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MOBILE PHONES' SOCIAL IMPACTS ON SUSTAINABLE HUMAN DEVELOPMENT: CASE STUDIES, MOROCCO AND ITALY¹

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Abstract. Information and Communications Technologies (ICTs) include the modern tools of knowledge-sharing and communication used in daily citizen's activities, such as Internet, computers and mobile technologies. The expansion of mobile telephony has been one of the most spectacular changes in the developing world over the previous decade. The increasing ubiquity of mobiles in developing countries presents both opportunities and challenges, especially for critical segments such as social one. The use of mobile phones is influencing numerous aspects of society, and its positive and negative impacts are widely highlighted: relationships and involvement in public life, the new communities that has been created and the human relationships that have radically changed. Smartphones are not just communication devices but can also take pictures, playing music and games, provide location-based services, internet... In developing countries, the main use is through phone communications and messages to overcome the distances. Yet, all these profits only come from the use of mobiles. However, we should not forget the social issues related to it. Our work investigates how some human attitudes, while using mobile phones can influence sustainable human development in Morocco and Italy. Specifically, the study seeks to assess how mobile phones can impede over social issues. The analysis was conducted in the framework of the European project ShuMed; it relies on a survey that involved different categories of people (students, employees, unemployed, professors, engineers, administrators...). A total of approximately 120 participants were randomly selected and included in the investigation. The analysis of the collected data; from a questionnaire; showed that the majority of the respondents used their mobile phones without paying attention to some daily attitudes, that has a significant negative impact on the human well-being.

Keywords: Sustainable Human Development (SHD), Morocco, Italy, Developing countries, ICT, Mobiles, social aspects

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1. Introduction

Telecommunications history knew a turning point in 2002; indeed, this was the first time that the number of mobile phone subscribers exceeds the number of fixed-line subscribers on a worldwide scale. This quantitative evolution was accompanied by a significant qualitative growth. The mobile phone is no longer just a technical system for communication, it became a key 'social object' presents in every aspect of a user's life. Today, the smallest device has more computational power and high performance than the largest computers had a generation ago. And this computational power continues to grow. No wonder that the mobile has been adopted at an amazing rate across cultures and countries. With the increasing penetration rates, social and academic interest has been directed toward the social impacts of mobile phones, particularly in relation to well-being and daily social interactions with people.

The Information and Communication Technologies (ICT) have been for a long period perceived primarily from the perspective of their unquestionable contribution in terms of productivity of economy and the population's well-being. It is only recently that their environmental, social and economic impacts have become a primordial concern. The considerable extension of their program, difficulties in ensuring the power supply of big data centres and the production of toxic waste volumes have led to the emergence of a global reflection under the Sustainable Human Development (SHD).

The global economy is progressively becoming dependent on ICT systems, while developing Countries are unfavourably operating under lack of e-readiness, open competition, and unsteady sustainability policies (Belás et al. 2016; Vaško, Abrhám 2015; Štitalis, Klišauskas 2015; Olaniyi, Reidolf 2015; Fuschi, Tvaronavičienė 2014; Samašonok et al. 2016). Content, infrastructure and human ability are quickly increasing through enhanced participation of private sector investment, but not with inclusive vision and enough benefits to the marginal communities in rural regions. However, the infrastructure needs to be designed to responds to the requirements for mass distribution of useful information to the community. The increasing international interest in the potential of ICT as a tool for fostering sustainable human development has been reflected in a series of activities, and accelerated by a number of events, like the G8 2000 meet in Tokyo, WSSD Johannesburg Summit in 2002, and WSIS Geneva Summit in 2003. These international conferences, attended by several experts from many developed countries, were platforms of interesting, interactive and open debates for discussing the issues of access and use of the information technologies in developed and developing countries.

