

# Demographic and Socioeconomic Determinants Affecting Uses of the Internet in Indonesia

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## Abstract

The digital divide in Indonesia is rather big. This study aims to investigate the demographic and socioeconomic determinants affecting the quantity of uses of the Internet in Indonesia. The data used are based on the National Socioeconomic Survey in 2021. The object of the analysis is population aged 15 years and above possessing at least one digital gadget. The dependent variable is the purpose of the Internet use. The independent variables included gender, age, number of household members, marital status, education, employment status, place of dwelling, island of residence, and number of types of digital gadgets owned. A binary logistic regression model was employed in the analysis. The results of the study indicate that a higher quantity of uses of the Internet is associated with a female sex, younger age, smaller number of household members, unmarried status, higher education, dwelling in urban areas, living in Java Island, and owning more than one type of digital gadgets. These findings suggest the need to improve access to the Internet among men, older people, ever-married individuals, rural dwellers, and Outer Java inhabitants, to promote family planning, to improve education and accessibility of more types of digital gadgets in order to bridge the digital divide and to boost the global competitiveness index 4.0 in Indonesia.

## Keywords

Digital divide, uses of the Internet, Demographic and Socioeconomic factors, Indonesia

**JEL codes:** J11, C01, G38

## 1. Introduction

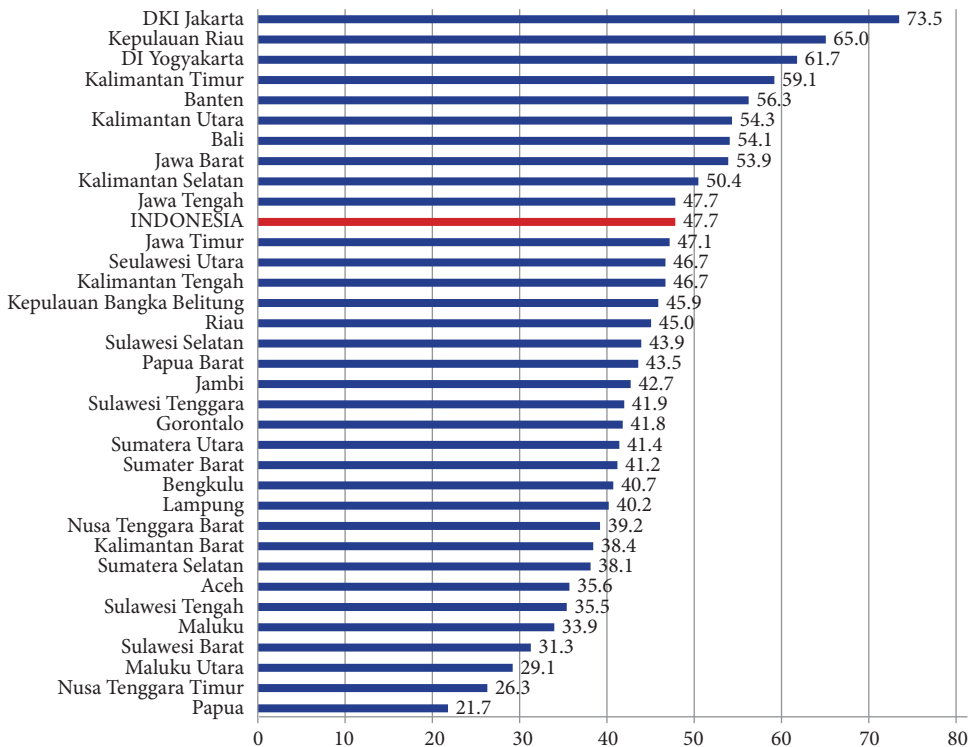
Indonesia's global competitiveness is relatively low compared to the global competitiveness of Malaysia and Singapore. In 2018, in terms of the global competitiveness index 4.0, Indonesia, Malaysia, and Singapore ranked 45<sup>th</sup>, 25<sup>th</sup>, and 2<sup>nd</sup> respectively, out of 140 countries

in the world (World Economic Forum 2018). The third pillar of the 12 pillars of this index is the adoption of information and communication technology (ICT). Indonesia ranked 50<sup>th</sup> out of 140 countries in terms of ICT adoption. One of the indicators that form the ICT adoption is the proportion of population using the Internet; Indonesia ranked 110<sup>th</sup> out of 140 countries in terms of the proportion of the Internet users.

