

Immigration and Integration discourses in the Canadian Provinces of Quebec and Ontario from 1988-2022: An Analysis of Topics, Sentiments and Trends in Newspaper Text.

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Introduction

While Canada enjoys a worldwide reputation for its immigration laws and multicultural policies, the demographic changes brought about by immigration in recent years are testing the sustainability of Canada's famous hospitality. These changes also fuel fears in some parts of the country and raise political and public debate about how immigrants will integrate into society. Given the considerable social and political importance of questions about immigration and immigrant integration, these issues have also been debated and controversial in the Canadian media in recent decades. News media can shape citizens' understanding of what the arrival of immigrants can mean for their country and place migration issues and immigrants in the context of social problems ([Heidenreich et al., 2016](#)).

There is substantial literature on media coverage of migration issues in Canada ([Bauder, 2005](#); [Gagnon & Larios, 2021](#); [Lawlor, 2015](#); [Lawlor & Tolley, 2017](#)). However, most of these studies focus on Canada in general without distinguishing provinces, cover a short period, focus on the role of political parties in migration and integration policies (e.g., [Gagnon & Larios, 2021](#)), or specific issues such as the introduction of Canada's new Immigration and Refugee Protection Act of 2002 (e.g., [Bauder, 2005](#)). Few studies examine how topics and sentiment-related topic change across Canadian provinces, and how immigrant composition and economic prospects in the provinces influence topics and sentiments over time. The present study addresses these limitations and examines how the media perceive immigration and immigrant integration in Canadian provinces from 1988 to 2022. To this end, this study will be organized around two provinces: the French-speaking province of Quebec and the English-speaking province of Ontario. These two provinces are fascinating cases for ideal comparison because of their distinct and contrasting approaches to immigration, reception, and integration of immigrants. Unlike Quebec, which has adopted a model of complete control over immigration and integration services, Ontario has instead adopted a three levels model: federal-provincial-municipal. Consequently, differences in the importance of migration and integration issues can play an important role in newspaper coverage.

The present study aims to answer the following questions: (1) What are the specific topics related to immigration and immigrant integration addressed in newspaper articles? (2) How have these topics changed in Quebec and Ontario over time? (3) How have the sentiment associated with the topics changed in Quebec and Ontario? (4) Does variation in the proportion of immigrants and the unemployment rate lead to variations of the topics and of sentiment related to topic in the two provinces?

The data used concerns 30926 full-text articles from five Anglophone journals in Ontario (19159) and four Francophone journals in Quebec (11767). To estimate topics, we used unsupervised automated content analysis, particularly, Structural Topic Model (STM). We also examined the sentiment associated with the topics with a sentiment analysis. We use growth curve modelling- a combination of methods with longitudinal data and mixed models- to explain the variation in topics and sentiment associated with topics across the two provinces, while considering the population composition and unemployment rate in each province.

1. Data and Methods

1.1. Data

The data is collected from nine newspapers in Quebec and Ontario and indexed in ProQuest Canadian Major Dailies and Eureka.cc. The Quebec newspapers used are La Presse, Le Devoir, Le Journal de Montréal, and Le Soleil. Those in Ontario are the Toronto Star, The Kingston Whig-Standard, The Sudbury Star, The Ottawa Citizen, and The Windsor Star. These newspapers are selected based on their accessibility and popularity with users. From 1988 to 2022, the search yielded 30926 articles (19159 from ProQuest Canadian Major Dailies for Anglophones newspapers in Ontario and 11767 from Eureka.cc for Francophones newspapers in Quebec).

1.2. Variables

1.2.1. Dependent variables

The dependent variables are: (1) probability of appearance of specific topics per newspaper article and (2) sentiment score associated with each specific topic.

1.2.1.1. Topics related to immigration and immigrant integration.

To determine the topics in the articles, we use Structural Topic Model (STM), developed by Roberts et al. ([2014](#)). STM, is an unsupervised machine learning method for identifying topics and their relationships in a set of text. The idea behind topic modeling is that each word in the text has a certain probability of belonging to a topic, and each document represents a mixture of topics. Unlike deductive methods, which require the researcher to define topics in advance, STM is a method in which the researcher's only intervention is the selection of number of topics. STM was chosen because we have no strong expectations as to the exact nature of the topics. In addition, STM was chosen because it allows the estimated topics to change with the independent variables.