A first category of ICT impacts on human development comprises those that can be met with effects on environmental sustainability. Since then, the telecommunications industry segment has experienced an exponential growth mainly between 2005 and 2010. In this regard, it is important to focus on the Moroccan successful experience "in the introduction of ICT in different areas, noting that the Kingdom has launched since 2006, an ambitious program called "Generalization of Information Technologies in Education" (GENIE). This program targets to generalize the use of information and communication technologies and to integrate them in different fields; mainly in the system of education and vocational training. The most popular example of ICT is the Cell phone, which has become part of our lives. We rock it in our hands gazing fondly at it, waiting impatiently for it to ring. Should we keep them so close, if we knew where it comes from and where it goes?

Since the introduction of modern mobile telephony in the 1980s, there have been dramatic reductions in their weight and changes in battery chemistry that have reduced the natural resources required, both in terms of energy and materials in the whole production process, use and final end-of-life.

In this regard, our paper will focus on the analysis of the social issue which is mostly affected by mobile phones as ICT technology in Morocco, including positive and negative impacts. The study will be supported by concrete statistics of research work in the kingdom and will be compared by statistic results from Italian community. It will be demonstrated through our paper that mobile phone allows easy access to information, and to be reachable even to those who does not have any level in studies or qualifications in ICT. On the other hand, this technology presents some non-negligible social effects that will be detailed in our paper, while showing some human attitudes that reflects non awareness of the negative influence. In addition, some solutions will be proposed to mitigate the drawbacks of the Mobile technology use.

2. Materials and methods

The research was conducted in two main countries: Morocco from the African continent and Italy from the European one. In the context of SHuMED project N° 319017 (FP7-PEOPLE-2012-IRSES: Marie Curie Action "International Research Staff Exchange Scheme"), we performed mobility internships in 'Roma Tre' university and the university of Pisa in Italy. The subject of these mobilities was 'the Sustainable Human Development for MED Countries mobility' that is why we have taken this opportunity to broadcast our questionnaire and collect data from the Italian community.

2.1. Mobile Technology and sustainable development

The growing acceptance of sustainable development as an aim, and the ICT progress share many characteristics as drivers for change within modern economies. Both require us to rethink about the nature of goods and services. However, there have been surprisingly few efforts to assess whether the growing acceptance of the sustainable development agenda and the growth of ICT will complement or conflict with each other. In fact, mobile devices need to be reviewed across their entire lifecycle in terms of resources and energy they use, their manufacturing process and usage as well.

2.2. Data collection & methodology

A content analysis was realized on several indicators related to daily citizen activities while using mobile phones. Hence, two samples were consulted through a survey that has been addressed to the Italian and Moroccan citizens. This led to the identification of the most impacting attitudes and the elaboration of a list of behavior that should be taken into consideration while discussing the effects of mobile technology as an ICT tool on sustainable human development. In this method, people from each sample (Moroccans and Italians) were first asked to answer individually the different questions of the survey. Notice that both samples include approximately 70 people from each country, in totally 135 persons. The compiled results of the questionnaire will be then presented and discussed in the paper. The whole process was completed without actually meeting or knowing real identity of participants, thus avoiding direct confrontation. The aim was not to reach unanimity, but rather to assess and to ensure a high degree of credible answers. The list of participants was elaborated for each sample group on the basis of experience, knowledge of the mobile technology and occupation (managers and employees of ICT sector, investors, students, unemployed, regular user...). Participants were allowed to add or reformulate some items if necessary, and were asked to justify their answers or to provide any additional comments to clarify their views on each question.

The questionnaire contains 12 questions, linked to each other to provide improved accuracy of participant responses. The proposed interrogations aim principally to show the awareness level of Italian and Moroccan respondents on the social impact of the technology they use, especially mobiles phone.