Low global competitiveness is one of the issues in the National Midterm Development Plan (*Rencana Pembangunan Jangka Menengah Nasional/RPJM*N) for 2020–2024 (Badan Pusat Statistik 2018). Therefore, the digital transformation becomes one of the mainstreaming issues in the RJP MN 2020-2024 as an effort to optimize the role of digital technology in improving the nation’s competitiveness. In addition, the proportion of the Internet users becomes an indicator of the Sustainable development goal 9, that is to develop a strong infrastructure, enhance inclusive and sustainable industry, and promote innovations (Billari et al. 2020).

ICT revolution has made a remarkable impact on lives and daily activities around the world (Billari et al. 2020). Some studies show that in low-income countries, the utilization of ICT had a positive impact on the market performance (Aker & Fafchamps 2014), household income (Blauw & Franses 2016), education (Aker et al. 2012), political participation (Manacorda & Tesei 2020), health services (Zurovac et al. 2011), consumption and economic disruption (Murendo & Wollni 2016), food security (Munyegera & Matsumoto 2016), reproductive health behavior (Samosir et al. 2020), and financial security and savings (Suri & Jack 2016).

However, there is an inequality in access to and use of ICT, and it is significant in many developing countries, including Indonesia. As Figure 1 shows, proportion of the Internet



**Figure 1.** Proportion of the Internet users by province: Indonesia. *Source:* Indonesia - Socio-Economic Monitoring Survey (Survei Sosial Ekonomi Nasional (SUSENAS)), 2019, own calculation

users in Indonesia, based on the results of the 2019 National Socioeconomic Survey (*Survei Sosial Ekonomi Nasional/SUSENAS*) in 2019 was less than a half and varied greatly from the lowest of 22% in Papua to the highest of 74% in the capital, DKI Jakarta (Badan Pusat Statistik 2023).

The digital divide is defined as an inequality in access to and use of ICT technology, in particular the Internet (Castells 2002). The Internet usage can be classified in form of the frequency and purpose of use (Scheerder et al. 2017). In terms of uses of the Internet, the Internet can be used for economic, cultural, social, and private purposes. The economic purposes can include work, education, property, income, and financial purposes. The cultural purposes can consist of ownership and identity purposes. The social purposes can include informal network, citizenship formal network, e-government network, and political purposes. The private purposes can be those for health, welfare, self-actualization, and personal purposes.

The determinants affecting the use of the Internet have been proposed. These include socio-demographic, social, and economic factors (Scheerder et al. 2017). Socio-demographic factors consist of gender, age, marital status, and place of residence. Socioeconomic factors include education, employment status, access to ICT, social status, and household economic status.

There are studies on the determinants of the Internet use (Al-Hammadany & Heshmati 2011; Lera-López et al. 2011; Duplaga 2017; Nishijima et al. 2017; Scheerder et al. 2017; Ghebregiorgis & Mihreteab 2018; Alderete 2019; Ali et al. 2020; Huxhold et al. 2020; Michels et al. 2020; Sumaedi & Sumardjo 2020; Yesuf 2021; Martínez-Domínguez & Fierros-González 2022; Rajagukguk 2022). The results of the study in Australia show that access to ICT, that is individual access to at least one ICT gadget, including personal computer, cellphone, tablet, and the Internet, influenced the use of the Internet for health care among those with a functional disorder (Ali et al. 2020). The results of this study also suggest that gender, education, income, and place of residence affected the use of the Internet for health care among those with a functional disorder.

A study in Mexico also indicates that the use of the Internet was influenced by education, income, socioeconomic status, access to ICT, and place of residence (Martínez-Domínguez & Fierros-González 2022). Meanwhile, a study in Iraq shows that gender, age, education, and employment status had an effect on the use of the Internet (Al-Hammadany & Heshmati 2011). Further, a study in Spain indicates that the use of the Internet was mainly influenced by education, age, employment status, place of residence, and income (Lera-López et al. 2011). Furthermore, the results of a study in Eritrea show that gender, age, and education were the important determinants of the use of the Internet (Ghebregiorgis & Mihreteab 2018).

