

Analysis of Reviews on Google Reviews from Health Institutions Accredited by Brazilian Accreditation System using Natural Language Processing Techniques

C. MELO¹, A. SAUT¹, F. CORDEIRO² and F. BERSSANETI¹

1 University of São Paulo, São Paulo, Brazil

2 Santa Casa Hospital, São Paulo, Brazil

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INTRODUCTION

User reviews offer valuable insights for organizations to refine processes and enhance consumer satisfaction.

Sentiment analysis is pivotal in categorizing opinions expressed across various channels.

This study focuses on evaluating perceptions of healthcare services from certified institutions through Google Reviews.

AIM

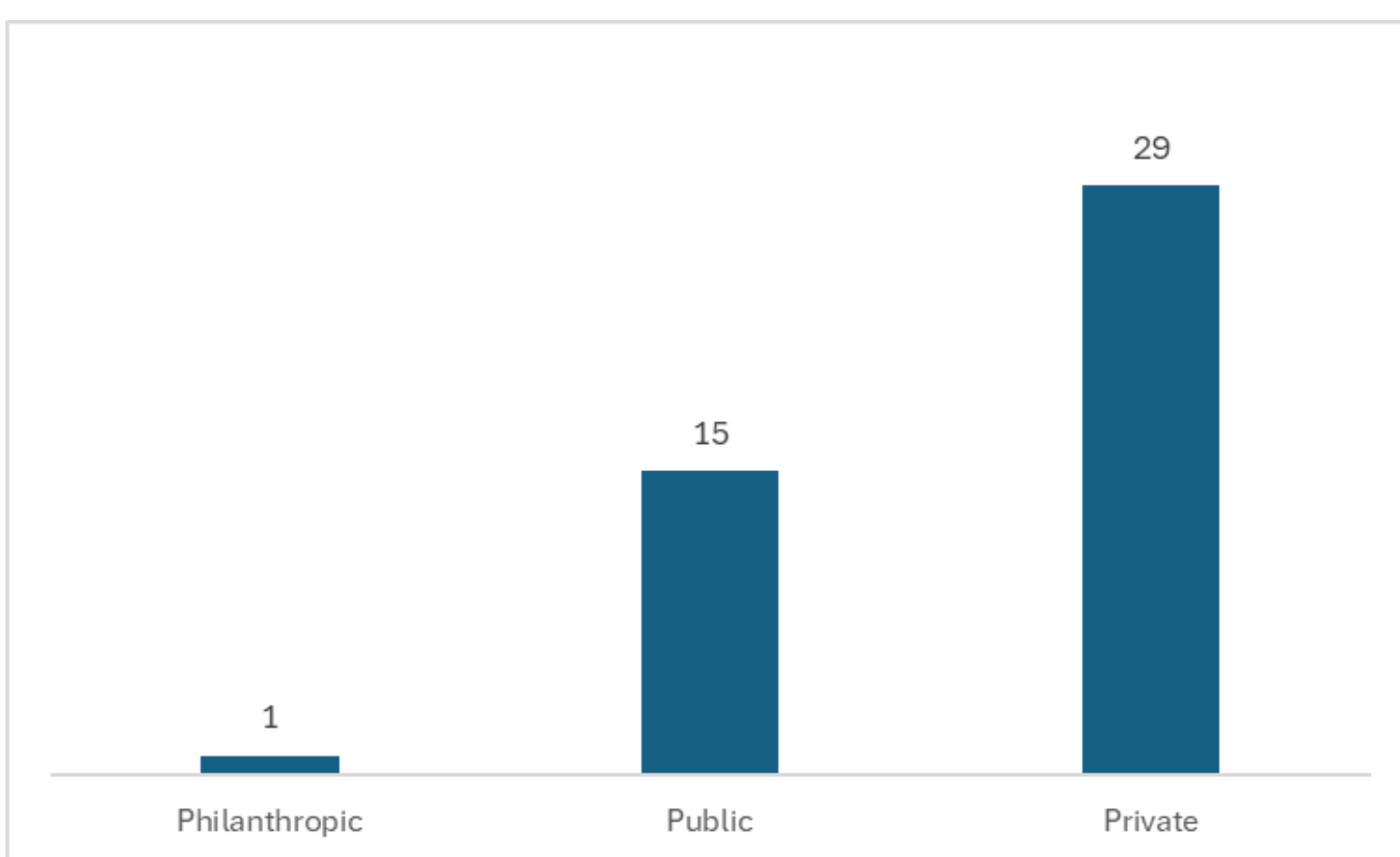
It aims to assess user sentiment across different accreditation levels, adhering to Brazil's national accreditation standards by ONA.

