

# Digital Economy and Gender Well-Being Measurement: Evidence from Indonesia

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The digital economy has infected all the joints of life in almost of every society today. As consequent, the dynamics of the social-economic sectors cannot separate from the use of digital technology. However, quantitative measurements and impacts still rarely calculate in the form of policy paper analysis. Therefore, this study aims to address the challenge of measuring the impact on the digital economy access for the welfare of communities in a country with evidence of Indonesian cases. Information society era can be seen through the rapid growth of Information and Communication Technology (ICT), but there are still gaps among countries and within countries which is known as digital divide. Digital divide is also as a gender problem. Digital divide as a problem of women including access to the internet and others lack of access to ICTs, and also digital divide in terms of advanced ICT skills. ICT development index as a composite index which combine eleven indicators into one benchmark measure, consists of three sub-index : ICT access and infrastructure, ICT use, and ICT skill. Based on the International Telecommunication Union (ITU) data, sub-index use has the smallest contribution to ICT development index in term of average value in 2015. By improving internet access, digital divide can be reduced.

Factors affecting economic development can be classified into two, they are economic factors and non-economic factors. Investment in human capital could have a more permanent impact on the growth process if high skills and training go hand-in-hand with more intensive research and development and a faster rate of technological progress, or if the adoption of new technologies is facilitated by a highly skilled workforce (Bassanini and Scarpetta, 2001). Robert J. Barro (1996) found that the growth rate is enhanced by higher initial schooling and life expectancy, lower fertility, lower government consumption, better maintenance of the rule of law, lower inflation, and improvements in the terms of trade. By providing access to information, connecting people to business everywhere, and opening up new markets, the internet can transform the very nature of an economy and support economic development (Deloitte, 2014). Internet enhanced speed and quality of information flows result in reduced transaction costs, internet enhanced access to financial capital with services such as mobile banking, internet access enhances the productivity of labour and capital, internet improved human resource qualification and

specialization, internet can be facilitation of entrepreneurship and business expansion so it opens the access to new markets, and there will be greater innovation and adoption of new organizational models and business processes (Deloitte, 2014).

There are a number of factors that make it difficult for people to obtain access to the internet such as poverty; high device, data, and telecommunications charges; infrastructure barriers; digital literacy challenges; and policy and operational barriers (West, 2015). In addition, West (2015) mentioned that lacking disposable financial resources makes it difficult to purchase devices or gain access to digital services. According to Ernst & Young, over the next decade, the impact of women on the global economy – as producers, entrepreneurs, employees and consumers – will be at least as significant as that of China's or India's one –billion-plus populations, if not greater (UNESCO, UN Women, ITU, and Microsoft, 2013). Ann Mei Chang in ITU and UNESCO (2013) stated that access for women is often correlated with the development of a country, implying that the gender gap will fall away as an economy matures. Furthermore, World Bank (ITU and UNESCO, 2013) has estimated that a 10% increase in broadband adoption will result in a 1.38% increase in economic growth which is also intuitively obvious, as access to the Internet can enable women to increase their productivity, access new markets, improve their education, find better jobs, and contribute to the innovation economy. Thus, the main questions of study are whether women-men internet access can influence economic development in Indonesia? and Try to investigate the relationship between socioeconomic variables and digital divide in Indonesia in 2015. The paper about the difference in internet access of women and men that indicate the digital divide in Indonesia, and to analyze the digital divide in Indonesia in 2015 based on the relationship between digital divide and socioeconomic variables.

## Data and Methodologies

The analysis includes all provinces in Indonesia in 2015. Internet penetration data was calculated from National Socio Economic Survey (Susenas) data been collected yearly by National Statistics of Indonesia (BPS Statistics Indonesia). Meanwhile, ICT Development Index and its sub-index, percentage of poor people, Human Development Index (HDI), and Gross Regional Domestic Product (GRDP) per capita were taken from Statistics Indonesia website. In order to investigate the influence of internet penetration on economic development, we obtained linear regression model. This study also uses the canonical correlation to analyse the relationship between socioeconomic variables and digital divide. Canonical correlation is a method that enables the assessment of the relationship between two sets of multiple variables (Hair, [et.al.](#), 2010). In applying canonical analysis, it is helpful to think of one set of variables as independent and the other set as dependent, however, it does not imply that they share a causal relationship (Hair, [et.al.](#), 2010).

## Findings

Plot does not show a high relationship between Gini ratio and internet access (in women and men cases), while plot shows a positive relationship between GRDP per capita and internet access (in urban and rural cases). This study used regression models to investigate the differences between men and women internet

access on GRDP per capita. The results show that internet access by women influence GRDP per capita significantly, if internet access by women increase 10%, GRDP per capita will increase by 0.51%. Internet access by men also influence GRDP per capita significantly, if internet access by men increase 10%, GRDP per capita will increase by 0.43%. In addition, this study also used canonical correlation analysis, the canonical correlation shows that the relationship between socioeconomic variables and digital divide was statistically significant.