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Helping older people: is there an app for that?

António Cunha[a] *, Evandro Cunha[b] Emanuel Peres[a], Paula Trigueiros[c]

[a]*University of Trás-os-Montes and Alto Douro, 5000-801 Vila Real, Portugal and INESC TEC - INESC Technology and Science (formely INESC Porto)*
[b]*University of Trás-os-Montes and Alto Douro, 5000-801 Vila Real, Portugal*
[c]*LAB2PT, Escola de Arquitectura, Universidade do Minho, Azurém – 4800-058 Guimarães, Portugal*

Abstract

From social networks to health and fitness, everyday a lot of mobile devices applications (apps) are being developed. The variety and availability is such that people start to think that indeed “there's an app for everything”. Many of these apps address either problems or characteristics that affect older people and that are related with the ageing process (e.g. memory and visual aids apps). They can effectively help people and are under constant evolution.

However, the lack of knowledge about these available technological aids can undermine its dissemination and consequently the help that people really receive, especially those who need it the most: older people. As such, a methodological search for available aid apps was made both in Google Play and in iTunes: 536 were selected, their classification analysed and the kind of help that they provide identified. It was noted that either in Google Play or in iTunes the apps' categories are similar. Furthermore, it is not easily perceived what the type of help that each app can provide is and how is it provided.

Hence, based on the results from the aforementioned methodological search, this paper proposes a new scalable tree-based classification methodology for aid apps, which is considered more suited to perceive what the available aid apps for mobile devices are. The existing apps were then characterized based on the proposed classification, to determine what the main aid that they provide is.

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* Corresponding author. Tel.: +351-259-350-369.
E-mail address: acunha@utad.pt

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1. Introduction

Population ageing is progressing rapidly in the world, especially in developed countries. This tendency is creating an attractive market for most information and communications technology (ICT) products and applications, as well as for smartphones and other personal technological devices. Since Apple launched its trademark catchphrase "There's an app for that", people started to imagine that there's an app for everything. This catchphrase is even defined in the Urban Dictionary[1] as a possible answer to other peoples' problems.

Everyday, a great deal of apps is being developed for a variety of purposes. Many address either problems or characteristics that affect older people and may include functionalities known to be commonly related to the ageing process, such as: memory, visual and haptic aids; features to minimize error and safety features[2]. Some apps are specially designed to facilitate the use of smartphones by older people. As such, they may be focused on their interface, namely by simplifying its general appearance, reducing the number of features and steps for basic tasks and increasing pictures' size and the text font. Knowing that technology is constantly evolving and helping to solve new problems, the potential of the aforementioned technologies for helping older people is far superior to the help that is indeed received.

The usual barriers to the use of ICT products and applications by older people are related to the devices' accessibility and support, to age, marital status, education and health[3]. Particularly when regarding aid apps, another possible reason is the lack of knowledge about the available aids and their usefulness. There is also an excess of information and permanent changes of available solutions. If it is not expected that a common smartphone user searches for novelties in apps stores everyday, when it comes to an older person this simply won't happen. Perceiving usefulness is a strong motivation for the use of ICT[3].

A methodological search made in Google Play and iTunes for apps considered to be of help to people is presented: 536 were selected, their classification analysed and the kind of help that they provide identified. Based on its results, this paper proposes a new scalable tree-based classification methodology for aid apps, which is considered more suited to perceive what the available aid apps for mobile devices are. Then, the existing apps are characterized based on the proposed classification, to determine what the main aid that they provide is.

With the proposed classification methodology, the authors intend to contribute to better organize apps and to clarify how smartphones might effectively help older people.

The rest of the paper is structured as follows: in Section 2, some related work regarding apps classification schemas is presented. Then, in Section 3, the methodology used for selecting existing apps that might be of help to older people is detailed. Google Play and iTunes apps classification and organization schemas are compared in Section 4. Finally and just before the conclusions that derived from this study, presented in Section 6, a new scalable tree-based apps classification methodology, focused on problems or characteristics that affect older people and that are related with the ageing process, are presented and discussed in Section 5.

2. Related work

The classification of applications for mobile devices is made by those who develop them in the submission process to an app store. This may mislead users, especially in app stores with permissive publication policies. Additionally, each store relies on its own classification scheme, targeted to its functionality. For instance, the Amazon app store focuses on readers, hence its classification scheme is more directed to that target-audience than to common users. As such, it only hosts apps for the Kindle eBook reader[4].

West et al.[5] in 2012 conducted a study with the objective to overview the developers' written descriptions of health and fitness apps and to appraise each app's potential for influencing behaviour change. They analysed the descriptions of 3336 paid apps from the health and fitness categories, available on iTunes during February 2011. Then they were categorized using the Precede-Proceed Model (PPM)[6], which identifies the functions or goals of health-related mobile apps into three categories: predisposing, enabling, and reinforcing.

In 2014, Wang A. et al.[7] proposed a classification scheme for analysing apps used to prevent and manage disease in late life. Their purpose was to facilitate the selection of mobile applications by older adults so that they can choose the most appropriate apps for them. They selected 199 apps from the "Health & Fitness" category of iTunes, analysed