Telecommunications Policy 40 (2016) 602–616

Contents lists available at ScienceDirect

Telecommunications Policy

URL: www.elsevier.com/locate/telpol

Spatial inequality and the Internet divide in Indonesia 2010–2012

Sujarwoto Sujarwoto [a,*], Gindo Tampubolon [b]

[a] Brawijaya University, Malang, Indonesia
[b] University of Manchester, United Kingdom

ARTICLE INFO

Available online 3 March 2016

Keywords:
Spatial inequality
Internet divide
Indonesia

ABSTRACT

Spatial inequality has been one of the key development characteristics considered across developing countries. However, relatively few studies examine the mechanisms by which spatial inequality explains the existing digital divide in a developing country. Applying the normalisation and stratification thesis in diffusion theory, this study examines the ways in which spatial inequality is related to the Internet divide in Indonesia, a developing country that is currently growing in its use of Information and Communication Technology (ICT), but that has experienced unequal regional development in the last three decades. Data comes from the Indonesian national socio-economic survey (Susenas) 2010–2012, which comprises 3.3 million individuals, 750,000 households and 292 districts. Far from moving towards convergence, the Internet divide expanded during this period; the inequality of Internet access by age, gender, income, and education deepens and widens across urban–rural, city–countryside, and remote island–mainland island areas. The results of analyses using both stratified and multilevel models indicate that supply factors across districts – particularly district disparities in telecommunications infrastructures, human capital and education services – are associated with the Internet divide. The results are robust against individual, household and district socio-economic characteristics associated with the Internet divide. Enlarging the distribution of telecommunication infrastructures and education facilities, particularly across districts in rural, countryside and remote islands, may thus help to bridge the Internet divide in Indonesia.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

The debate about the impact of the rise of the information society has produced deeply contested visions predicting the future direction of trends (Norris, 2001; Van Dijk & Hacker, 2003; Hargittai, 2002; Warschauer, 2003; Dutta & Mia, 2007). Optimists hope that the development of the Internet will have the capacity to reduce, although not wholly eradicate, traditional inequalities between the information-rich and the information-poor both between and within societies (Norris, 2001; Van Dijk & Hacker, 2003; Hargittai, 2002; Warschauer, 2003). In contrast, pessimists believe that ICTs will reinforce and exacerbate existing disparities. Sceptics suggest that both the fears and hopes are exaggerated, with technologies adapting to the social and political status quo, rather than vice-versa (Norris, 2001; Dutta & Mia, 2007).

* Corresponding author.
E-mail addresses: sujarwoto@ub.ac.id (S. Sujarwoto), gindo.tampubolon@manchester.ac.uk (G. Tampubolon).

http://dx.doi.org/10.1016/j.telpol.2015.08.008
0308-5961/© 2015 Elsevier Ltd. All rights reserved.

Norris (2001), further makes a distinction between normalisation and stratification models of ICT diffusion. Normalisation thesis suggests that over time, access to the Internet will become widespread, overcoming social and other boundaries, to make its day-to-day use appear normal. This thesis suggests that the profile of the online community will come to reflect society as a whole, given the wider availability of simpler and cheaper plug-and-play technologies and faster broadband services, facilitating delivery of popular mass entertainment (Norris, 2001; Dutta & Mia, 2007). It is presupposed that the differences between groups increase only in the early stages of adoption, and that those differences disappear with saturation in the last stages. Certainly, the ubiquity of ready devices such as Wi-Fi networks, tablets and smartphones enabling access to the Internet supports this notion.

In contrast, the stratification thesis draws on experience with older technologies (such as the telegraph, automobiles, or telephones in the twentieth century) to suggest that if Internet technology traces the same path, then the notion of a rise in social inequality in terms of access cannot be easily dismissed (Norris, 2001; Hargittai, 2002). Although social stratification is not inevitable, depending as it does on, state intervention to provide enabling infrastructure and ensure equitable distribution and the nature of skills required to use the technology, digital access may persist in dividing groups in society. This outcome is far from inevitable, because the conditions under which innovations implemented are also determined, in part, by their social consequences. The existing social structure may thus, also play a role; as Rogers (2003) pointed out, innovation in highly stratified societies usually reinforces existing socioeconomic inequalities. Norris (2001) provides empirical evidence that, despite the high rate of penetration of ICTs in Europe and the United States, the digital divide between and within countries is still perceptible.

