why neoliberalism is revealing itself through the disaster recovery challenges, and consequently how Puerto Rico’s contemporary history with United States influences this.

An important aspect Rivera explores in her essay, “Disaster Colonialism: A Commentary on Disasters beyond Singular Events to Structural Violence,” is how dependency (or ongoing colonialism) operates through Puerto Rico’s fiscal crisis by facilitating ‘spatial dispossession,’

which thus exposes, “procedural vulnerabilities operating through pre- and post-disaster response” (Rivera, 2020, pg. 8). The spatial dispossession taking place currently dates to 2006 when the tax incentive programs and capital, as mentioned by the interviewees, phased out and those who profited from the immense economic growth was mainly benefiting investors located outside Puerto Rico.

Unfortunately, the lack of internal investment over time left the Puerto Rican government no choice but to take out loans and, “borrowed capital to pay debt obligations to fund daily operations” and “borrowed more than it could pay” (Villanueva, 2019, pg. 6). All of this led to the PROMESA Act of 2016, which led to the formation of *la Junta* who dictates bond payback, budgetary cuts, and use of federal funds, which led to the major cuts in public services such as the arts, education, and overall welfare. Privatizing and strict austerity measures to pay back bondholders has led to weak societal and infrastructural vulnerabilities over time, which was exposed during hurricane Maria response until present day.

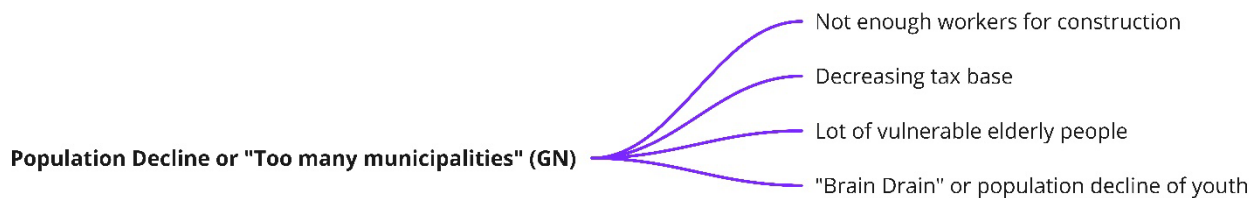
Apart from the procedural vulnerabilities of disaster coloniality, the consequences of mass privatization and budgetary cuts through *la Junta* has led to “systems of dispossession resulting in a political and economic relation, which the sovereignty of a nation or people rests on the power of another” (Rivera, 2020, pg. 8). Interviewees from both the Global North and South referenced that to reconstruct a new Puerto Rico, one must address the fiscal and economic dependency on federal funding. Doing so, Puerto Rico must fully confront the deep societal issues to avoid future destruction as seen during the 2017 hurricane season.

Dependency is not only revealed through the reliance on federal funding, but also through the early stages of reconstruction during the procurement process. According to the bipartisan policy think tank Center for New Economy (CNE)’s concluded that between September 20, 2017,

through August 22, 2018, “\$4.3 billion (or 90%) Puerto Rico received in reconstruction funds have been granted in contracts to mainland companies” (Lamba-Nieves, 2018, pg. 11). CNE’s study is further evidence of how coloniality translates into disaster capitalism by directly investing and contracting away jobs that could have been locally sourced and managed.

The Global South perceptions and frustrations of post-disaster recovery challenges are examples of modern day coloniality systems evidenced through the federal reconstruction projects and reporting. More importantly, history shows that all these present-day systems collectively prevent(ed) communities from receiving the funds, planning, engagement, and investment needed to adequately recovery and progress forward. The following section will show how neo-liberalism, corruption and bureaucracy has contributed to the societal, infrastructural, and ‘procedural vulnerabilities’ Puerto Rico carries from the past and must account for in this post-Maria recovery environment.

**Chapter 5: Global South / North Perceptions of Post-Disaster Recovery Challenges- Population Decline and Strain on Municipal Services and Capacity**



*Figure 9 Population declines of the thematic analysis of Global South interviewees.*

Figure 11 and 12’s Dual-perspective on population decline and challenges of municipal abundance



Figure 10 Thematic analysis results of Global North interviewees.

As a bridge into the Global North perspective, there was overlapping observations on how population decline, and the municipal dynamic affects the recovery process. Both Puerto Ricans and Americans mentioned how the decades long fiscal crisis has contributed to the mass migration of youth and technical capacity over time. The following quotations are examples of how this decline has also led to a decline in construction workers:

“There is **not enough labor nor housing** to meet the number of people who would have to work in construction. There is not enough material nor coordination for the construction and demolition process...” (Global South Participant #3, Male)

“The problem is that have a **labor shortage** in Puerto Rico. There is discussion to do the construction projects with youth and kids and they are in process of being assigned and everything. All the projects would take an additional 30,000 people than we have...and **we do not have control of our immigration process** to import labor hands from the Dominican Republic, or wherever...” (Global South Participant #6, Male)

The Global North perspective the quotations are related to how the population decrease has contributed to recovery challenges at the municipal level in terms of project coordination, decreasing tax base, and capacity:

“I think how the government is structured with 78 municipalities, for a place that’s about the size of Delaware, so they built in this like conflict of interest that’s **hyper localized** because they all have their own mayors. And so, there’s politics at such a small level, that like, **joint goal making is really difficult**. And I think that’s always going to be a problem until those municipalities are turned into bigger zones, which they don’t want right? Because those mayors want the power that they have, even if it’s limited. And so, like coordinating infrastructure projects across multiple, small municipalities was brutal.” (Global North Participant #9, Female)

The participants continued:

“Because everyone wants control, that there’s **too many decision makers to the point where no one’s making decisions**...and there are municipalities that have all the power in the world, and then there are municipalities that have none. There’s like 10 that have all of it, and the rest don’t.” (Global North #9, Female)

Both Global North and South voices defined, ‘population decline,’ and the ‘overabundance of municipalities,’ as prominent themes in disaster recovery challenges. However, they reveal from different perspectives how these themes affect Puerto Rican society from its workforce capacity to perform reconstruction projects to municipal recovery project coordination from a federal level. As a continuation, this section will reflect on how population decline exemplifies Rivera’s ‘pre-existing procedural vulnerabilities,’ which stems from the decades long fiscal crisis and revealed during the post-disaster response and recovery. Again, it reflects how Puerto Rico’s contemporary history with United States influences and operates through disaster colonialism.

During interviews with Americans and Puerto Ricans, both mentioned the disruption of political party changes, and how this turnover affects the capacity of municipal staff and project continuity in ensuring federal reporting requirements and projects. Puerto Rico has a law, ‘Ley Municipios Autonomos,’ which grants municipal autonomy in overriding Commonwealth decisions that affect their locality.

The Center for New Economy’s report, ‘Transforming the Recovery into Locally-lead Growth,’ analyzed that Puerto Rico’s (pre-pandemic) economic activity, because of the fiscal crisis and 2017 hurricane season, shrank by 18 percent and employment levels decreased by 20 percent in 2019. Additionally, “one third of the government was reduced and the total population decline throughout the decade has consistently decreased by 12 percent” (Lamba-Nieves, 2018, pg. 35). As a result, the highest source of income for the municipalities studied came from outside grants and contributions. All of this is evidence to municipalities’ fiscal vulnerability due to the political and staffing turnovers at the municipal, Commonwealth, and federal government level.

According to Calverbert’s thesis, ‘Municipal Services and Urban Planning in the Context of Puerto Rico,’ they elaborate on how austerity measures have resulted in project documentation inconsistencies and staff suspensions due to administrative changes taking place every election cycle. Consequently, smaller municipalities are behind in “preparing required documents including ones that the central government audits,” which constrains municipalities from undertaking development projects (Calverbert, 2019, pg. 73). Based on Calverbert’s study on

comparing Municipal expenses, “there is an established yearly budget for each municipality the cost of operations tends to shift in time,” showcasing staffing inconsistencies and, “discretionary decisions toward what must get funded” (Calverbert, 2019,

pg. 73). These constant turnovers and the fiscal

decline have contributed to the inaction of local policies and the “central focus has been implementing measures to capture revenue or stay away from spending,” which leaves less flexibility to redistribute funds for communities (Calverbert, 2019, pg. 76). 78 municipalities having their own development and decision process has several implications for urban planning in a reconstruction environment.

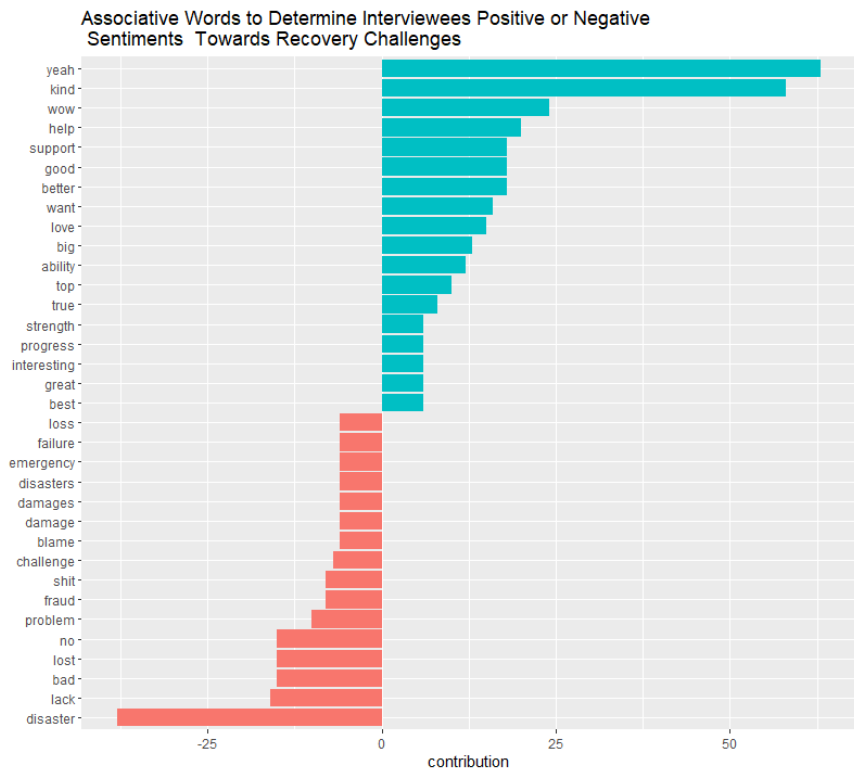


Figure 11 Afinn, NRC, Bing sentiment dictionary results related to government services and capacity of Global North interviewees.

