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**SARS-COV-2 IN ROMANIA:
EPIDEMIOLOGY, TRANSMISSION DYNAMICS,
AND RELATED PERCEPTIONS**

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Table of Contents

1. INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
1.1. BACKGROUND AND MOTIVATION.....	ERROR! BOOKMARK NOT DEFINED.
1.2. OVERVIEW	ERROR! BOOKMARK NOT DEFINED.
2. THE INITIAL CONTEXT AND IMPACT OF LOCKDOWN POLICIES	ERROR! BOOKMARK NOT DEFINED.
2.1. LITERATURE	ERROR! BOOKMARK NOT DEFINED.
2.2. CONTEXT	ERROR! BOOKMARK NOT DEFINED.
2.3. HEALTH CONSIDERATIONS DURING THE COVID-19 OUTBREAK.....	ERROR! BOOKMARK NOT DEFINED.
2.4. CONCLUSION	ERROR! BOOKMARK NOT DEFINED.
3. COVID-19 SUPPORT GROUPS - A CASE STUDY ON TWO ROMANIAN FACEBOOK GROUPS	ERROR! BOOKMARK NOT DEFINED.
3.1. INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
3.2. LITERATURE REVIEW.....	ERROR! BOOKMARK NOT DEFINED.
3.3. METHODOLOGY.....	ERROR! BOOKMARK NOT DEFINED.
3.4. RESULTS	ERROR! BOOKMARK NOT DEFINED.
3.5. DISCUSSION	ERROR! BOOKMARK NOT DEFINED.
3.6. CONCLUSION.....	ERROR! BOOKMARK NOT DEFINED.
4. USING THE POTENTIAL OF SOCIAL MEDIA TO STUDY ANTIBODY DYNAMICS	ERROR! BOOKMARK NOT DEFINED.
4.1. INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
4.2. UNDERSTANDING ANTIBODY DYNAMICS.....	ERROR! BOOKMARK NOT DEFINED.
4.3. ANTIBODY TESTS: QUALITATIVE VS. QUANTITATIVE....	ERROR! BOOKMARK NOT DEFINED.
4.4. EXISTING LITERATURE ON COVID-19 ANTIBODY DYNAMICS.....	ERROR! BOOKMARK NOT DEFINED.
4.5. APPLICATION OF SOCIAL MEDIA DATA TO ANALYSE ANTIBODY KINETICS.....	ERROR! BOOKMARK NOT DEFINED.
5. SARS-COV-2 TRANSMISSION DYNAMICS	ERROR! BOOKMARK NOT DEFINED.
5.1. INTRODUCTION	ERROR! BOOKMARK NOT DEFINED.
5.2. EPIDEMIOLOGICAL MODELS.....	ERROR! BOOKMARK NOT DEFINED.
5.3. SARS-COV-2 VIROLOGY	ERROR! BOOKMARK NOT DEFINED.
5.4. SARS-COV-2 EPIDEMIOLOGY.....	ERROR! BOOKMARK NOT DEFINED.
5.5. TRANSMISSION DYNAMICS IN ROMANIA: A CASE STUDY.....	ERROR! BOOKMARK NOT DEFINED.
6. CONCLUSIONS	ERROR! BOOKMARK NOT DEFINED.
7. REFERENCES	ERROR! BOOKMARK NOT DEFINED.
8. APPENDICES	ERROR! BOOKMARK NOT DEFINED.

ABSTRACT

This paper aims to analyse the impact of SARS-CoV-2 in Romania, focusing on the social and epidemiological dynamics of the pandemic. In this sense, it explores how the COVID-19 support groups on the social networking platform Facebook evolved during the pandemic, highlighting the changes that occurred both in the interactions and public discourse, as well as in the needs of individuals. In addition, the thesis analyses the potential of the Facebook platform as a crowd-generated data collection tool, presenting a demonstrator developed with the aim of analysing the dynamics of SARS-CoV-2 specific antibodies using the collected data and, implicitly, providing additional insight into the immune responses of individuals after vaccination or infection.

The thesis also presents a model to predict the evolution of the number of cases of SARS-CoV-CoV-19 based on an indicator derived from public crowdedness data reported by Google through its "Popular Times" function. This approach emphasises the potential of crowdsourced data sources not only as tools to predict the course of pandemics, but also to guide public health decisions. The developed model is then compared with a SEIR and a machine learning-based epidemiologic model, highlighting the advantages and limitations of each approach.

The results presented demonstrate the importance of using social networks as well as other unconventional data sources to improve health strategies in the context of global epidemiological crises.

KEYWORDS: crowdsourcing, antibody dynamics, social media analytics, covid-19 forecasting, public health data;