3. Results and discussion

Mobile phones have become universal and basic communication tools used nowadays not only for calls, but also for Internet access, sending Data and information. All this services provided by a simple smartphone make it a

very complicated device with a lot of components that come from all over the world. They have become an indispensable tool in society, for everyone from elementary school children to adult citizens, owning at minimum one device per person. This fact can be confirmed from Figure.1: as it can be seen, 93.3% of participants own a smartphone. Moreover, about 70% and 83% of Moroccan and Italian participants, respectively, consider internet as an essential tool on their mobiles (Figure 2). Young people are constantly using their phones for texting, checking email, taking pictures, and tweeting. Supposedly, older people use their cell phones less frequently.

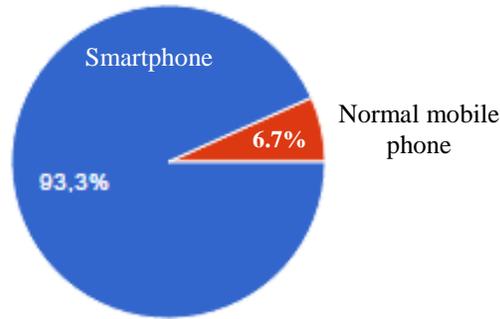


Fig.1. Type of Mobile phone used by all respondents

Source: compiled by the authors

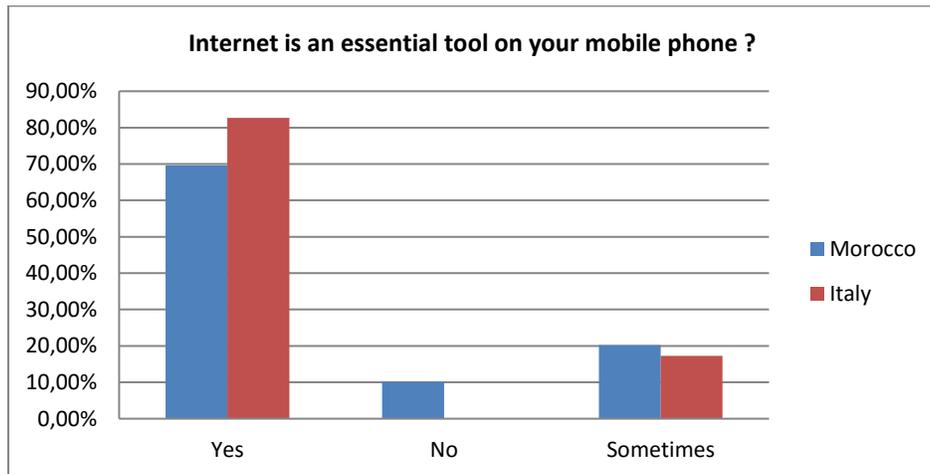


Fig.2. Importance of internet access on Mobile phone

Source: compiled by the authors

Mobiles have many features that are advantageous. Basically they allow people to connect with each other wherever they are in the world. Additionally, smart phones also serve as handheld small computers that permit people to quickly perform tasks as diverse, research, word processing, translation, voice recording, email and access to a broad range of information. Another interesting advantage is making it easier than ever before to contact family and friends, especially for users who do a lot of traveling. This can be clearly observed from the results showed in Figure.3, since more than 23% (in both cases: Morocco and Italian) uses social networks and it helped them to stay more connected to family and friends than they were in the past, since they can get in much more constant contact with individuals and hence getting frequent updates. Additionally, more than 80% of the participants (Figure 4) said that phones helped them to develop new social relations and also professional ones with new friends and new contacts. It keeps them also informed on recent events, news, or new product because

of the connectivity to internet. It can be also a relaxing instrument when we use it for playing games or listening to music.