Municipal autonomy is a controversial topic but highlights the importance of integral planning at the local level. The abundance of municipalities operating their own, respective process may result in disjointed planning, and further decelerate the reconstruction process. Each of the 78 municipalities will be at different recovery paces and would risk the population not receiving adequate services.

Figure 14 represents frequently mentioned by Puerto Rican interviewees such as “weak,”

“harm,” “debt,” “damage”; in comparison to American interviewees that did not mention weakness or vulnerability, but rather larger scale observations of challenges. As mentioned per Rivera, this

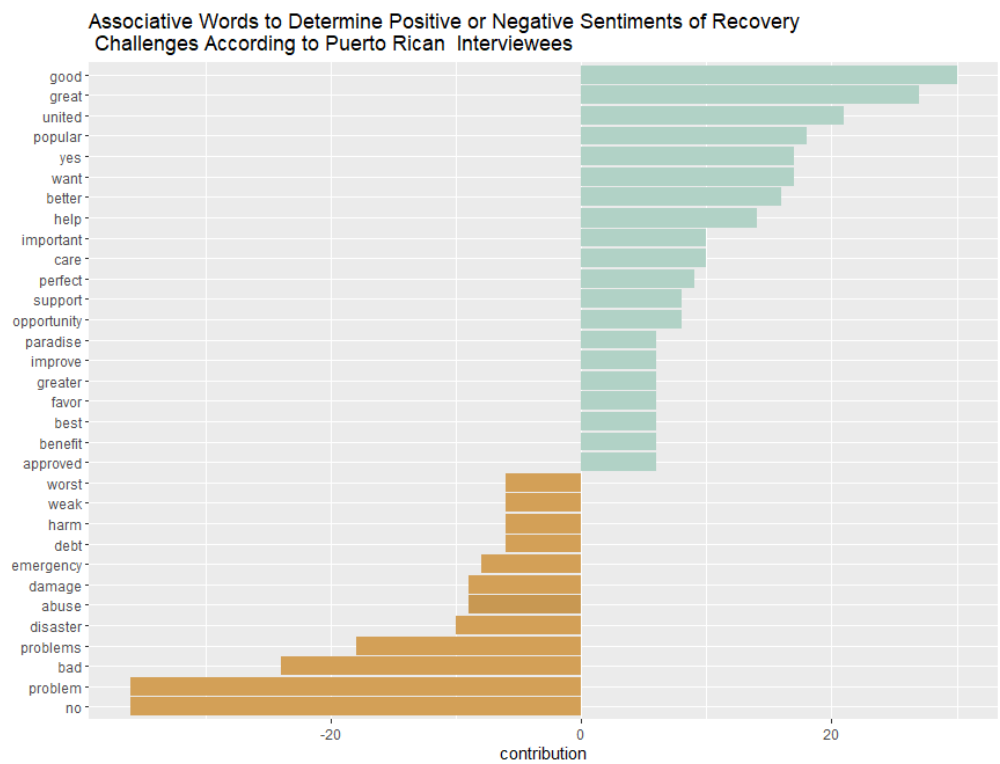
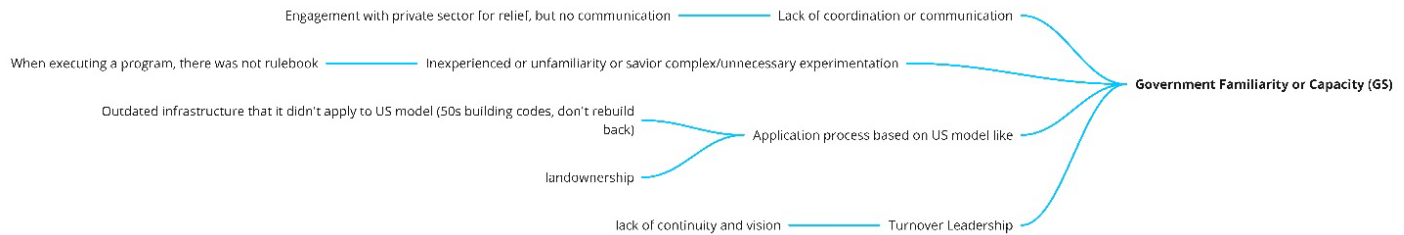


Figure 12 Afinn, NRC, Bing sentiment dictionary results related to government services and capacity of Global South interviewees.

disjointed recovery planning and unequal power dynamics would marginalize smaller municipalities with less fiscal and technical capacity into a vicious cycle of damaged homes and residents being continuously exposed to future storms.