1.2.1.2. Topic sentiment

We use both French and English version of the Lexicoder Sentiment Dictionary (LSD) to uncover sentiment in media coverage. LSD is a word dictionary developed by [Young and Soroka \(2012\)](#) to measure tone in media coverage. For each article, we compute the sentiment score as the difference between the proportion of positive and negative words in the article and the total number of words. The topic sentiment value indicates whether the topic predominantly comprises words associated with positive or negative sentiment scores.

1.2.2. Independent variables

The main independent variables are the proportion of immigrants and the unemployment rate between 1988 and 2022 for both provinces. These variables are available on the Statistics Canada website. We also control the publication year, the newspapers, and the political parties in power in each province between 1988 and 2022.

1.3. Methods

To determine whether topic prevalence and topic sentiment scores differ between two provinces over time, controlling for unemployment rate and immigrant composition, we use growth curve models, a combination of longitudinal data analysis and mixed models. To obtain aggregate data, we aggregated the 30926 articles by year, month, and newspaper. We analyze the data

using growth curve modeling, which allows us to examine the importance of topics and associated sentiments in the two provinces. Since the topics and the sentiments associated with each topic are continuous, we use a linear mixed-effects model.

2. Results

2.1. Global trends in media coverage of migration and integration 1988-2022

Figure 1. Evolution of the number of articles included in the analysis by year.

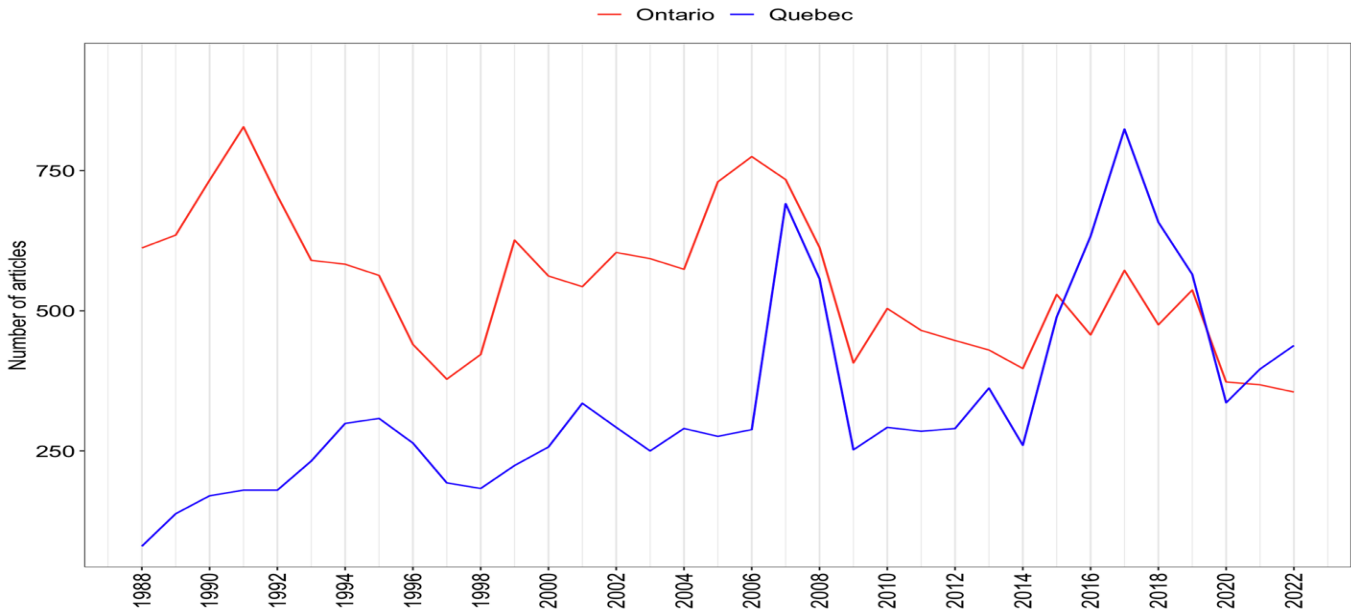


Figure 1 above illustrates the number of articles covered by newspapers on migration and integration in the two provinces between 1988 and 2022. In early 1988, the number of newspaper articles was relatively low. In 1986, media coverage increased more in Ontario than in Quebec until the end of the 1990s, and then declined until 1997. However, this decline is more pronounced in Quebec than in Ontario. Another period occurred between 2001 and 2007, with an increase in Ontario but a steady decline in Quebec. Thereafter, media attention declined steadily, reaching a general low point in 2015 and then remaining relatively stable before rising again between 2016 and 2020 in both provinces. The trends observed over time can be clearly explained by the growing importance of debates and tensions around immigration and integration on political agendas such as security and migration control, border protection and anti-terrorism, among others.