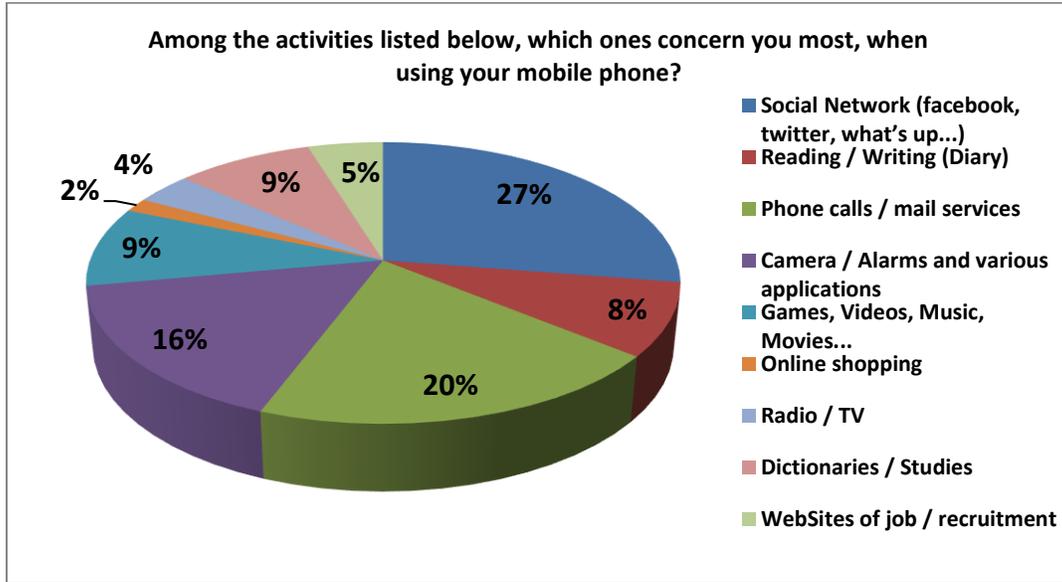


Fig.3. Activities carried out by mobile phone's users: case of Morocco

Source : compiled by the authors

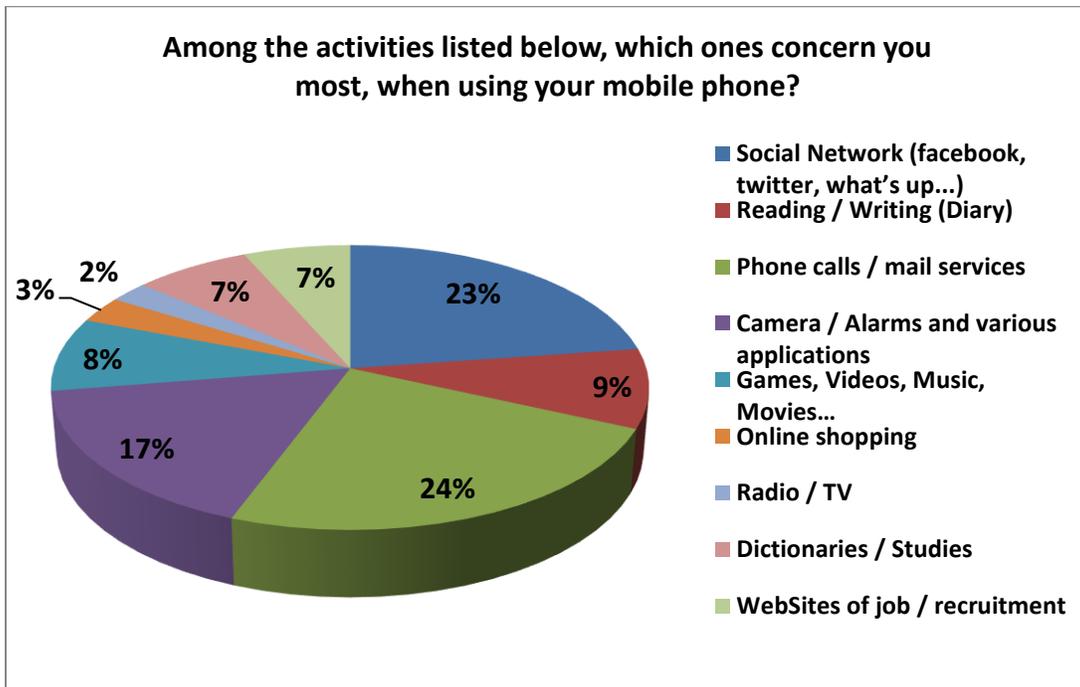


Fig.4. Activities carried out by mobile phone's users: case of Italy

Source: compiled by the authors

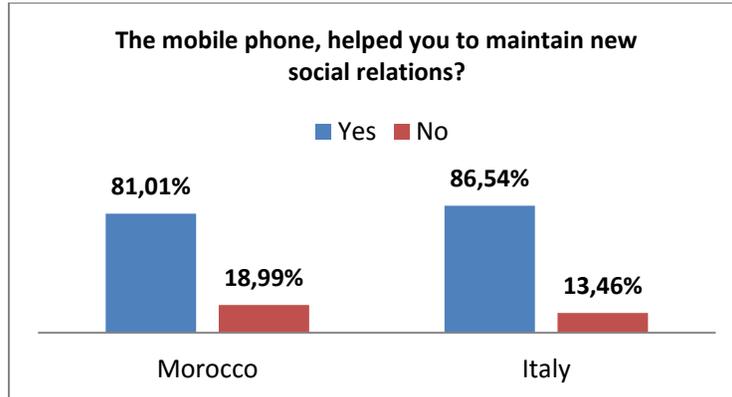


Fig.5. Influence of mobile on social relations

Source: compiled by the authors

Although mobile applications and texting have made our lives easier, we should pay attention to the impact they've had on the relationships we have with one another. People are scared from missing something if they don't check their mobiles and when they are not doing something important they tend to interact with their phones to entertain themselves, this constant reliance on mobiles is having a negative impact on people's interpersonal skills. The use of texting, social networks, and other communication's applications, is eroding people's ability to write correct sentences with a real meaning and hamper the art of dialogue and communications.

From Figure.5 it can be gotten that around 81% and 70% of the Moroccan and Italian respondents, respectively, prefer to make phone calls or to send messages to close people instead of visiting them, which demonstrates that phones are eroding our ability to communicate in face-to-face and then reducing family conversations.

The great number of messages and announcements received make mobile's users constantly alert to their mobile. As a result, it became harder to focus on significant tasks that necessitate great concentration. Furthermore, the high accessibility and varied features of smart phones encourages people to constantly use their phones even in some situations that may be unsuitable, like work, school and family gatherings.

Regarding the results of the two questions "While being in a face-to-face conversation with someone, may you interrupt it, to look at your cell phone?" and "What is your reaction when members around you (friends / family) spend the entire evening in smartphone?" Presented in Figure.6 and Figure.7: more than 64 % of Italian and Moroccan participants may sometimes interrupt their face to face conversations to look at their cell phones, while more than 64% are extremely unsatisfied when a member around is spending a long time looking at his phone instead of talking.

Several people are abusing their use of mobile phones. Such people may ignore those around them; they become emotionally addicted. Another important point is related to save timing: non-stop use of mobiles may cause spending too much time which could have been used for something more productive and useful. An individual may tend to ignore main tasks or responsibilities that need to be carried out while overusing the phone.