## **Chapter 5: Global North Perceptions of the Post-Disaster Recovery Challenges- Government Familiarity and Capacity**



*Figure 13 Government Capacity results of the thematic analysis of Global North interviewees.*

The remaining themes were from the Global North observations of government capacity and treatment of workers from the top-down, which affected the overall disaster response and recovery. When asked of the main recovery challenges, the responses ranged from the federal public and individual assistance program’s misalignment with the Puerto Rican context; overall coordination troubles between the state and federal emergency management workers; and unnecessary leadership experimentation. The following quotations evidences disaster coloniality within a disaster recovery operation at various levels:

One of the federal shortfalls mentioned was the restrictions of FEMA’s public assistance program being applied in Puerto Rico:

“FEMA encountered the same problem in Paradise City, CA after the wildfires, FEMA programs are not intended to rebuild impacted communities. They’re supposed to support the recovery, but the public assistance program’s mandate is that you build back to previous conditions. They’re also resilience and mitigation programs that are supported to build back better, but those are not the primary mission... (when speaking about Puerto Rico) **You have building piping built in the 50s! You can’t build back to 50s piping! Trying to meet that infrastructure gap was a real challenge. The Puerto Rican agencies were not prepared, and it was mismanaged to the point where they were not ready.** Hopefully they will be in the future, but from the federal perspective and policy-wise that is where we (FEMA) fell short.” (Global North Participant #6, Male)

Another challenge indicated was the lack of coordination, communication, and leadership conflicts between the Commonwealth and federal government:

“The federal government was like, ‘no we’re controlling this, we’re going to be the ones making the decisions about what’s getting in and out’. But communications were out for months? I think (AT&T? Claro?) **offered to deliver remote telecommunications services across the whole island and there could have been telecoms in a week. But because there wasn’t a strong connection to the private sector that message never made it to headquarters, nor to the (San Juan) port.** Because they were so focused on getting water and food out, like they could have telecom equipment. There was a lot of instances where private sector partners, if FEMA had coordinated with them, would have been in a better place. A lot of things come down to a lack of telephone, right? So that was a significant misstep by the agency, apart from the inflexible program delivery.” (Global North Participant #6, Male)

Further elaborated was the unnecessary experimentation and ‘White Savior Complex’ from the leadership level:

“There was always a clash between that (American) leader and our (Puerto Rican) leader who obviously, you know, does have the background and he saw right through it (the white savior complex), and said **‘you’re not even listening to what people need and want’...but that was like an everyday thing, because the two people, the two leaders who were supposed to be working together, side by side, day in and day out, literally could not work together...**that was the section I worked in so I can imagine that was probably happening elsewhere.” (Global North Participant #4, Female)

“There was nothing simple about any of the things that we did. Certain leadership from FEMA decided to come in and you know, try new things like, it’s a novel disaster a catastrophic event, like the assumption may have been that something new was needed. **But like, by doing all these experimental procedures, and applying all these experimental methodologies it made it harder.** A lot of what we were doing didn’t have a doctrine to support it.” (Global North Participant #9, Female)

“So, trying to train an entirely local staff on how to execute on a program or support a normal procedure it was near to impossible. **There was no rulebook for what we were doing. And so, everyone was at a disadvantage. Like, we were trying a whole bunch of new approaches and trying to be innovative,** but frankly, from my perspective looking back on it now. Had we adjusted on like standard approaches and figuring out intentional ways of being innovative we would have been like a million light years ahead of where we are now.” (Global North Participant #9, Female)

The Global North perspective was included to observe how the disaster recovery was managed from the top-level, and how the Puerto Rican recovery differed from other operations nation-wide in terms of policy framework, application, and implementation. These next two sections will analyze government capacity from the federal program perspective, along with communication and coordination, and inter-relations between leaders from the U.S. and Puerto

Rico. Ultimately, it will exemplify additional aspects of disaster coloniality contributing to further risk vulnerability.

The remaining aspects explored by Rivera in her essay, ‘Disaster Colonialism: A Commentary on Disasters beyond Singular Events to Structural Violence,’ is how dependency operates through long-standing patterns of power, in “denoting a political and economic relation in which the sovereignty of a nation or people rests on the power of another nation,” and this ‘denotation’ and ‘resting’ on another makes a nation into an empire (Rivera, 2020, pg. 2). In this instance, the interviewee mentioned a gap in aging infrastructure affecting eligibility in FEMA’s Public Assistance, which supports immediate and long-term recovery efforts along with Hazard Mitigation and HUD’s CDBG-DR programs.

Public Assistance (PA) is a FEMA program that provides funding to local governments to install emergency protective measures, remove debris, and repair or replace eligible facilities. In the aftermath of the 2017 hurricane season, the authorized “permanent work” for all 78 Puerto Rican municipalities, which expands beyond debris removal to repairing, reconstructing, and replacing damaged facilities deemed eligible.

Normally, PA’s federal cost share covers 75 percent of urgent recovery needs, however the President and Congress authorized the increase to 100 percent due to the severity of the hurricane’s impacts “for a limited period of time” (Congressional Research Service, 2020, pg. 21). This enactment was done with the right intentions, but even still it denotates a power dynamic where Puerto Rico is dependent on bureaucratic Congressional approvals of the President to determine whether the Commonwealth or territory’s needs are urgent rather than relying on their own sovereignty to determine this.