2.2. Topics Categories in Ontario and Quebec

Figure 2. Proportion of topic categories in Ontario and Quebec

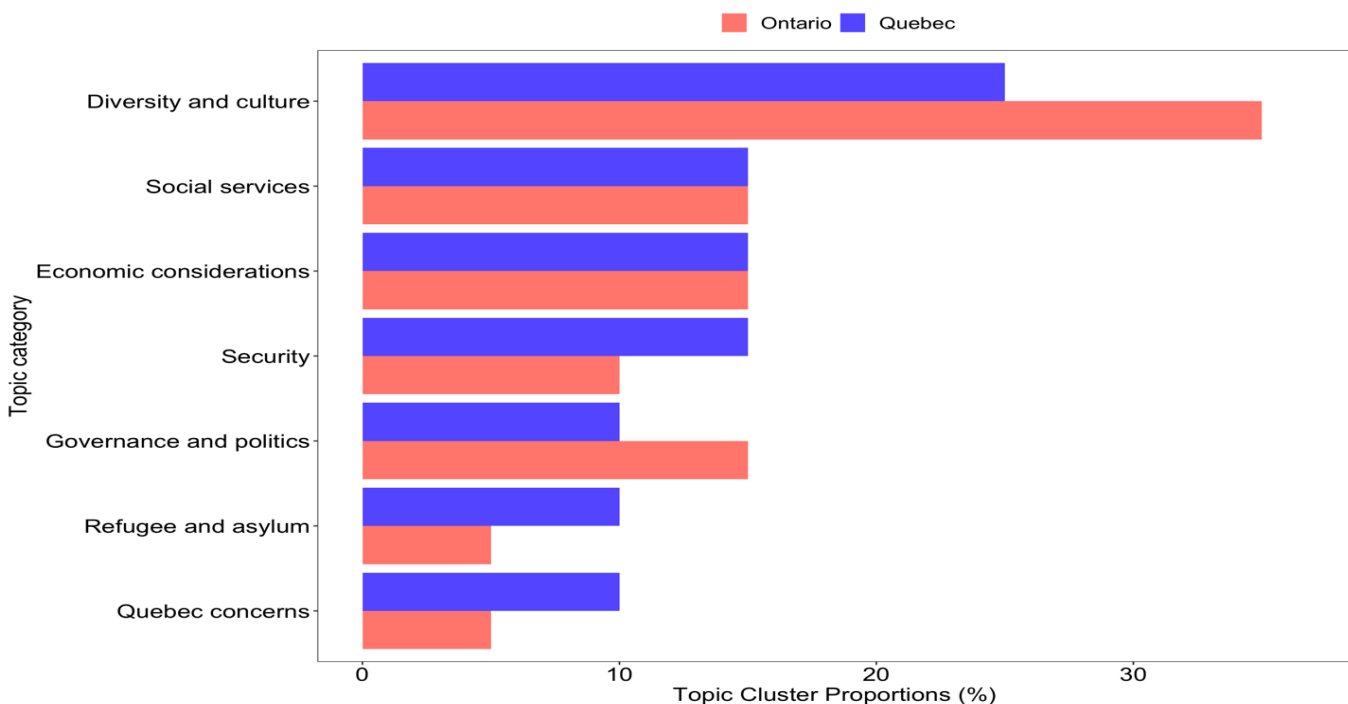


Figure 2 above shows the categories of topics in each province. We grouped the 20 topics obtained for each province into seven broader categories. These are: (1) diversity and culture, (2) economic considerations, (3) Quebec concerns, (4) security, (5) governance and politics, (6) social services, and (7) refugees and asylums. The "Diversity and culture" category accounts for 35% of all data used in Ontario. It includes multiculturalism, ethnocultural and religious diversity, racism and discrimination, political participation, and sports and cultural participation. In Quebec, it accounts for 25% of the data set and includes topics relating to ethnic diversity, sports and cultural participation, and discrimination. The "Economic considerations" category covers economic aspects, accounting for 15% in both provinces. In this category, we group topics related to education, economic participation, investment in jobs, and workforce in jobs. The "Security" category occupies 10% in Ontario and 15% in Quebec and includes topics on security, terrorism, and illegal migration. The fourth category, "Governance and politics", covers migration policy, political participation, justice, and citizenship. "Quebec concerns" accounts for 5% of all data in Ontario and 10% in Quebec. It includes topics related to independence, the protection of Quebec values, and reasonable accommodation. The sixth category covers

social issues, including family considerations, welfare, housing, and health services. Finally, the seventh category would correspond to humanitarian aid and includes topics related to the reception of refugees, asylum procedures, and the refugee crisis.

