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ANALYZING AND CLASSIFYING COMMUNITY COMPLAINTS AGAINST PUBLIC SERVICES ON TWITTER

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Abstract: This study presents an in-depth analysis of community complaints directed at public services on Twitter. With the rapid growth of social media as a platform for public discourse, understanding and categorizing these complaints is crucial for governments and service providers to improve responsiveness and service quality. Leveraging natural language processing techniques, sentiment analysis, and machine learning, we examine a diverse range of Twitter complaints, classify them into specific categories, and provide insights into the most common issues faced by communities when interacting with public services on this platform. The findings offer valuable guidance for enhancing public service delivery and engagement in the digital age.

Keywords: Twitter, Community Complaints, Public Services, Social Media, Natural Language Processing, Sentiment Analysis, Machine Learning.

INTRODUCTION

In the digital age, social media platforms have become a powerful channel for citizens to express their opinions, concerns, and grievances about public services. Twitter, with its real-time and widespread reach, has emerged as a prominent platform for community members to voice their complaints and dissatisfaction with public services. These complaints cover a wide spectrum, ranging from issues related to transportation, healthcare, education, public utilities, and more. Analyzing and classifying these community complaints is of paramount importance for governments, public service providers, and policymakers seeking to enhance service quality and responsiveness.

This study delves into the realm of community complaints against public services on Twitter, aiming to provide a comprehensive analysis and classification of these complaints. Leveraging the power of natural language processing (NLP) techniques, sentiment analysis, and machine learning, we endeavor to categorize and gain insights into the diverse array of grievances expressed on Twitter. By doing so, we not only shed light on the most prevalent issues facing communities but also equip governments and service providers with the tools to address these issues effectively and engage with the public in a more responsive and informed manner.

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The objectives of this research are to systematically analyze community complaints on Twitter, classify them into specific categories, understand the sentiment behind these complaints, and generate valuable insights that can inform public service improvements and digital engagement strategies.

METHOD

Our methodology for analyzing and classifying community complaints against public services on Twitter consists of the following steps:

1. Data Collection:

We collect a vast dataset of tweets containing complaints related to public services from Twitter using appropriate keywords and hashtags. This dataset encompasses a broad spectrum of public service domains to ensure a representative sample.

2. Data Preprocessing:

We preprocess the collected data by removing duplicates, irrelevant tweets, and non-English content. Text data is cleaned, tokenized, and standardized for consistency.

3. Sentiment Analysis:

Utilizing sentiment analysis techniques, we determine the sentiment (positive, negative, or neutral) associated with each complaint tweet. This analysis helps us understand the emotional tone of the complaints.

4. Natural Language Processing (NLP):

We employ NLP techniques to extract key phrases and keywords from the complaint tweets. These phrases are essential for categorization and identifying common themes.

5. Machine Learning Classification:

To classify complaints into specific categories, we employ machine learning algorithms, such as text classification models. We manually label a subset of tweets for training and then use these labeled samples to build a classification model capable of categorizing new complaints.

6. Categorization and Insights:

Using the trained classification model, we categorize the complaints into specific domains (e.g., transportation, healthcare, education). We then analyze the frequency and sentiment of complaints within each category to gain insights into the most prevalent and critical issues.

7. Reporting and Recommendations:

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Finally, we present the results of our analysis, highlighting the key findings, prevalent issues, sentiment trends, and actionable recommendations for public service providers and policymakers to address the identified challenges effectively and engage with the community on Twitter.

Through this rigorous methodology, we aim to contribute to the understanding of community complaints against public services on Twitter and provide valuable insights for improving service quality, digital engagement, and responsiveness in the realm of public administration and governance.

RESULTS

Our analysis of community complaints against public services on Twitter yielded the following key results:

Categorized Complaints:

Using machine learning classification, we successfully categorized the complaints into specific domains, including transportation, healthcare, education, public utilities, and more.

Sentiment Analysis:

We determined the sentiment associated with each complaint, revealing patterns of sentiment across different service domains. Some domains had predominantly negative sentiments, while others had mixed sentiments.

Prevalent Issues:

By analyzing the frequency of complaints within each category, we identified prevalent issues. For example, in the healthcare domain, long wait times and access to specialized care were frequently cited concerns.

Community Engagement:

Our analysis showed that Twitter provides a valuable platform for community members to engage with public service providers and government agencies, highlighting the potential for responsive digital governance.

DISCUSSION

The findings of this study have several important implications:

Service Improvement: By categorizing and analyzing community complaints, public service providers and government agencies can pinpoint areas of concern and prioritize improvements in service quality. Addressing prevalent issues can lead to increased citizen satisfaction.

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Enhanced Communication:

Twitter and other social media platforms offer a direct channel for communication between the public and service providers. Understanding sentiment and concerns expressed on Twitter can guide more effective engagement strategies.

Policy Insights:

The prevalence of certain complaints can inform policy decisions and resource allocation. For instance, if transportation-related complaints are widespread, it may indicate a need for infrastructure or operational changes.

Continuous Monitoring:

This study underscores the importance of ongoing monitoring of community sentiment on social media platforms. Public service providers should consider establishing dedicated channels for feedback and complaints to improve responsiveness.

CONCLUSION

In conclusion, our analysis and classification of community complaints against public services on Twitter provide valuable insights for both service providers and policymakers. By leveraging natural language processing and machine learning techniques, we have categorized complaints, identified prevalent issues, and assessed sentiment trends.

Understanding the concerns and sentiments expressed on Twitter allows for more informed decision-making, improved public service delivery, and enhanced community engagement. Public service providers should recognize the significance of social media platforms like Twitter as channels for citizen feedback and consider adopting strategies to address and respond to community complaints effectively.

As technology continues to shape public discourse, this research highlights the importance of harnessing digital platforms for improved governance and service provision. It serves as a valuable resource for governments and organizations seeking to enhance their responsiveness and effectiveness in meeting the needs of the communities they serve.

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