Additionally, the interviewee highlighted an example of a PA program implementation shortfall, which was the expected procedure of funding repairs back to its original condition. According to several interviewees, it was not sensible to repair back to Puerto Rico's original conditions due to aging infrastructure, lack of building codes, and inspectors to promote climatic resilience and lessen disaster risk. According to the Congressional Research Service's status report on FEMA, SBA and HUD's recovery challenges, there were efforts to override PA's 'repairing to original conditions' through the Stafford Act amendment's 'Sandy Recovery Improvement Act' (SRIA) of 2012.

The 'Alternative Procedures' pilot program was used to "reduce costs, reward timely and adept completion of PA projects," and to allow for applicants "to complete projects on the basis of need rather than pre-disaster design" to bypass PA standard procedures similar to what the interviewee had mentioned (Congressional Research Service, 2020, pg. 21). Consequently, FEMA had issued three iterations of this PA Alternative Procedures guidance and policy changes to COR3, which the Congressional Report found to "lack of clear, consistent, and accessible guidance," thus contributing to recovery delays from the top-level (Congressional Research Service, 2020, pg. 21).

The remaining sub-themes found throughout the interviews in relation to government capacity conveyed additional instances of miscommunication and unnecessary experimentation from the leadership level coming off as, 'white savior' complexes fueling recovery challenges. Another aspect of disaster coloniality referenced by Rivera is how "culture, labor, intersubjective relations, and knowledge production" transcends the strict limits of colonial administrations reveal itself through disaster aftermaths (Rivera, 2020, pg. 2). According to the 2014 Encyclopedia of Psychology and Religion, 'subjectivity' is when someone's worldview is limited to their own

perspective and experience; adding ‘inter’ to subjectivity is when two people or groups cognitively agree with each other and relate to others, “out of two diverging subjective perspectives” (Cooper-White, 2014). The quarreling American and Puerto Rican leaders observed by Participant #6 showcases an extreme situation of explicit coloniality where a leader’s intersubjectively perceives themselves as superior and dismissing their colleagues’ local knowledge and technical capacity as wrong and misguided, thus affecting the rest of the working group.

All of this connects back to the political and economic historical relationship where the sovereignty of a nation or people is dismissed due to paternalistic attitudes. In addition, Participant #9 acknowledges how the hurricane recovery was romanticized, which facilitated outsiders to experiment new procedures and approaches early on and disrupted workflow and recovery project delivery mid-way through.

The Congressional Service Report attributed certain challenges to “excessive turnover and lack of necessary expertise of FEMA’s on-site workforce,” and it continued to highlight the “staffing shortages in its after-action report on the 2017 hurricane response efforts” (Congressional Research Service, 2020, pg. 74). Turnover was indeed a challenge mentioned by both Global North and South interviewees. However, the report overlooks-that despite having a workforce of 2,000 employees-there was an unwillingness to take cultural competency seriously, which greatly distracted and hindered recovery operations.

Both interviewees’ reference how mismanagement and unnecessary experimentation contributed to some of the many shortfalls of the Public Assistance program. The scale of damage and complexity of infrastructural systems, and Puerto Rico’s fiscal situation led to FEMA designating Puerto Rico as a ‘high risk,’ which justified establishing additional thresholds. From the top-level, PA’s conflicting guidance and switching to a new project formulation and delivery

system model delayed and led to additional recovery challenges. The chosen interview excerpts embody bureaucratic ‘patterns of power’ from the top-down and how disaster coloniality manifested through government capacity in overstepping the Commonwealth’s sovereignty.

### Chapter 5: Global North Perceptions of Post-Disaster Recovery Challenges- Undefined Statehood-Status and Bias

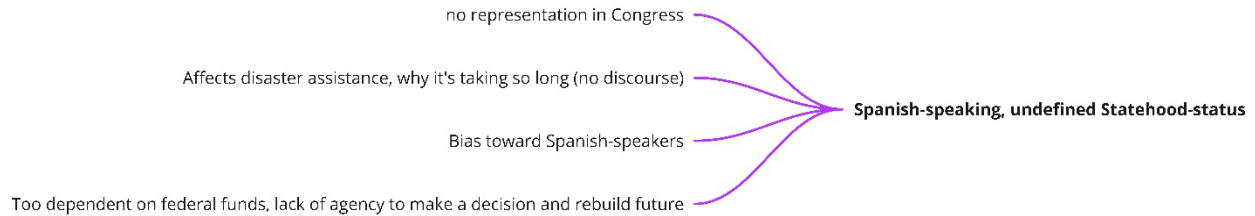


Figure 14 Spanish-speaker bias results of the thematic analysis of Global North interviewees.