2.3. Prevalence of topics between the two provinces over time

Figure 3. Dynamics of immigration and immigrant integration topics between provinces over time.

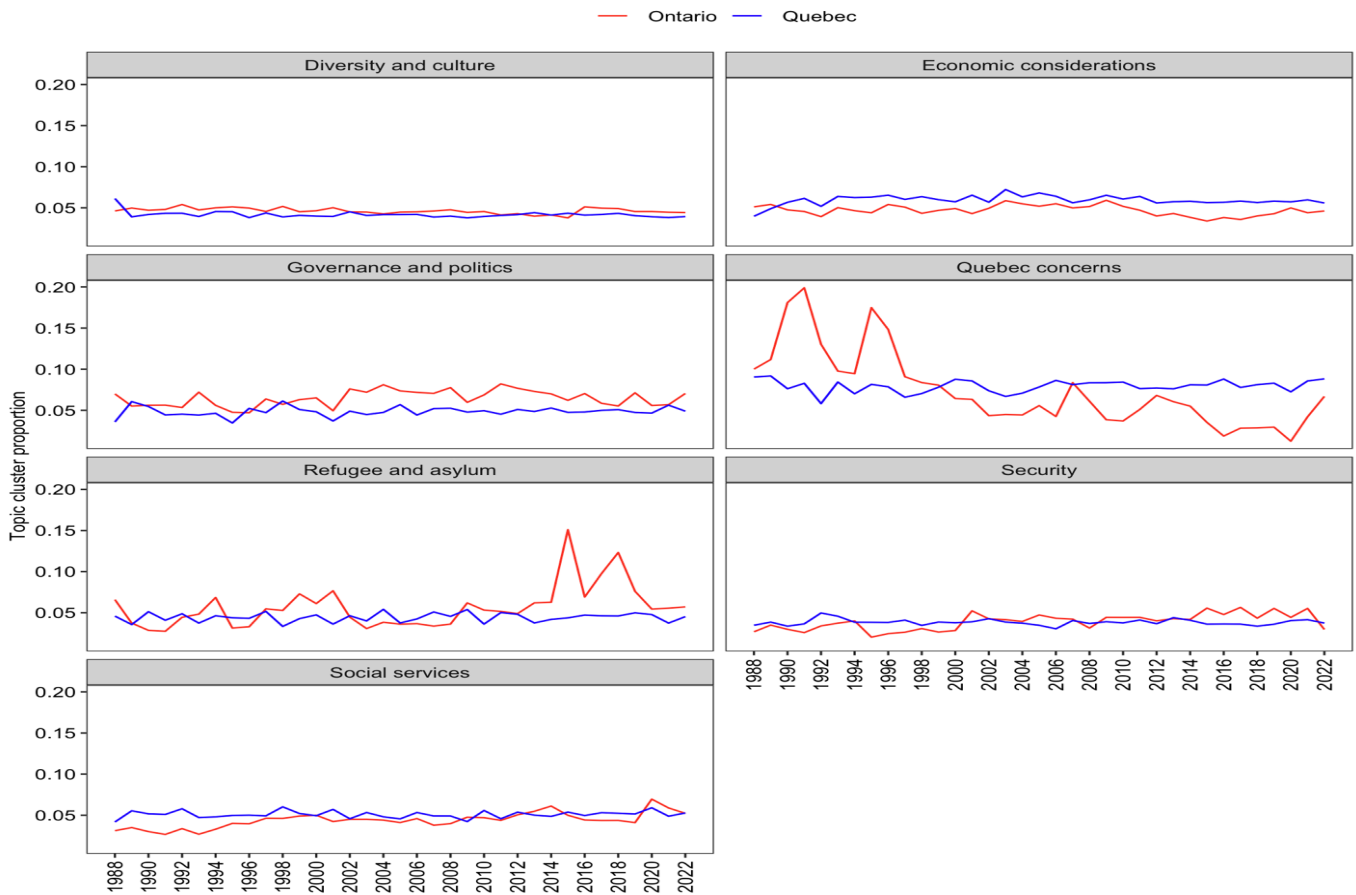
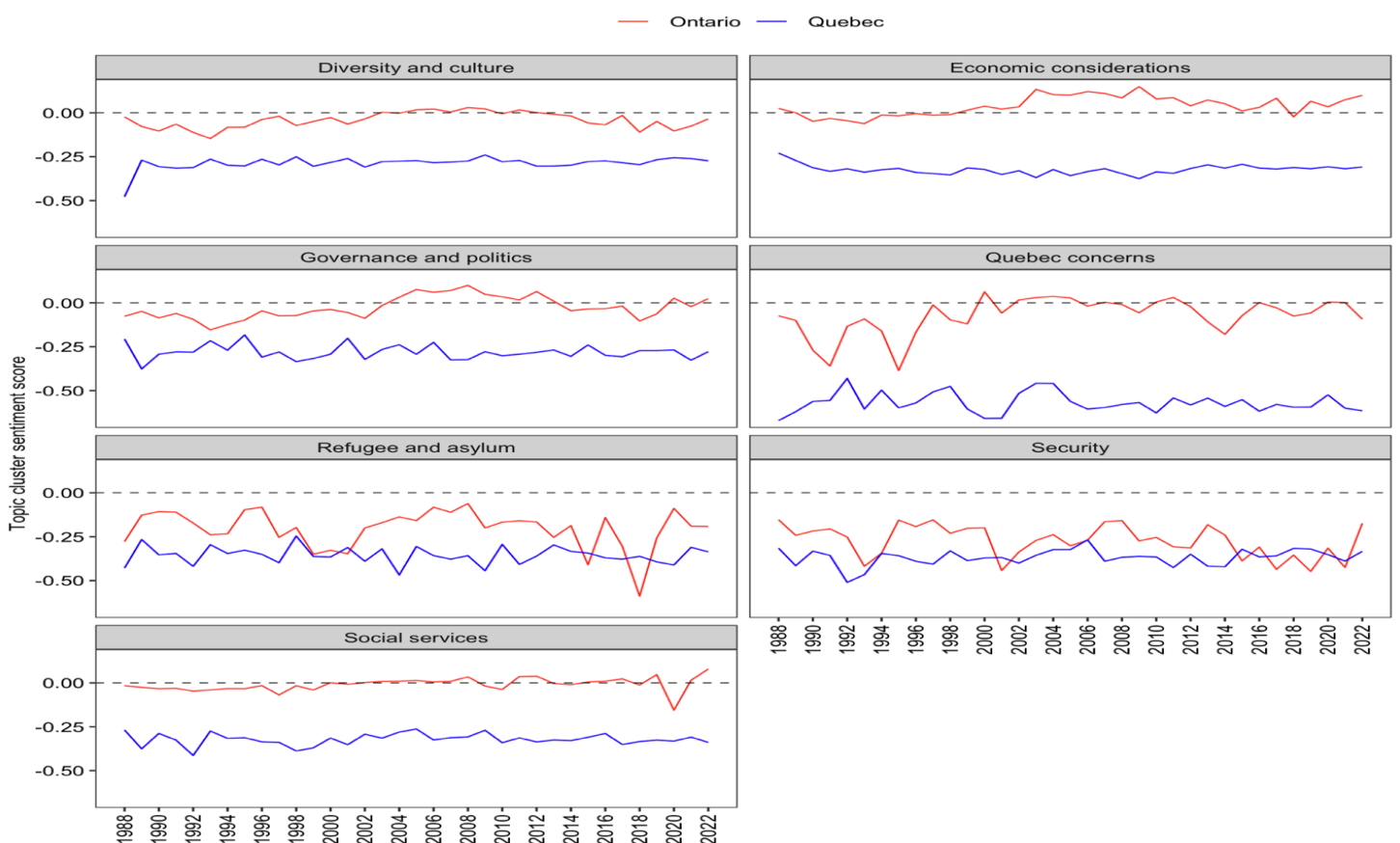


