

# Chapter 1

## An Approach for Detecting Social Interactions on Mobile Devices

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### **ABSTRACT**

*Social exclusion can occur in a variety of ways, one of which is lack of social interaction. The recognition of the social relations that occur in a group is fundamental to identify possible exclusions. This chapter proposes SocialCount, a mobile application that identifies social interactions performed by the user. In order not to interfere in the naturalness of relationships, the application was designed to infer social interactions without user intervention. The data of the interactions generated sociograms that represented the structure of the relations in a group in a simple way. Through the sociogram it was possible to visualize the users who may be socially at risk and alert the professionals responsible to solve the situation.*

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## **INTRODUCTION**

Humans are constantly developing and for this they have the need to communicate, whether through spoken language, writing or through gestures. According to De Mello and Teixeira (2011), since birth man is a social being in development and all its manifestations happen because there is another social being. Even when he does not use oral language, the individual is already interacting and becoming familiar with the environment in which he lives.

Social interaction is one of the main means of human development, especially in the early years of life. The individual begins to interact, knowing and adapting to the environment in which he lives and to the culture that is submitted. For Rabello and Passos (2010), humans are born immersed in culture, and this will be one of the main influences on his development.

In situations where the individual is deprived of social interactions, he is subject to social exclusion. Social exclusion describes a state in which individuals cannot fully participate in economic, social, political and cultural life, as well as the process that leads and sustains such a state. Participation can be hampered when people do not have access to material resources, including income, employment, land and housing, or services such as education and health care (DESA, 2016).

Burchardt et al. (2002) identified four dimensions of exclusion: consumption (the capacity to purchase goods and services), production (participation in economically or socially valuable activities), political engagement (involvement in local or national decision-making) and social interaction (integration with family, friends and community).

The researchers' proposal in this work is to implement a tool capable of solving the following question: "How to capture the dynamics of social interactions between individuals to identify possible social exclusion in different environments?". The SocialCount application aims to capture the social interactions carried out by users and through these data, create social graphs that represent the structure of relationships between individuals in the same social environment. And thus, to highlight cases in which users are socially excluded in the dimension of social interaction.

Psychology and Sociology have a field of study called sociometry. Sociometry consists of using tests to know the structure of a group of people and identifying subdivisions and positions, such as leaders, isolates, rival factions, etc. (Jennings, 1959). It is a way of measuring the degree of relationships between people (Rostampoor-Vajari, 2012). However, the tests are performed through questionnaires. Therefore, they are subject to limitations that include several sources of errors. Completing surveys and questionnaires induces partiality, unconcern, etc. (Groves, 2004) and scaling restrictions of the experiments (Palaghias, 2016).

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