A study in Poland also shows that predictors of the use of the Internet encompassed place of residence, education, marital status, employment status, income, and the use of cellphones (Duplaga 2017). In addition, a study in Argentina indicates that drivers of the use of the Internet among poor people included access to ICT, income, education, and place of residence (Alderete 2019). Meanwhile, a study in Ethiopia shows that the use of the Internet was associated with access to ICT, young age, living in urban areas, having higher education, and having a job (Yesuf 2021).

The results of a study in Germany reveals that the probability of using the internet was higher among males, young people, people with higher education, and higher income groups (Huxhold et al. 2020). Another study in Germany suggests an important role of age in the use of the Internet among farmers (Michels et al. 2020). Further, the results of a study

in Brazil show that a limited education was an important factor of the digital divide (Nishijima et al. 2017).

The impact of demographic and socioeconomic factors on the use of the Internet at the macro-level has been identified as well. A study using country as the analysis object shows that demographic dividend type and income were associated with higher percentage of the Internet users (Rajagukguk 2022).

However, studies on the determinants of uses of the Internet in Indonesia is limited. It might be due to the limited availability of the national scale data on ICT access and use. Information on access to ICT and its use was first collected by the Indonesia Demographic and Health Survey in 2017, but it was confined to only women aged 15-49 years and ever-married men aged 15-54 years (National Population... 2017). The Statistics Indonesia gathered a more detailed information on ICT access and the use of the Internet in the SUSENAS in 2021 (Statistics Indonesia 2021). Data based on SUSENAS in 2021 were a rich data source on the Internet access and use for economic, cultural, social, and private purposes.

Therefore, the general objective of this study is to analyze the association between demographic, social, and economic factors and uses of the Internet in Indonesia. The specific objectives are as follows (i) to study patterns and differentials in uses of the Internet by demographic, social, and economic factor in Indonesia and (ii) to examine the effects of demographic, social, and economic factors on uses of the Internet in Indonesia. We believe that the results of this study can contribute to better understanding of the factors affecting the digital divide and offer recommendations to formulate a policy aimed at bridging the digital divide in Indonesia.

## 2. Methods

This study used the results of SUSENAS 2021 as a data source. SUSENAS 2021 was carried out by the Statistics Indonesia in March 2021 and covered all provinces of Indonesia (Hosmer & Lemeshow 2000). SUSENAS 2021 was conducted to meet the need for social and economic development data at the district, province, and national levels, including data on the attainment of the Sustainable development goal. The sample size equaled to 340,032 households. SUSENAS 2021 data were cross-sectional data. The data the analysis in this paper is based on are deposited at “<http://repository.uki.ac.id/13051/1/SusenasMaret.zip>.”

The object of the analysis of this study was population aged 15 years and above. The unweighted sample size was 500,099 and the weighted number of population aged 15 years and above equaled to 122,419,946. This group of population was selected because an employment status was among the independent variables. The Statistics Indonesia used the age of 15 years and above as a working age.

The dependent variable of this study was the purpose of the use of the Internet or uses of the Internet (PIU). There were 10 uses of the Internet collected in SUSENAS 2021. These included as follows (i) to get information/news, (ii) to get information for learning processes, (iii) to send/receive e-mails, (iv) for social media/networking, (v) for purchase of goods/services, (vi) for sale of goods/services, (vii) for entertainment, (viii) for financial facility (e-banking), (ix) to obtain information about goods/services, and (x) others. PIU was divided into the following two groups, that is 1-3 uses (PIU = 0) and 4 uses and more (PIU = 1).

Meanwhile, the independent variables included gender (GENDER), age (AGE), number of household members (NHH), marital status (MARITAL), education (EDUCATION), employment status (WORK), place of dwelling (URBAN), island of residence (ISLAND), and number of types of digital gadgets owned (NGADGET). GENDER was grouped into males and females. AGE was divided into 15-24, 25-54, and 55+. NHH was classified into 1-4 and 5 or more. MARITAL was grouped into never married and ever married (currently married, divorced, and widowed). EDUCATION was divided into lack of school education/incomplete primary school, complete primary school, complete junior secondary school, complete senior secondary school, and complete university. WORK was classified into working and not working. URBAN was grouped into urban and rural areas. ISLAND was classified into Sumatera, Java, Bali and Nusa Tenggara, Kalimantan, Sulawesi, and Maluku and Papua. NGADGET was divided into having one type of digital gadgets and having two and more types of digital gadgets.