Figure 3 above shows the differences in the importance of the broader topic categories over time in the two provinces. Despite having the highest proportions in the corpora, the topic categories "Diversity and culture" and "Economic considerations" have remained constant in both provinces over time. However, other categories began to emerge in the 1990s. Security issues, immigration governance, refugees and asylums, and social problems have slightly increased over the years in Ontario while remaining almost stable in Quebec. Finally, there was a boom in the "Quebec concerns" category in Ontario between 1988 and 2000, while in Quebec, there was a slight increase in this category over time.

2.4. Sentiments associated with topics between the two provinces over time.

Figure 4. Sentiment dynamics associated with immigration and immigrant integration topics between provinces over time.



In both provinces, media coverage consistently refers to negative tones when it comes to security and terrorism and the reception of refugees and asylum seekers. Surprisingly, media coverage in Quebec regarding Quebec's independence has been more negative than in Ontario over time. These results indicate that newspapers in both provinces tend to choose more negative words when covering these aspects of immigration and integration. The negative tone of these topics could be explained by the fact that journalists may link them to the increase in ethnocultural and religious diversity in both provinces. In other words, the growing number of immigrants and refugees and the scarcity of available jobs in each province may have led to security and terrorism fears and negative perceptions of immigrants and refugees.

2.5. Explaining topics in newspapers

The results of growth curve modelling for the topic show that in Ontario, the media pay more mention of topics related to cultural diversity (coefficient=0.06), economic aspects (coefficient =0.09), Quebec independence (coefficient =0.08), immigration governance (coefficient =0.11), security (coefficient =0.06) and social services (coefficient =0.06) when the proportion of foreign-born people in the province increases. We find similar results in Quebec but more pronounced effects than in Ontario. In particular, the media in Quebec discuss more about Quebec independence (coefficient =0.47), immigration governance (coefficient =0.25), economic aspects (coefficient =0.22), cultural diversity (coefficient=0.20), social aspects (coefficient =0.21), humanitarian and security aspects (coefficient =0.17). The results show divergent effects on the proportion of topic categories concerning the unemployment rate. In Ontario, a one-unit increase in the unemployment rate has a positive influence on cultural diversity (coefficient = 0.15), Quebec independence (coefficient =0.84), and humanitarian aid (coefficient =0.38). In Quebec, on the other hand, newspapers discuss economic aspects (coefficient =0.28) and social services (coefficient =0.17) more as the rate increases in the province. These results suggest that, unlike Ontario newspapers, Quebec newspapers are more likely to discuss economic aspects or social services when the unemployment rate rises.

2.6. Explaining topics-sentiment

The results of growth curve modelling for the topics-sentiment show that, As the proportion of immigrants in Ontario increases, newspapers express more positive sentiments towards economic aspects (coefficient =0.13) and social services (coefficient =0.18). On the other hand, articles published by these newspapers become more pessimistic about the reception of refugees and asylums (coefficient = -0.20) and issues of security and terrorism (coefficient = -0.36) as the proportion of immigrants increases. In Quebec, the results show that as the proportion of immigrants increases, newspaper articles become less favorable to cultural diversity (coefficient =-1.45), economic aspects (coefficient =-1.29), Quebec independence (coefficient =-3.43), social services (coefficient =-1.34), welcoming refugees and asylums (coefficient = -1.53) and security (coefficient = -2.01). These results suggest that, unlike Ontario, the high proportion of immigrants in Quebec may mitigate the idea that increased immigration raises concerns about Quebec's independence, economy, culture, security, and humanitarian aid. Regarding the unemployment rate, newspaper articles in Ontario were more negative on economic (coefficient = -0.64), cultural diversity (coefficient = -1.03), social services (coefficient =-1.27), and Quebec independence issues (coefficient = -2.98). On the other hand, the results show no effect of the unemployment rate on sentiments about Quebec topics. Only in the case of economic issues (coefficient = -1.25) does a one-unit increase in the unemployment rate hurt news coverage in the province. These results suggest that newspapers in both provinces are more likely to publish articles less favorable to economic aspects when the unemployment rate rises in both provinces.

Conclusion

This article examined media coverage of immigration and immigrant integration in two Canadian provinces: Quebec and Ontario between 1988 and 2022. We identify a coherent set of 20 latent topics through unsupervised machine learning analysis. The results of topic modeling reveal that immigration and immigrant integration were discussed using topics such as economy, diversity and culture, Quebec's independence, security, governance and politics, social services, and humanitarian aid. In terms of the emotional content of the topics, there was very little variation in the feelings associated with the topics between the two provinces over time. The results suggest that newspapers in both provinces were more likely to trigger negative emotions or use words with negative connotations to characterize most of the topics found in this study on immigration and integration. Thus, the results of this study provide implicit evidence that topics can be used to articulate hostile narratives about ethnic prejudices about immigrants. The results also show that media coverage of the topic varies according to local contextual factors, such as the change in the percentage of foreign-born people and the unemployment rate in each of the two provinces.

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