









Assessing Media's Representation of Frustration Towards Venezuelan Migrants in Colombia

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Abstract. This research utilizes statistical path modeling to examine the relationship between the number of Venezuelans migrating to Colombia due to economic collapse and the media's coverage of specific topics. We focus on media coverage expressing frustration regarding migration, infrastructure, government, and geopolitics. Our approach combines quantitative analysis of code frequencies from qualitative content analysis of 1,360 regional newspaper articles on migration-related issues. Our findings indicate that an increase in the Venezuelan population in Colombia leads to more negative media coverage of infrastructure impacts, such as hospitals and schools. This negative coverage, referred to as “frustration,” indirectly contributes to increased coverage of infrastructure frustration. This suggests an opportunity for intervention by balancing media coverage to reduce the excessive use of negative language and stereotypes, potentially mitigating anti-migrant sentiment fueled by frustration towards infrastructure. Furthermore, we observe that as migration increases, coverage of frustration towards geopolitics decreases, while frustration towards the Colombian government rises. This shift may reflect a transition from contemplating the causes of migration to focusing on the humanitarian response (or lack thereof) by the host government in accommodating the new arrivals.

Keywords: Frustration · Migrants · Path Modeling · News Analysis

1 Introduction

1.1 Host Communities' Frustration Towards Migrants

Our study looks at the case of Venezuelan migrants' reception in Colombia through the lens of regional newspapers. Here, we concentrate specifically on how “frustration” can be understood across media topics on migration, infrastructure, government, and geopolitics by conducting a statistical path analysis to model the relationship between numbers of migrants and our research team's developed method for coding frustration in newspaper articles.

To understand the frustration, we rely on the frustration-aggression hypothesis [1]. Miller et al. Explained this hypothesis as “frustration produces instigation to aggression, but this is not the only type of instigation that it may produce” [2]. In other words, we can observe frustration not just resulting in violent actions but also in other forms, such as public discourse. In this study, we focus on “frustration” in the context of media discourse around the issue of migration in Venezuelan migrant-receiving host communities in Colombia.

Importantly, these measures serve as a proxy for understanding host community concerns and tensions arising from large inflows of migrants, including those that result in xenophobic actions. By focusing on content analysis of newspaper articles, we can observe the statistical relationship between actual increases in the number of migrants hosted in communities and changes in newspaper coverage of topics that include migration, infrastructure, government, and geopolitics. Understanding what drives the conversations about frustration about migration situations can inform the timing and limits of socio-political and humanitarian responses to dispel tensions that arise between host communities and migrants.

1.2 Background Context of Migration Between Colombia and Venezuela

Colombia has seen a significant number of internally displaced persons due to civil violence, some of whom have sought refuge in Venezuela since the 1970s. In 2013, following a change in government, Venezuela experienced rapid increases in unemployment, insecurity, and political and economic turbulence, causing many to flee. Millions of Venezuelans and previously displaced Colombians have sought safety and better opportunities in Colombia over the past decade [3].

Although Colombia is generally more welcoming towards migrants compared to other countries [4], media coverage has highlighted frustrations surrounding the migration situation. Venezuelans in Colombia face similar stereotypes as migrants worldwide, including accusations about differences in political values [5], job competition [6], and scapegoating for crime rates [7]. From the perspective of host country citizens, the influx of Venezuelans has strained healthcare systems and led to increased informal labor and job competition, resulting in lower wages [8]. However, these political and economic perspectives fail to capture the social factors influencing locals' perceptions and attitudes toward migrants.

Existing scholarship points to two ways that examining a concept like “frustration” may provide insights into how locals interpret and respond to migration. The first area of research examines frustrations towards migrants, such as xenophobia, discrimination, intolerance, prejudices, racism, nationalism, and job competition [9–11]. The second area focuses on the emotional responses and behaviors of host communities towards migrants, including anger [12–15]. Previous studies of Venezuelan migrants in Colombia have also explored similar aspects, such as the political impact of Venezuelan migrants, misconceptions about their negative labor market impact, and their effects on Colombia's infrastructure [12, 13, 16].

To understand more about how public discourse, in the form of regional newspaper coverage, engages with migration, we try to understand increased markers of frustration in news articles as a proxy for local citizens' attitudes towards migrants. By analyzing

news articles about Venezuelan migrants in Colombia, we look at the statistical relationship between frequency of coverage about migration, infrastructure, government, and geopolitics. These topics are analyzed as frequency of qualitative codes applied to the articles and analyzed in correlation with the monthly numbers of Venezuelan migrants in Colombia, as reported by governmental and nongovernmental organizations.