This study attempts to make a distinction between normalisation and stratification theses in the context of a developing country. A more nuanced understanding of the nature of ICT diffusion can be gained through examining the links between widening spatial inequality within a developing country and the digital divide. Amidst growing concern about increasing inequality, the spatial dimensions of inequality have begun to attract considerable policy interest (Lessmann, 2014; Kanbur, Rhee & Zhuang 2014; Tan & Zeng, 2014). In China, Russia, India, Mexico and South Africa, as well as most other developing and transition economies, there is a sense that spatial and regional disparities in economic activity, incomes and social indicators have been on the increase in the last two decades (Kanbur et al., 2014; Kanbur & Venables, 2005). For developing countries that experience deep disparities across space, information and communication technology offers a sliver of hope for bridging these disparities. However, spatial inequality with regard to ICT access may itself become a development challenge, given the growth of Internet use. The gaps in physical access continue to grow in these developing countries; the question is when and to what extent they will close again, equalising access for every social category (according to either normalisation or stratification). A deeper analysis of these types of spatial inequality and the mechanisms explaining unequal ICT access would prove a significant contribution to developing countries' efforts to address the digital divide.

This study aims to answer some of the questions raised by examining the mechanism linking determinants producing spatial inequality with respect to the Internet divide in Indonesia. It is also often cited as an emerging economic success (World Bank, 2008). However, its economic development is characterised by an endemic problem of spatial inequalities (Akita & Lukman, 1995; Hill, 1996; Resosudarmo & Vidyattama, 2006; Hill, Resosudarmo & Vidyattama, 2008; Yusuf, Sumer & Rum, 2014). We thus, also consider in some depth whether these spatial inequalities reinforce the social inequalities in Internet access. In this study, spatial inequality means a disparity in resources and services due to discrepancies in social and economic factors across geography (Kanbur & Venables, 2005). Four measures of spatial inequality related to Internet access are used: economy, human capital, telecommunication infrastructure, and education services. In order to achieve the aim of this study, annual data from Susenas 2010–2012 were studied using multilevel models to account for the effect of spatial inequality across districts on unequal Internet access among individuals. The next section presents a synthesis of the literature on spatial inequality and the digital divide.

2. Spatial inequality and the digital divide

The notion that the Internet could reduce the economic importance of geographic distance has been discussed in the literature (Negroponte, 1995; Kelly, 1998; Cairncross, 2001). Cairncross (2001) describes the narrative of the Internet as the death of distance. The Internet, many believe, will level the playing field for people both near and far from the centre. It allows people to communicate over distance and thus, lifts the constraints of geography. Some believe that this will not only change the social world but will also effectively eliminate distance as a cost factor (Grimes, 2000). According to this view, the economy would work in a space, rather than a place; the cost of transport would be drastically reduced, distance would become less important, and peripheral regions would benefit from opportunities that were not available in the economy based on the manufacturing industry (Negroponte, 1995; Kelly, 1998). Since ICTs are mainly based on immaterial and human capital investments, regions or areas that have historically suffered from isolation, high transportation costs, or a lack of physical private and public infrastructure might find new paths for growth. Consequently, according to this view, the concentration of income opportunities and wealth should decrease over time (Compaine, 2001). Although other predictions were also present in the debate on the impact of the digital economy (Norris, 2001), this view was largely dominant.

However, in the same way that normalisation is not only the thesis used to organise evidence regarding Internet access, the death of distance is not the only narrative by which to explain the nature of ICT access across and within countries. In fact, this relationship is not merely about geographic proximity but also reflects spatial inequalities. Indeed, spatial

Download English Version:

https://daneshyari.com/en/article/557212

Download Persian Version:

https://daneshyari.com/article/557212

Daneshyari.com