METHOD

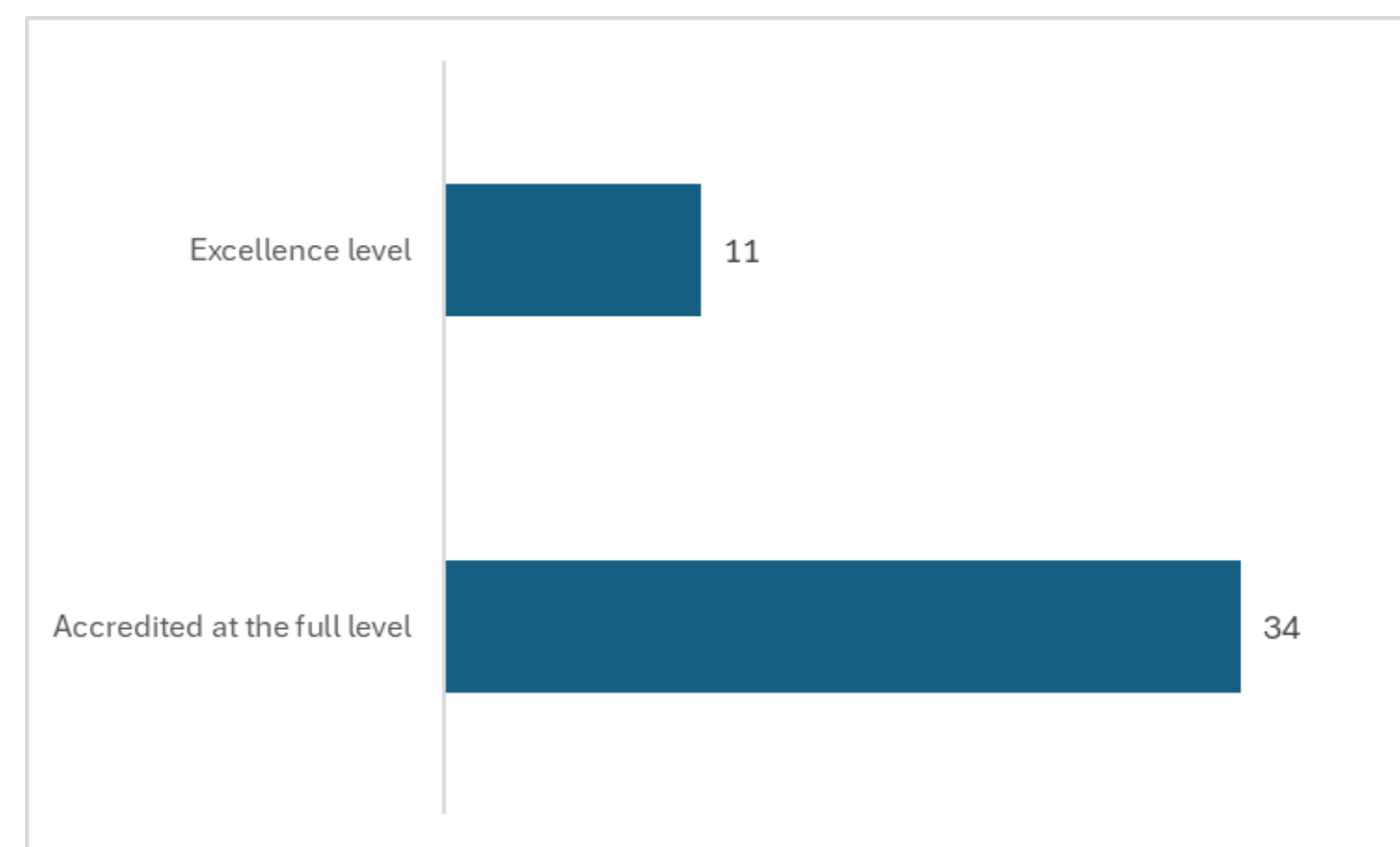
- Descriptive-exploratory approach.
- Analyzing data from 45 healthcare institutions in São Paulo, Brazil, accredited by ONA (National Organization for Accreditation).
- Comments from Google Reviews were collected until January 2024.
- Natural language processing libraries like nltk and text visualization tools such as WordCloud and networkx were utilized for data analysis.
- Sentiment analysis classified comments as positive or negative.