Data in this study were analyzed using univariate, bivariate, and multivariate analyses. An univariate analysis was carried out to evaluate the percentage distribution of the respondents of the study by demographic and socioeconomic background characteristic. A bivariate analysis was used to examine the percentage of uses of the Internet by demographic and socioeconomic background characteristic. A multivariate analysis was undertaken to investigate the association between demographic and socioeconomic factors and uses of the Internet employing a binary logistic regression. The model was as follows.

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 \text{GENDER} + \beta_2 \text{AGE} + \beta_3 \text{NHH} + \beta_4 \text{MARITAL} + \\ + \beta_5 \text{EDUCATION} + \beta_6 \text{WORK} + \beta_7 \text{URBAN} + \beta_8 \text{ISLAND} + \beta_9 \text{NGADGET} + \varepsilon$$

$p$  is the probability of using the internet for four or more purposes ( $Y = 1$ ).  $\beta_0$  is the model intercept.  $\beta_k$  is the regression coefficient for the  $k$ -th independent variable,  $k = 1, 2, \dots, 8$ .  $\varepsilon$  is the error term.

A multi-collinearity diagnostic test using the correlation coefficient was carried out for all independent variables. In addition, to measure the overall goodness-of-fit test, Hosmer-Lemeshow test and chi-square ( $\chi^2$ ) test were implemented as well (Hosmer & Lemeshow 2000). Further, a scalar measure of goodness-of-fit test was carried out employing the Nagelkerke determination coefficient ( $R^2$ ).

### 3. Results

The results of the univariate analysis are presented in Table 1-3. As Table 1 shows, the majority of the respondents used the Internet for 1-3 purposes. In terms of the demographic background characteristics, the majority of the respondents were males, aged 25-54 years, had 1-4 household members, and were currently or ever married. In terms of the socioeconomic background characteristics, the majority of the respondents had complete senior high school education, resided in urban areas, lived in Java Island, worked, and had one type of digital gadgets.

Table 2 presents the percentage distribution of uses of the Internet. As it is seen, the majority of the respondents used the Internet for three purposes, followed by two and four purposes. In addition, by purpose of use, the percentage was highest for social media/networking, followed by getting information/news and entertainment (Table 3).

**Table 1.** Percentage distribution of the digital technology gadget owners aged 15 years and above by background characteristic

<b>Background characteristics</b>	<b>Number of observations</b>	<b>Percentage</b>
<b>Uses of the Internet</b>		
1-3	78,487,754	64.1
4-10	43,932,193	35.9
<b>Gender</b>		
Male	65,588,165	53.6
Female	56,831,781	46.4
<b>Age (years)</b>		
15-24	39,045,082	31.9
25-54	75,609,024	61.8
55+	7,765,840	6.3
<b>Number of household members</b>		
1-4	77,450,703	63.3
5-10	44,969,243	36.7
<b>Marital status</b>		
Never married	43,916,293	35.9
Currently/ever married	78,503,653	64.1
<b>Education</b>		
No schooling/incomplete primary school	3,459,375	2.8
Complete primary school	18,919,342	15.5
Complete junior secondary school	32,386,808	26.5
Complete senior secondary school	49,206,405	40.2
Complete university	18,448,016	15.1
<b>Place of residence</b>		
Urban	81,894,942	66.9
Rural	40,525,005	33.1
<b>Island of residence</b>		
Sumatera	24,946,355	20.4
Java	73,611,191	60.1
Bali and Nusa Tenggara	5,878,304	4.8
Kalimantan	7,606,755	6.2
Sulawesi	8,172,530	6.7
Maluku and Papua	2,204,812	1.8
<b>Employment status</b>		
Working	70,120,232	57.3
Not working	52,299,715	42.7
<b>Types of digital gadgets owned</b>		
One	96,293,884	78.7
Two or more	26,126,062	21.3
<b>Total</b>	<b>122,419,946</b>	<b>100.0</b>

Source: SUSENAS 2021.