2 Methodology

This research uses a mixed-method design, incorporating a qualitative Content Analysis of newspaper articles [17] and a quantitative statistical path model [18] of the relationship between frustration topics covered in the news articles and numbers of Venezuelan migrants arriving to Colombia.

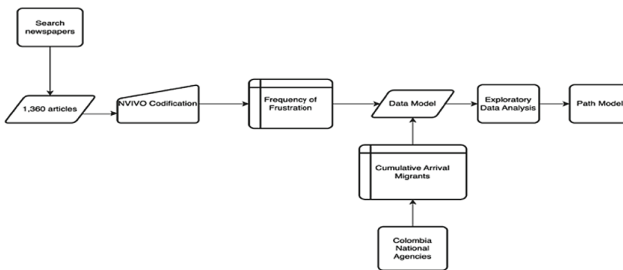


Fig. 1. Methodology Diagram

The Fig. 1 illustrates the process flow, which included several actions: Process (searching newspapers and data from Colombian national agencies, conducting an exploratory analysis of the data, estimating the path model), Data (collection), Manual inputting (NVivo codification), and Internal Storage (storing the frequency of frustration internally), that required for validation of the hypotheses and effective communication of the results found.

2.1 Newspaper Data and Qualitative Coding

A popular regional Colombian newspaper was selected through consultation with subject matter experts. Using keyword¹ searches related to the Venezuelan migration, 1,360 articles covering January 2015 to October 2020 were extracted as PDFs. Manual coding of articles involved two separate coders and relied on a codebook developed to identify frustration across four main topics – migration, infrastructure, governance, and geopolitics – that was developed over 18 months between 2020 and 2021 [19]. Frustration codes fall into the following topic areas:

¹ Some of the keywords used to extract articles are “Venezolanos” (Venezuelans), “Migrantes” (migrants), “Frontera” (border), and “Crisis y Venezuela” (Crisis and Venezuela). The research team has applied filters to eliminate news articles that are not related to the situation in Colombia.

1. Migrants (**FM**), eight subcodes; e.g., migrant arrivals and migrant presence.
2. Government (**FGv**), 10 subcodes; e.g., rhetoric and policy making.
3. Infrastructure (**FI**), 13 subcodes; e.g., the state of healthcare and state of housing.
4. Geopolitics (**FG**), 11 subcodes; e.g., border control/closure and migration flows.

Coders characterized sentences, phrases, and paragraphs of newspaper articles according to the codebook. Coder inter-reliability, measured using kappa scores, confirmed consistent coding of newspaper articles. Statistical analysis of media topics related to frustration towards migration, government, infrastructure, and geopolitics used code frequencies as quantitative input data.

2.2 Venezuelan Migration Data

To evaluate how real-world events such as migrant population number impact media topic coverage, we calculated the Cumulative Arrival of Migrants (CAM) for Venezuelans in Colombia from January 2015 to March 2020. This data came from several Colombian national data agencies, including the National Planning Department (Departamento Nacional de Planeación (DNP)) dashboard with data derived from the National Administrative Department of Statistics (Departamento Administrativo Nacional de Estadística (DANE)), and from the National Unit for Risk and Disaster Management (Unidad Nacional para la Gestión del Riesgo de Desastres (UNGRD)).

2.3 Research Hypotheses

As previously mentioned, Venezuelan migrants, like migrants worldwide, are frequently held responsible for various tangible issues affecting the host community. In the specific case of Venezuelan migration, the strain on hospitals located near the border has been particularly pronounced, resulting in significant financial deficits. To address this direct impact on host communities, we propose the following hypothesis:

1. *Increased migrant arrivals nationally (CAM) leads to more local media coverage of negative infrastructure impacts (FI).*

Further, to capture media coverage of intangible effects of migration on the local migration discourse, we propose the following hypothesis:

2. *Increased migrant arrivals nationally (CAM) leads to more local media coverage of frustration towards government responses (FGv).*

Noting that neither of these hypotheses is about frustration towards migration directly, they imply an assumption that migration raises other issues for citizens that cause them to vocalize frustration across one or more of the four thematic areas of migration, government, infrastructure, and/or geopolitics.