RESULTS

Profile of Analyzed Hospitals:



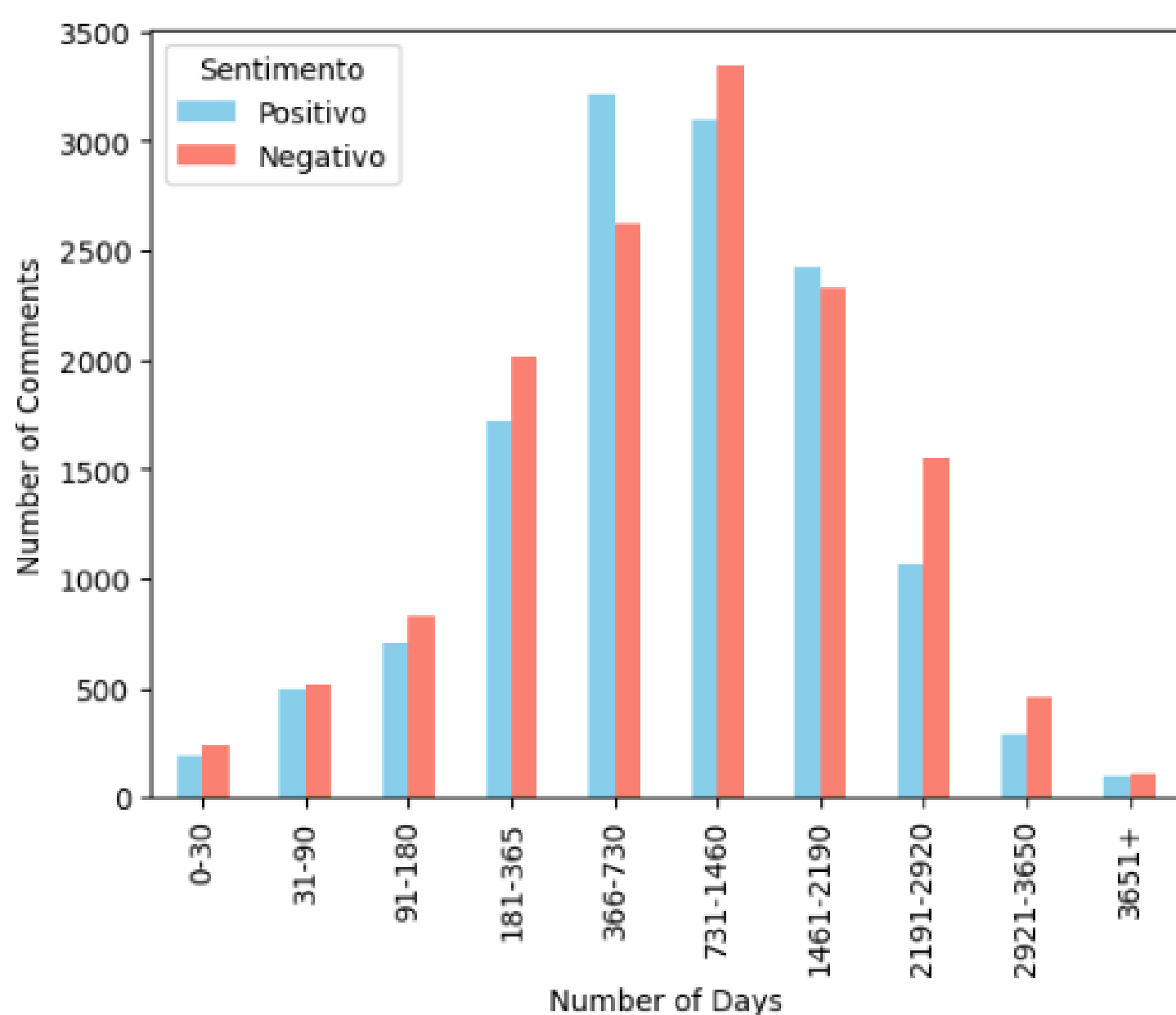
Number of Hospital per Category.