**Table 2.** Unweighted and weighted uses of the Internet

<b>Uses of the Internet</b>	<b>Unweighted number of observations</b>	<b>Percentage</b>	<b>Weighted number of observations</b>	<b>Percentage</b>
1	57,385	11.5	14,853,561	12.1
2	118,964	23.8	28,470,190	23.3
3	154,327	30.9	35,164,003	28.7
4	83,727	16.7	20,053,654	16.4
5	42,317	8.5	11,112,104	9.1
6	22,363	4.5	6,324,876	5.2
7	12,545	2.5	3,778,703	3.1
8	6,114	1.2	1,926,702	1.6
9	1,927	0.4	612,955	0.5
10	430	0.1	123,199	0.1
<b>Total</b>	<b>500,099</b>	<b>100.0</b>	<b>122,419,946</b>	<b>100.0</b>

Source: SUSENAS 2021.

**Table 3.** Percentage of the respondents using the Internet for a certain purpose, by number of purposes

<b>No.</b>	<b>Number of purposes of the Internet use</b>	<b>Percentage</b>
1	Getting information/news	74.6
2	Getting information for learning processes	23.7
3	Sending/receiving e-mails	15.5
4	Social media/networking	93.2
5	Purchase of goods/services	19.8
6	Sale of goods/services	6.6
7	Entertainment	62.4
8	Financial facility (e-banking)	9.8
9	Obtaining information about goods/services	15.9
10	Others	5.0

Source: SUSENAS 2021.

The results of the bivariate analysis are outlined in Table 4. In terms of the demographic background characteristics, the percentage of the gadget owners aged 15 years and above who used the Internet for four and more purposes was higher among females, those aged 15-24 years, never married, and having 1-4 household members. In terms of the socioeco-

nomic background characteristics, the percentage of the gadget owners aged 15 years and above who used the Internet for four and more purposes was higher among those with complete university education, resided in urban areas, lived in Bali and Nusa Tenggara Island, unemployed, and having two or more types of digital gadgets.

**Table 4.** Percentage distribution of uses of the Internet by the digital technology gadget owners aged 15 years and above by background characteristic

Background characteristics	Uses of the Internet		Total (%)
	1-3 (%)	4-10 (%)	
<b>Gender</b>			
Male	66.0	34.0	100.0
Female	61.9	38.1	100.0
<b>Age (years)</b>			
15-24	56.3	43.7	100.0
25-54	66.9	33.1	100.0
55+	76.8	23.2	100.0
<b>Number of household members</b>			
1-4	63.3	36.7	100.0
5-10	65.5	34.5	100.0
<b>Marital status</b>			
Never married	55.4	44.6	100.0
Currently/ever married	69.0	31.0	100.0
<b>Education</b>			
Lack of school education/incomplete primary school	84.6	15.4	100.0
Complete primary school	80.0	20.0	100.0
Complete junior secondary school	67.6	32.4	100.0
Complete senior secondary school	62.8	37.2	100.0
Complete university	41.2	58.8	100.0
<b>Place of residence</b>			
Urban	59.4	40.6	100.0
Rural	73.6	26.4	100.0
<b>Island of residence</b>			
Sumatera	66.3	33.7	100.0
Java	63.1	36.9	100.0
Bali and Nusa Tenggara	62.3	37.7	100.0
Kalimantan	63.4	36.6	100.0
Sulawesi	67.3	32.7	100.0
Maluku and Papua	69.4	30.6	100.0
<b>Employment status</b>			
Working	64.8	35.2	100.0
Not working	63.2	36.8	100.0
<b>Types of digital gadgets owned</b>			
One	72.9	27.1	100.0
Two or more	31.6	68.4	100.0
<b>Total</b>	64.1	35.9	100.0

Source: SUSENAS 2021.