3 Statistical Path Modeling

First, we conducted exploratory data analysis.² Two code frequency variables, FI and FGv, are non-normal; therefore, we used the non-parametric Spearman Correlation matrix to account for the nonlinear relationships between our variables [20, 21]. These correlations are calculated to identify associations between all variables to build possible models. Figure 2 displays the relationship between all variables. We discovered a high correlation between: (1) FM, FI, and CAM, with positive correlations ranging from 0.53 to 0.69, and (2) FG and FGv, with a correlation of 0.47. Some of the correlations are extremely strong, allowing us to continue with the path model analysis. It is important to clarify that our design is not experimental, thereby preventing us from establishing causality.

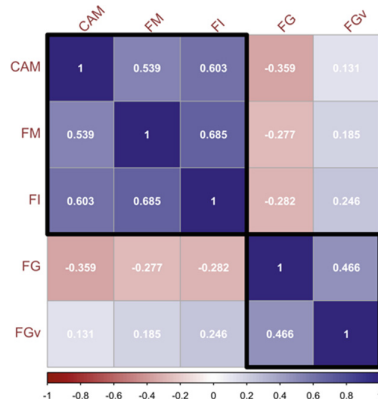


Fig. 2. Correlation matrix of Spearman

Next, Table 1 shows the hypotheses used to build the path model.

Table 1. Hypotheses of the path model.

Hypothesis	Variables		
	Independent	Mediator	Dependent
1	CAM	FM	FI
2	CAM	FG	FGv

As we want to fit models with non-normal data, we use the diagonally weighted least squares (DWLS) estimator [22], which provides more accurate parameter estimates, and a model fit that is more robust to variable type and non-normality [23]. Referencing Beaujean [18], we will analyze the model’s goodness fit with the metrics in Table 2. In

² Statistical analyses were carried out with the “lavaan package” in R-3.4.0 statistical software.

this table, the goodness-of-fit measures suggest that the path model provides a good fit to the data.

Table 2. Conditions for the metrics VS estimated values of the path model.

Metric	Condition	Values
s^3	<3	1.487
CFI	>0.90	0.990
TLI	>0.95	0.950
RMSEA	<0.06	0.090
SRMR	<0.08	0.040

Table 3 shows the results of each direct effect in the path model ("A → B" means the path from A to B). All independent variables have a significant direct effect on the dependent variables, with CAM having a statistically significant effect on all of them ($p < 0.05$). Since these models include very little data and attempt to model the media's coverage of social tensions ("frustration") arising around migration issues, the model may not be complete. In other words, when measuring complex social phenomena such as media coverage of migration events, there may be many variables that we have not included here, such as the impact of other national or international events that temporarily move attention away from migration issues and the fluctuations in media coverage that often follow political election cycles.

Table 3. Results for the direct effects (* Significant at level 0.05)

No	Direct Effect	Estimate
1	CAM → FI	0.353*
2	FM → FI	0.463*
3	CAM → FM	0.539*
4	CAM → FGv	0.346*
5	FG → FGv	0.598*
6	CAM → FG	-0.359*

Additionally, we examined the indirect effects between the independent and dependent variables through mediator variables. The results we found for the mediator parameter estimates are shown in Table 4. In every case, the mediator variables are statistically significant ($p < 0.05$), which means in addition to the direct effect between independent and dependent variables, there is also an indirect effect through the mediator variable.

³ s is the quotient of χ^2 and df .

Based on the information in Tables 3 and 4, it can be deduced that -0.215 equals $(-0.359) \cdot (0.598)$ as per the definition. This implies that FG influences the relationship between the other two variables, CAM and FGv (as depicted in Fig. 3, their correlation is extremely low). Essentially, FG enhances the model’s predictive accuracy by exposing an underlying relationship that was not initially apparent, and this relationship has a direct negative effect.

Table 4. Results for the indirect effects (* Significant at level 0.05)

Mediation	Indirect Effect	Estimate
FM	CAM → FM → FI	0.250*
FG	CAM → FG → FGv	-0.215*

Combining these elements, the final model is shown in Fig. 3. This diagram summarizes the statistical relationship between arrival of Venezuelan migrants to Colombia and the representation of media coverage of frustration towards migration, infrastructure, government, and geopolitics. As summarized in the tables above, this model provides a reasonably good fit, all relationships in the figure are statistically significant, and display the strength and direction of the relationship.