The final theme found from interviewing Global North participants is defined as ‘Undefined statehood-status’ and how bias towards Spanish-speaking, Latinos affected disaster recovery work. When asked about the main recovery challenges and whether they observed any cultural clashes in the office, the participants’ responses reflected on the implications of Puerto Rico’s ambiguous statehood status. This ambiguity contributes to lack of political will of U.S. politicians to follow-up with the recovery, and recovery workers biases towards Spanish-speakers. The following quotations include both Global North and South perspective on these sub-themes:

“Puerto Rico is in a really bad like ‘between’ situation where they don’t really have the freedom or representation that a state has, so they’re trying to get the same assistance from FEMA that a state would, but **because they’re not a state and because they don’t have any real representation in Congress, they don’t have any sort of recourse if they don’t get the assistance they’re entitled to.**” (Global North Participant #1, Male)

“I think the fact that it is a territory decreases the political will to help. **Also, I think there are also areas in the U.S. mainland where the really isn’t the political will to do it. And I think a lot of that has to do with the fact that it is a minority population, non-English speaking.** It’s kind of both of those. In certain areas it was perceived like, they don’t speak English so they’re not competent. When that’s not at all the case.” (Global North Participant #1, Male)

“The devastation was visceral. And on top of that the attitudes of many of the people who came from the U.S that went down at the beginning. **They treated (Puerto Rico) like the third world. They were minimized. They were belittled. They were treated like second class citizens. And it come from the top down.** It was very disheartening, an absolute lack of cultural sensitivity.” (Global North Participant #2, Female)

“First leadership there was very military, like a New York Fire Chief background. People that are very mission-oriented around short term goals in rapid succession, and people who are not used to be questioned about their use of giving orders. **Political sensitivities are going to be secondary priorities, especially for Puerto Ricans who are very relationship-oriented in a professional setting. I think that wasn’t on their (leadership’s) radar. They had a mission, and they expected it to be done, and I think if American leadership leaned into their relational aspect, they probably would have had more success.**” (Global North Participant #6, Male)

“There was compassion and empathy, but like, the undertones and perception there was very clear that like, **‘oh Puerto Rico didn’t know what the hell they were doing, so step aside Caribbean Area Division. Let the Americans come in,’ essentially and take over this operation they did it in a way that was horrendously disrespectful like removing people from their positions, placing these white men into positions of power to run an operation like this, somebody who’s not understanding nor sensitive to the cultural implications...**or making sure to trust their local advisors, and like, really truly listen to what locals wanted and needed and just kind of charged forward their vision lacking any kind of consideration, so there was conflict from the beginning.” (Global North Participant #9, Female)

Now, the Puerto Rican perspective on this topic:

“The majority of the population speaking one language, which is Spanish. The recovery effort and the relief effort the vast majority who came only spoke English. And that's where dynamics collided. **There was no way to facilitate communication. That was a stumbling block in the recovery process. There were no communications in Puerto Rico. Like, there was no communication!** There was no Internet, there was no phone! No way to command people.” (Global South Participant #3, Male)

“A cultural clash? Definitely. A vast majority of people. I’m surprised they don’t even know. I heard people saying, **‘I don’t know why we are in Puerto Rico, because Puerto Rico is not even part of the nation.’** So, they didn’t even know what the condition was nor the political relationship with the island. So, they felt since they were there, ‘let’s do as little as possible.’” (Global South Participant #4, Male)

The excerpts from both the Global North and South perspective are uncomfortable to read and explicitly evidence colonialist-type attitudes of paternalism and ‘white savior’ complexes. Rivera’s central argument is that disaster colonialism extends beyond withholding aid, and the interviews corroborate how coloniality is inter-relational beyond the funding disbursement system. It shows how the disaster recovery challenges were exacerbated by the top-down, operational management with paternalistic undertones, and supports that hurricane Maria should not be “framed as singular instances of ‘crises’”, but instead understood as “compounded and

interconnected with societal histories” (Rivera, 2019, pg. 1). In this regard, the societal histories between Puerto Rico and United States have culminated into a lack of respect and empathy in the recovery operation, which has delayed the recovery process due to challenges mentioned in previous sections.

This ‘Americans versus second-class citizens’ type of attitudes reflected in the Global North and South observations of their colleagues are examples of ‘procedural vulnerabilities’ since it is remnants of long-standing colonialism throughout the centuries.

According to Go’s article ‘Chains of the Empire,’ colonial projects are shaped “by the maneuvers of actors in the metropole (the United States),” and those “subjected to the pulls and tugs of all the actors in the chain” (Go, 2000, pg. 7). In this instance, ‘pulls and tugs’ are observations of federal workers not understanding that Puerto Rico is part of the U.S. or overtaking local leadership to ‘save Puerto Rico,’ which has resulted in the inability of Puerto Ricans to drive their recovery. Consequently, this affects Puerto Rico’s realization to accomplish their own