Table 5 presents the multivariate analysis results. It can be seen that all demographic and socioeconomic factors in the model had statistically significant effects on uses of the Internet except for employment status. The results of the multi-collinearity diagnostic test using the correlation coefficient show that none of the bivariate correlation was greater than 0.7, meaning there was no multi-collinearity between independent variables in the model (Hair et al. 2010). The results of the overall goodness-of-fit test show that the model fits at less than 0.001 significance level. The Nagelkerke determination coefficient was 0.201, meaning that 20.1% of the variation in the use of the Internet was explained by the variables in the model.

Gender was associated with uses of the Internet. After controlling for other factors, the male gadget owners aged 15 years and above were 0.82 times less likely to use the Internet for four and more purposes than their female peers.

Age was negatively associated with uses of the Internet. Other things being equal, the older a gadget owner aged 15 years and above, the lower the probability of using the Internet for four and more purposes. The probability of using the Internet for four and more purposes was 2.47 and 1.71 times higher among those aged 15-24 and 25-54, respectively, compared to those aged 55 and above.

Marital status influenced uses of the Internet. *Ceteris paribus*, never married gadget owners aged 15 years and above were 1.35 times more likely to use the Internet for four and more purposes than their ever-married peers.

Number of household members was negatively related to uses of the Internet. After controlling for other factors, the gadget owners aged 15 years and above who came from households with 1-4 members were 1.18 times more likely to use the Internet for four and more purposes than their peers who came from households with five and more members.

Education was the second strongest factor affecting uses of the Internet. It was positively associated with uses of the Internet. Other things being equal, the higher the education level of the gadget owners aged 15 years and above, the higher the probability of using the Internet for four and more purposes. The probability of using the Internet for four and more purposes was 1.29, 1.86, 2.10, and 3.56 times higher among the gadget owners aged 15 years and above with complete primary school, complete junior secondary school, complete senior secondary school, and complete university, respectively, compared to their peers without education or with incomplete primary school.

Place of residence was the third strongest factor affecting uses of the Internet. *Ceteris paribus*, the urban gadget owners aged 15 years and above were 1.60 times more likely to use the Internet for four and more purposes than their peers residing in rural areas.

Island of residence was an important factor of uses of the Internet. After controlling for other factors, the gadget owners aged 15 years and above living in Sumatera Island, Java Island, Bali and Nusa Tenggara Island, Kalimantan Island, and Sulawesi Island were 0.54, 1.77, 1.66, 1.70, and 1.34 times more likely to use the Internet for four and more purposes than those living in Maluku and Papua Island

Number of types of digital gadgets owned was the strongest factor that was positively associated with uses of the Internet. Other things being equal, the higher the number of types of digital gadgets owned, the higher the probability of using the Internet for four and more purposes. The probability of using the Internet for four and more purposes was 3.71 times higher among the gadget owners aged 15 years and above who had two and more types of digital gadgets than those possessing one type of digital gadgets.

**Table 5.** Odds ratio of the binary logistic regression of the determinants of uses of the Internet

<b>Covariates</b>	<b>Odds ratio [95% CI]</b>	<b>p-value</b>
<b>Gender (ref: Female)</b>		
Male	0.817 [0.805–0.828]	< 0.001
<b>Age (years) (ref: 55+)</b>		
15-24	2.466 [2.378–2.558]	< 0.001
25-54	1.713 [1.660–1.767]	< 0.001
<b>Number of household members (ref: 5-10)</b>		
1-4	1.179 [1.164–1.195]	< 0.001
<b>Marital status (ref: Ever married)</b>		
Never married	1.348 [1.323–1.375]	< 0.001
<b>Education (ref: lack of school education/incomplete primary school)</b>		
Complete primary school	1.289 [1.229–1.351]	< 0.001
Complete junior secondary school	1.857 [1.774–1.943]	< 0.001
Complete senior secondary school	2.104 [2.012–2.200]	< 0.001
Complete university	3.578 [3.414–3.749]	< 0.001
<b>Place of residence (ref: Rural)</b>		
Urban	1.597 [1.575–1.618]	< 0.001
<b>Island of residence (ref: Maluku and Papua)</b>		
Sumatera	1.539 [1.495–1.585]	< 0.001
Java	1.766 [1.715–1.819]	< 0.001
Bali and Nusa Tenggara	1.664 [1.606–1.725]	< 0.001
Kalimantan	1.701 [1.645–1.758]	< 0.001
Sulawesi	1.343 [1.300–1.386]	< 0.001
<b>Employment status (ref: Not working)</b>		
Working	0.989 [0.974–1.005]	0.167
<b>Types of digital gadgets owned (ref: One)</b>		
Two or more	3.714 [3.655–3.774]	< 0.001
<b>Constant</b>	0.042	< 0.001

Source: authors' calculations based on SUSENAS 2021 data.