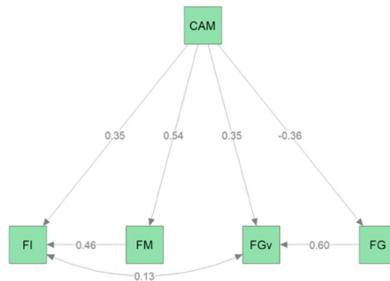


Fig. 3. Visualization of the frustration path model

4 Discussion

The path model supports the first hypothesis: *Increased migrant arrivals nationally (CAM) lead to more local media coverage of negative infrastructure impacts (FI)*. According to the analysis, an increase in the arrival of Venezuelan migrants to Colombia results in a positive, statistically significant increase in coverage of topics related to frustration about infrastructure (e.g., hospitals, utilities, education facilities). Notably, increased migration affects infrastructure coverage both directly and indirectly. The indirect relationship is mediated through a positive, statistically significant relationship between migration and coverage of broad migration-related issues. What this suggests,

in other words, is that migration itself *and* migration-related media coverage both impact media coverage of infrastructure. Specifically, these are positively correlated with one another.

The indirect, positive relationship between arrivals and frustration about infrastructure that is mediated through coverage of migration issues suggests a potential intervention point for managing migrant-host communities. On the one hand, the model suggests that arrivals will directly increase coverage of frustration towards infrastructure. Intuitively, this makes sense, as arrival of large amounts of migrants will have direct effects on hospital usage, housing and shelter availability, and a number of children attending local schools. These aspects of infrastructure will be directly witnessed by at least some members of the host community. On the other hand, there is a stronger relationship through the indirect connection to infrastructure that suggests it is not the migrants themselves but rather the coverage of migrants resulting from their arrival that causes frustration towards infrastructure.

In other words, migrants may not directly impact infrastructure of many locals, but citizens will *feel like* infrastructure is adversely affected because coverage of such events increases in the news. It is important to note that managing media coverage of migrants in general may reduce the amount of coverage of the negative effects that migration has on infrastructure, manifesting as frustration. From our fieldwork experience in Colombia, and news reports, we have observed efforts by media outlets to engage in dialogue on how to present information without stereotyping and scapegoating language directed towards Venezuelan migrants. In addition, public officials have received training on preventing xenophobic narratives from the public sector. This appears to have some positive effect on establishing a more balanced media narrative about migrants. In the future, we will compare this media analysis to one conducted on a dataset from Greece from presented in the codebook to compare with one in which the media narrative had not been influenced in this way.

Additionally, the path model supports the second hypothesis: *Increased migrant arrivals nationally (CAM) lead to more local media coverage of frustration towards government responses (FGv)*. Directly and in a positive and statistically significant way, Venezuelan migrant arrivals in Colombia impact coverage of issues related to frustration towards government responses. Interestingly, there is also an indirect effect on government issue coverage. When migrant arrivals increase, coverage of geopolitics-related frustration decreases, which in turn increases media coverage expressing frustration toward the Colombian government. This perhaps suggests that the actual arrival of migrants shifts focus from geopolitical events (for instance, commenting about the problems with the Venezuelan political regime) towards issues related to pressures on the migrant-receiving country to respond appropriately to humanitarian concerns, or other challenges facing host communities as they adapt to sudden, large inflows of migrants.

However, there are external and internal limitations for this model's applicability. Externally, it could be affected by variations in demographic, cultural, and socio-economic characteristics and contextual factors. Internally, it could be affected by the presence of uncontrolled confounding variables or the effects of third variables not considered or even sample selection biases could challenge the causal interpretation of our findings

even though our model provides a solid basis for analyzing the relationship between the variables investigated.

5 Conclusion

This study used statistical path analysis to model the relationships between media coverage of four topic areas—migration, infrastructure, government, and geopolitics—surrounding the arrival of millions of Venezuelan migrants to Colombia. The statistical analysis used frequency of codes as quantitative input derived from qualitative content analysis of 1,360 regional newspaper articles over nearly six years of the Venezuelan migration situation. The findings provide direct statistical evidence of impacts on migrant arrival numbers and topical coverage in news media. The indirect relationship between migrant arrival numbers and frustration about infrastructure in the media is mediated by coverage of topics related to frustration towards migration. This presents an opportunity for the media to practice balanced approaches to reporting and reconsider capitalizing on tropes, stereotypes, and negative framing that may compound perceptions that the media convey about infrastructure (such as hospitals and schools) being negatively impacted by migrants. Given that the Colombian government has taken steps to train media professionals in managing xenophobic rhetoric, future research must compare the findings of this study to a case in which no such government intervention happened to moderate anti-migrant sentiments in the news.

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