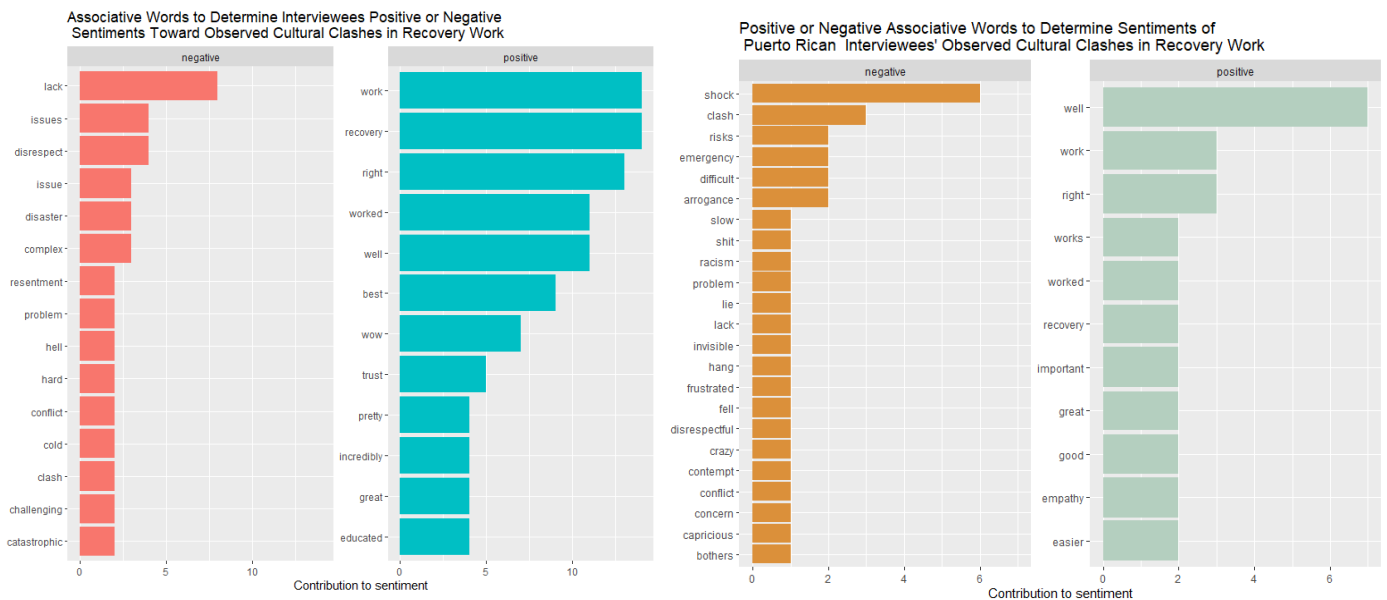


Table 10 Afinn, NRC, Bing sentiment dictionary results of cultural clashes observed during recovery work.

distinctive recovery agendas because of having to accommodate restrictions and requirements, and superiority complexes of federal programs.

It is also reflected in Table 10 sentiment analysis results of the interview transcripts related to this topic. The right table shows how the American interviewees observed “disrespect,” “conflicts,” “resentment,” and “complex” throughout the office and leadership towards implementing policies. Similarly, Puerto Rican interviewees were explicit and sincere in detailing instances of “arrogance,” “racism,” “disrespect,” but also the “frustration” and “capricious” behavior of leadership towards Puerto Rican nuances. These types of procedural vulnerabilities expose how these superiority attitudes that existed before-hand are reflected in current recovery work challenges.

## **Chapter 6: Conclusion-Research Shortcomings**

This research analyzed the early stages of the disaster recovery from 2017 until 2020 before the staff and leadership was ninety percent local, and the recovery shifted to pandemic and earthquake response. Even still, the main idea is to evaluate how the federal and Commonwealth dynamics affected disaster recovery in Puerto Rico early-on when decisions and policies are being implemented that affect the rate of recovery.

In addition, it is important to mention that the Spanish interviews had to be translated to English to conduct the sentiment analysis for comparisons and conclusions. The fact that the analysis and sentiment dictionaries is not available in Spanish showcases a bigger question of why knowledge production is Euro-American, despite the research’s intentions of deconstructing from both Global North and South perspective.