## 4. Discussion

The results of this study confirm the findings from the previous studies that demographic and socioeconomic factors influence uses of the Internet.

The results of the above studies show that the use of the Internet for four and more purposes was higher among younger than older people. It may be due to the fact that younger people are faster to comprehend a more sophisticated technology and have better skills to navigate the Internet than older people (Bacchi 2021).

Females were more likely to use the Internet for more purposes. It is not consistent with the results of the previous study in Germany where males were more likely to use the Internet than females. It may be associated with the fact that the Indonesian women are more likely to have free time to engage in social media/networking or to use the Internet for purchase or sale or to obtain information about goods/services.

Currently or ever married respondents were less likely to use the Internet for more purposes than the never married ones. It can be because the currently or ever married ones had a more limited engagement in activities outside the house so that they did not feel the need to use the Internet.

More educated people were more likely to use the Internet for more purposes. It might be because more educated people have a better access to various information and wider social networks and a better digital literacy (Bacchi 2021).

Urban dwellers and those living in the development center region, Java Island, were more likely to use the Internet for more purposes than those residing in rural areas and in Maluku and Papua. It might be because the ICT facilities and infrastructure are more available in these better developed regions of Indonesia (Ariyanti 2013).

The internet use for more purposes was higher among those who possessed more ICT gadgets than those with less ICT gadgets. Maybe, because the availability of more types of digital gadgets could encourage them to engage in more digital activities, such as online office meetings, reading e-books, writing papers, watching e-movies, playing games, and having conversations.

## 5. Conclusion

The results of the study show that the digital divide is significant in Indonesia. The percentage of the gadget owners aged 15 years and above who use the Internet for four and more purposes was higher among females, those aged 15-24 years, never married, having 1-4 household members, with complete university education, residing in urban areas, living in Bali and Nusa Tenggara Island, unemployed, and possessing two or more types of digital gadgets.

The statistically significant demographic factors that are associated with uses of the Internet in Indonesia included gender, age, marital status, and number of household members. The socioeconomic determinants affecting uses of the Internet in Indonesia included education, place of residence, island of dwelling, and number of types of digital gadgets owned. The probability of using the Internet for four and more purposes is higher among the gadget owners aged 15 years and above who are females, aged 15-24 years, never married, from households with smaller number of members, with higher education, residing in urban areas, living in Java Island, and possessing two and more types of digital gadgets.

The Government of Indonesia is committed to bridge the digital divide and to boost the global competitiveness index 4.0 in Indonesia. The findings of this study indicate that in order to achieve these goals, Indonesia needs to improve access to the Internet for males, older people, currently or ever married individuals, rural dwellers, and Outer Java inhabitants, to promote family planning, to improve education, and accessibility of more types of digital gadgets. These can be done by creating digital devices that are user-friendly and designed for the groups they are intended to serve. In addition, the Government of Indonesia should develop infrastructure, inclusivity, institutions, and improve digital literacy throughout Indonesia.

A limitation of this study is that the dependent variable used was the number of the Internet use purposes rather than specifically the purpose of the Internet use, since the focus of this study was the quantity uses of the Internet. In addition, the independent variables have not included some other important factors that can affect the quantity of uses of the Internet, such as income which is not available in SUSENAS 2021. However, this limitation should not significantly influence the results, and this study can provide valuable contribution to research on the Internet use behaviors. In addition, this limitation implies that income should be included in further study on the digital divide determinants.

## **CONFLICT OF INTEREST**

The authors have no conflict of interest associated with the material presented in this paper.

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## **AUTHOR CONTRIBUTION**

Conceptualization: WR. Data curation: WR. Formal analysis: WR. Funding acquisition: AH. Methodology: WR. Project administration: AH and MP, Visualization: MP. Writing – original draft: WR. Writing – review - & editing: AH and MP.

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