

Impact of the COVID-19 Pandemic on Citizen Travel Rules Related to Intelligent Mobility Use in Algeria: The Influence of Personal Factors and Health Restrictions

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ABSTRACT

The study focuses on the impact of the COVID-19 pandemic on ICT-related travel policy, based on a statistical analysis of the uptake and use of smart mobility services by the Algerian population before and during the crisis. A questionnaire distributed via the internet on social networks was used to assess ICT use and evaluate the influence of personal factors on the choice and frequency of use of technologies in mobility. The sample consisted of 368 valid individuals. Several parametric and non-parametric tests were performed to address the hypotheses posed. The results suggest that the diffusion of COVID-19 would influence Algerian citizens' mobility, which differs by gender, age group, location, and status. This work also examines the effectiveness of restrictions and tests ICT services in the face of the COVID-19 pandemic. Although mobility changes according to need, some modes of transport adapt to circumstances and others do not. Policymakers should therefore consider these changes in travel policy to develop adequate services for future disasters.

KEYWORDS

COVID-19, ICT, Impact, Mobility, Restrictions

INTRODUCTION

In the past, cities were built in a hygienic way. The hygienist movement appeared in the 19th century with the first anal proposed by Baud (1981). It remains the only current that linked urban planning and medicine, considered "a new way of rethinking the city from the point of view of hygiene and health" (Costa, 2012). Over the centuries, architecture and urban planning have lost their sense of hygiene by referring to culture, traditions, symbolism or, more recently, prestige and luxury, with relying on medical progress, which alone has been able to cope with past epidemics, thanks to vaccines, remedies, and medicines (Rahm, 2020). A few years ago, health was considered an essential and founding factor of urban planning. Whenever medicine failed in the face of a health crisis, space and urban planning reacted preventively (Levy 2012, cited by Nader, 2013). Several social utopias have left traces in this sense, where the organisation of society depended on the organisation of space itself (Ghorayeb, 2019).

In December 2019, at the time of its outbreak with the first case reported in Wuhan, COVID-19 was considered an epidemic. Still, since March 11, 2020, the WHO (World Health Organization), with an

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unprecedented rapid spread on all continents, has considered it a global pandemic. It is considered a public health emergency of world-renowned (WHO, January 30, 2020), which has unexpectedly and dramatically disrupted human life. According to the Swiss architect Rahm (2020), this phenomenon would be a return to normal about the epidemics and natural disasters that humanity has already faced. The architecture of cities is still a witness. This idea is also supported by Kanda and Kivimaa (2020). The authors consider the global phenomenon an opportunity for humanity to witness it, study it closely for a better consideration of sustainability, and prepare for this type of chaos in the future. As for mobility, recognised as being the main factor responsible for the virus's transmissibility, massive population displacements and the role of transport have facilitated the spread (Zhang et al., 2020). Wilson (1995) argued, "given the unprecedented volume, speed, and range, global travel is a major factor in the rapid spread of today's diseases".

Intelligent mobility alone affects all the technological advances that optimise travel and those that reduce or eliminate it; it is the key to the intelligent transformation of cities (Audenhove et al., 2013). It uses ICT in modern transport technologies to improve urban traffic (Albino et al., 2015).

After joining the SD (sustainable development) wagon, Algeria is getting into the bath and joining the smart cities wagon. The chaotic development of these cities over the last two decades leaves it little choice and encourages it to do so. Algiers has long suffered from inconsistencies of order: socio-spatial, socio-economic and environmental. The depletion of natural resources has only made things worse. Algiers has been confronted for years with unprecedented population growth, a dazzling urban sprawl consuming space, and generating displacements. It has become a city spread out to see even burst, its road network now saturated and associated with hazardous urbanism, many problems have been raised: conurbation, an imbalance between centre and periphery, pollution, and especially an alarming situation of congestion CTTP (*Organisme National du Contrôle Technique des Travaux Publics*, 2006), etc.

Algiers is then immersed in the "magic circle" (Bakour et al., 2018), described by Orfeuil (2001) as the dependence of a population on the personal vehicle, where Dupuy (2002) points out that the dependence reflects the difference between the accessibility of motorists and non-motorists, causing this increase: An antiquated public transportation system, an increase in motorised households RGPH (General Census of Population and Housing, 1998-2008), and an increase in the number of cars ONS (National Statistics Office, 2011), this dependence generates more infrastructure, which in turn generates more services for motorists, which attracts more motorists (Orfeuil, 2001). Several initiatives have been taken to address this situation.

The "Algiers Smart City" project, a hopeful project led by the Wilaya of Algiers, was exhibited at the International Summit. Over two days, on 27 and 28 June 2018, it brought together more than 4,000 participants of different nationalities. The participants discussed and proposed technological solutions for Algiers, affecting the different sectors that make it up, mainly mobility. Following this summit, several agreements were signed. The "Fablab" was created to test the technological solutions envisaged. Several startups were developed and launched. New ICT mobility services enhance and facilitate travel, such as taxi apps, carpooling, and e-commerce (buying, selling, and delivering). Other services that erase and eliminate travel include telecommuting, video conferencing, e-learning, and remote medical consultation.

Although the Algiers Smart City project offers innovative solutions for the capital, the authors find its insertion and integration abrupt and brutal, both at the planning level and with the citizens. They point out that the opinion of citizens on the issue remains divided, some finding the project itself a myth while others find it innovative but not a priority. However, in times of health crisis, the authors wonder if it is necessary to ensure, accompany, and secure people's movements or suppress them by privileging remote services. They also wonder whether the pandemic may have impacted the use of ICT services. Hence, in this study, the following question is asked: *What is the Impact of the COVID-19 pandemic on citizens travel rules related to the intelligent use of mobility: the influence of personal factors and health restrictions in Algiers?*

With this in mind, this study aims to:

1. evaluate the impact of the COVID-19 pandemic on the travel policy of the citizens of Algiers to ICT mobility services;

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