## **Chapter 6: Conclusion-Disaster Recovery Planning & Global North | South Takeaways**

The Top 8 Community Concerns Recorded 1 Year After Hurricane Maria

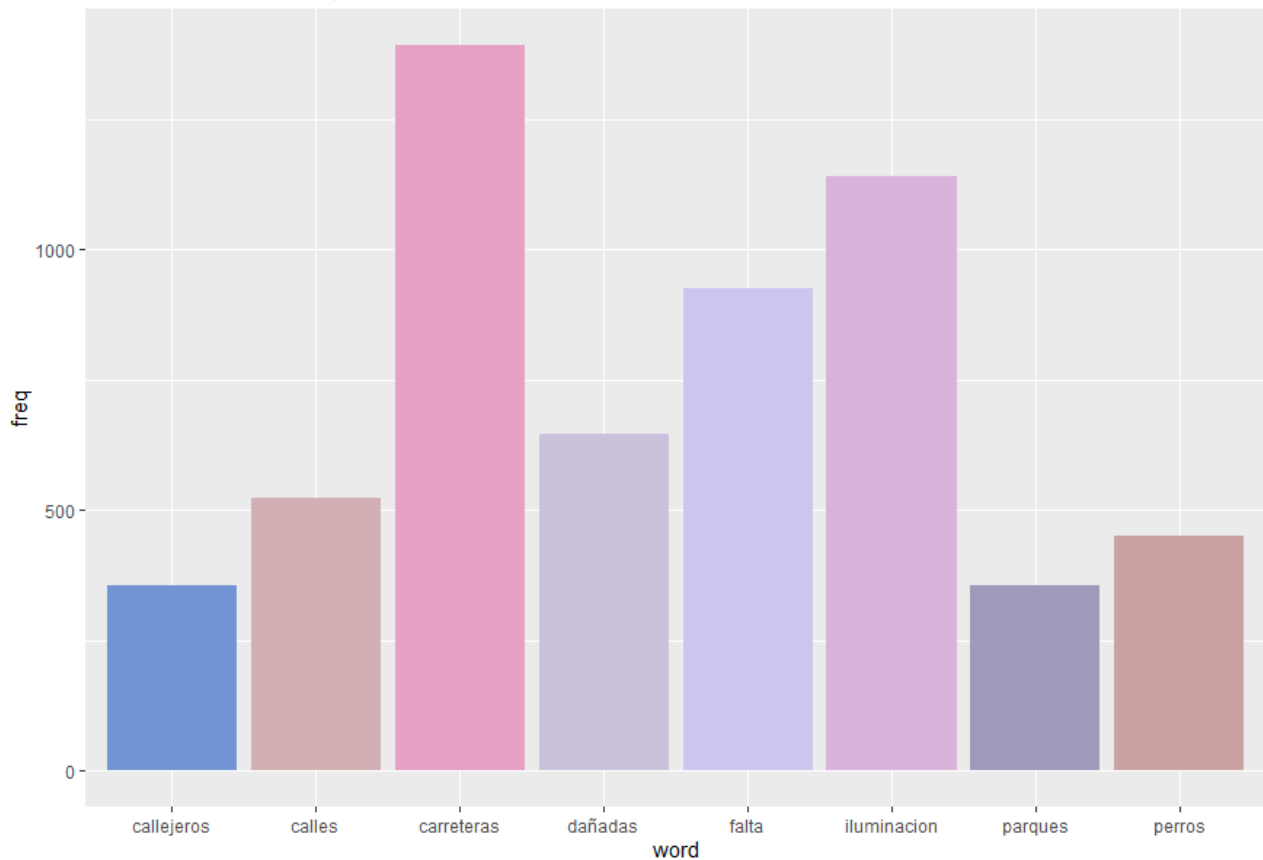


Table 112: Concerns felt by Puerto Rican residents one-year after Hurricanes Irma and Maria.

Returning to back the communities, their voices reflect basic, infrastructural needs missing one year after hurricane Maria because of Puerto Rico’s pre-existing vulnerabilities exposed during the recovery’s early challenges until today.

By using community voices as a baseline one can compare and analyze against the Global North and South perspectives on Puerto Rico’s recovery challenges. In doing this, on can conclude that disaster coloniality, does indeed exist, and is perpetuated through structural inequalities of the U.S. disaster recovery system being implemented in the Puerto Rican context. Hurricane Maria exposed how Puerto Rico’s (neo)colonial history with United States has contributed to present-day recovery challenges uncovered during this research. This study advances the idea that disaster

coloniality manifests through bureaucratic procedures, federal program guidelines, and at a personal level between workers. Consequently, it demonstrates that coloniality distracts and completely misses what the communities want and need to progress forward. Moreover, communities will remain vulnerable to future climatic disasters because of this dissonance and barriers to participation and input in the recovery process.

This study is an investigative, first-hand look at the early stages of the disaster recovery operation, which showcases both the similarities and diverging opinions on recovery challenges from the Puerto Rican and American perspective. It reveals the extreme disconnect between both parties and why community planning gets pushed aside because of the imposed policies and misunderstandings that hinder recovery. More importantly, it unveils how disaster recovery challenges extend beyond the federal process and why practitioners should deeply consider who they are working *with* and *for* to address a community's 'deep-coloniality' or disinvestment to prevent continuous risk to future disasters. Including both perspectives give a comprehensive view of Puerto Rico's post-colonial context, and why it is imperative for planners and professionals to deconstruct societal culture and history to plan 'with' rather than 'for' communities.

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Appendix:

Semi-Structure Interview Question in Spanish and English

1. How long were you (or lived) in Puerto Rico? ¿Cuánto tiempo has vivido en Puerto Rico?
2. What did you do before this job? ¿A qué te dedicabas antes de este trabajo actual?
3. Can you describe your position(s), what were your obligations and expectations? ¿Puedes describir tu posición(es)? ¿Cuáles fueron tus obligaciones y expectativas
4. As an active participant in the recovery (or citizen)-How do you envision Puerto Rico's future? ¿Dónde trabajaste? ¿Tenías tu alguna conexión con el sitio?
5. Do you think the recovery's operational goals (as you understand them) fits this vision that you describe? How has it evolved over the years, especially with COVID? *Como un participante activo en la recuperación o como ciudadano: ¿Como visualizas el future de Puerto Rico?*

6. **Why do you feel there have been recovery challenges? Do you think the relationship with the U.S. plays a role?** *Cuales piensas tú, ¿que (o porque) han sido los principales retos para la recuperación? Piensas tú, ¿Qué la participación de Estados Unidos dificulta la recuperación?*
7. **Have you noticed this clash inside or outside the office?** *¿Has observado choques culturales fuera o dentro de la oficina?*
8. (For non-Puerto Ricans) What did you know about Puerto Rico before going? Was there something your learned (historical, cultural, etc.) that surprised you?
9. Do you think the communities' realities were considered enough or at all in the recovery process? How do you think this could be improved? *Piensas tú, ¿qué las necesidades de las comunidades fueron suficientemente consideradas en el proceso de recuperación?*