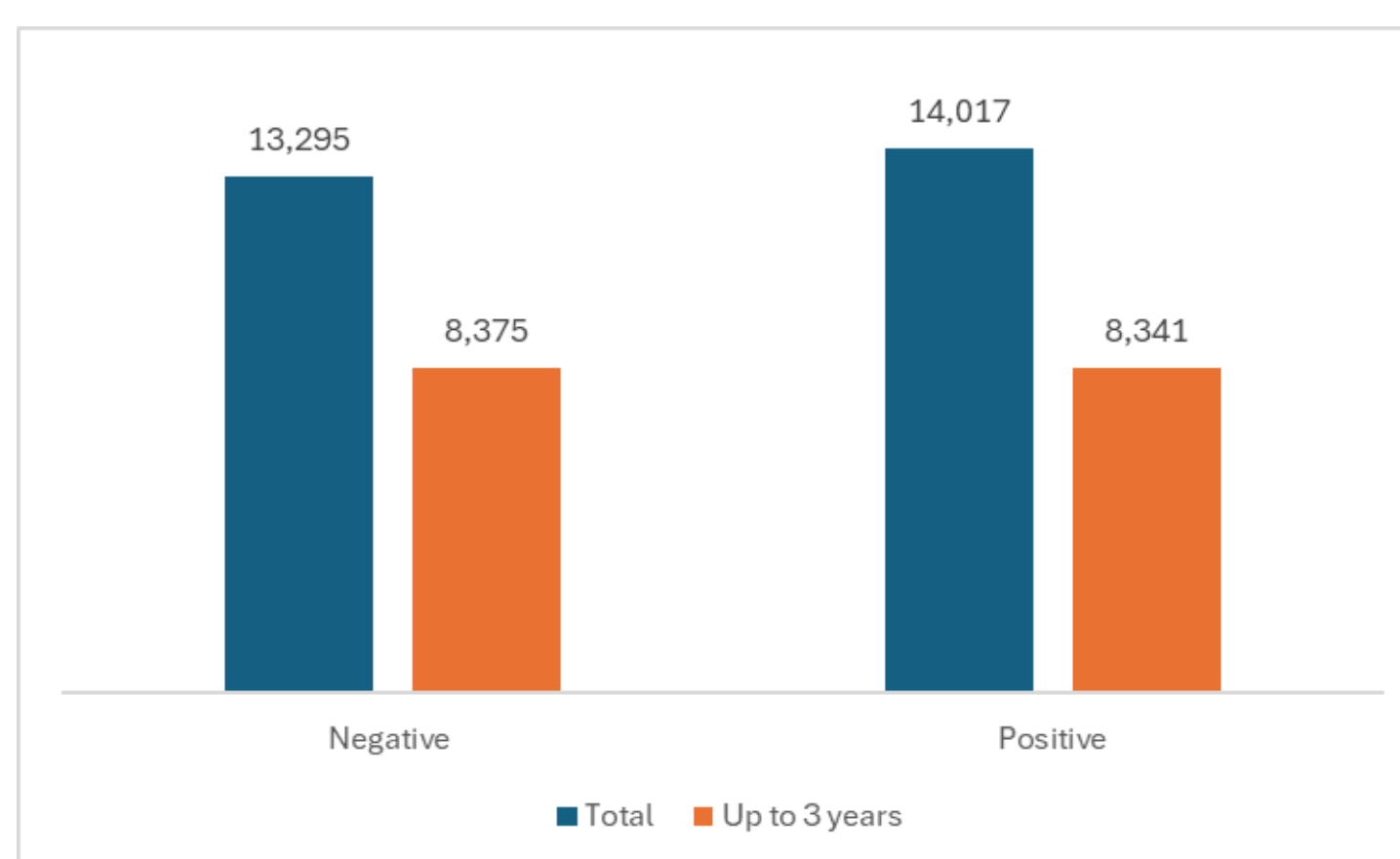
Number of Hospital per level of accreditation.

Description of comments:

- A total of 27,309 comments were collected: 51.32% of comments were evaluated positively and 48.68% were negatively.



Distribution of comments across time intervals and sentiment classification



Number of comments per sentiment classification

Over the past 3 years (2021 to 2023), it was found that the number of evaluations classified as "negative" was higher than "positive" in the first and third years. While in 2022, the number of evaluations classified as "positive" was higher than "negative".

- Content analysis of comments:**

- Negative sentiments: regardless of the accreditation level and type of management, negative evaluations commonly feature terms of higher recurrence, such as "doctor", "hour", "time", "waiting", and "care".
- Negative sentiments: a significant difference was observed between the full and excellence levels and type of management.
 - A strong emphasis was observed on the individuals involved in service delivery, particularly those classified at an excellence-accredited level. The word "team" emerged as the second most cited, revealing the importance attributed to teamwork.
 - Public hospitals focus on tangible aspects of their services, while users of private healthcare services highlighted promptness of the service.

CONCLUSIONS

This study provides insights into user evaluations of accredited institutions' services. Negative feedback highlights time and doctor services as areas for improvement, suggesting Lean and user journey mapping as potential methodologies. Positive feedback correlates accreditation levels with service perception, especially regarding healthcare professionals, infrastructure, and time. Future research could explore other accreditation types like Qmentum and JCI, and include non-accredited hospitals for a more comprehensive understanding.

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CONTACT INFORMATION

If you have any further questions, please feel free to contact us via email:

camilacorreameo@usp.br

fernando.berssaneti@usp.br

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