Fig.6. Impact of mobiles on human relations

Source: compiled by the authors

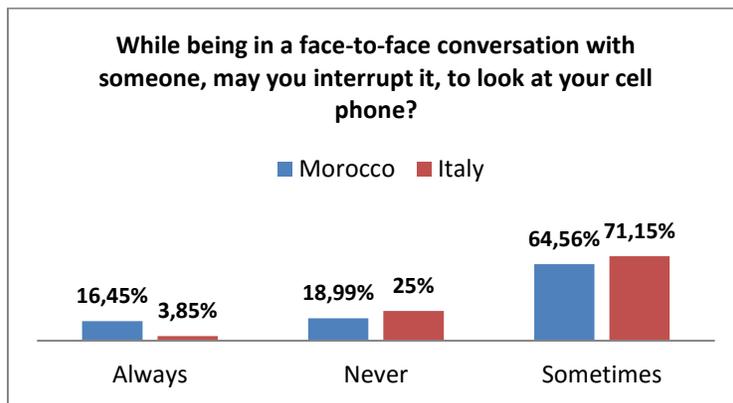


Fig.7. Impact of mobile on human attitudes

Source: compiled by the authors

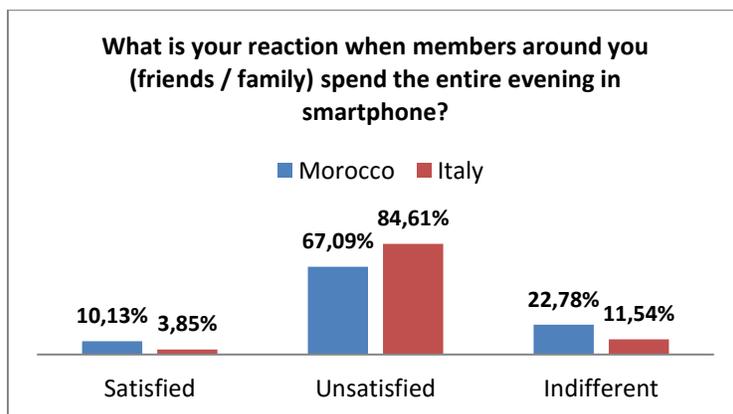


Fig.8. Influence of mobile on human relations

Source: compiled by the authors

Conclusions

With each passing season, another wave of mobile devices is emerging with more efficient and powerful than the previous generation. We are at the point where anyone armed with a current smartphone model or tablet is able to handle almost all tasks without needing anything else. Cell phones are the most used ICT tools today. However, they are not just limited to communication purposes; they also permit access to internet, information, multimedia services & Social Media and networks. Owning a mobile phone itself is not a bad idea at all. The main problem is that several people do not make effective use of the mobile phone device as they should, which frequently affect our social lives negatively.

Nevertheless, the use of the smartphone can contribute negatively to better social attitudes with reference to behavior or attitude and communications. Many people are overusing their mobile phones. Such persons tend to ignore those around them; they become emotionally devoted to their phones.

Additionally, we can notice today that people do not pay attention to some bad practices: phones can sometimes distract traffic cop, instead of focusing on the car drivers and organizing the circulation, traffic cop may move their eyes from the road and focus on the mobile phone in order to be able to use it and to be reachable.

Smartphone can be also a source of great disruption in classrooms and workplaces, as it offers to individual access to games, texting, social media and the internet. So the smartphones have the potential to decrease the attention students and professors pay to classes and can therefore be negative to learning.

Another important and recent point is that most of children played Pokemon, or at least watched it. This is what leads to some problems including: people are not exactly always watching where they are going, sometimes people are going into businesses in search of Pokemon and not supporting the business and people are losing sleep over this game.

Nonetheless, the arguments and reasoning presented above do not necessarily mean that the mobile phone is not important. The smartphone device is a very important communication tool as it was built to improve social contacts and network while enhancing business productivity. Mobile phone helped to maintain new social relations. With mobile phones, there is an ability to update the behavior on where the families and friends are. There is also an ability to know what is happening around them. The mobile phone enables people to be on time during appointments. It keeps them informed on current events because of its connectivity to the internet. It relaxes it also when people play games with it or listen to music through it. Therefore the main idea is that to avoid the problems of extensive use of mobile phones, youth and especially students need to be sensitized to use their mobile phones productively, for example doing research, keeping themselves updated and having informative interactions with others. It should be prohibited to use phones in classrooms; with all this in place, allowing student to have phones would be worth it. Another way to limit this problem is to regulate the use of mobile phones during work hours by laws that require compliance working also to have a written policy for workplaces.

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