



DETERMINANTS OF USER SATISFACTION IN INTERNET USE AMONG SOCIO-ECONOMICALLY ADVANTAGED AND DISADVANTAGED GROUPS: THE ROLE OF DIGITAL ACCESS AND GOVERNMENT POLICY



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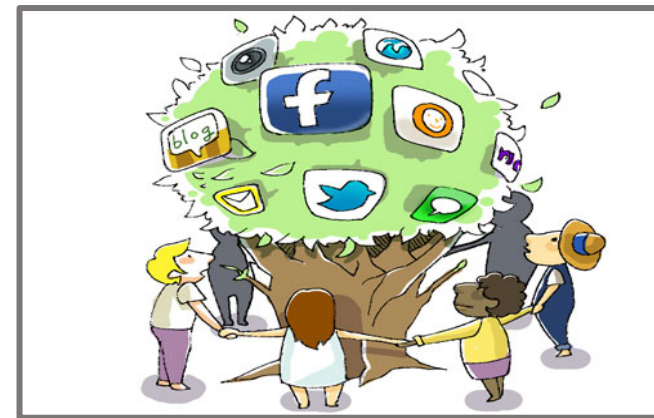
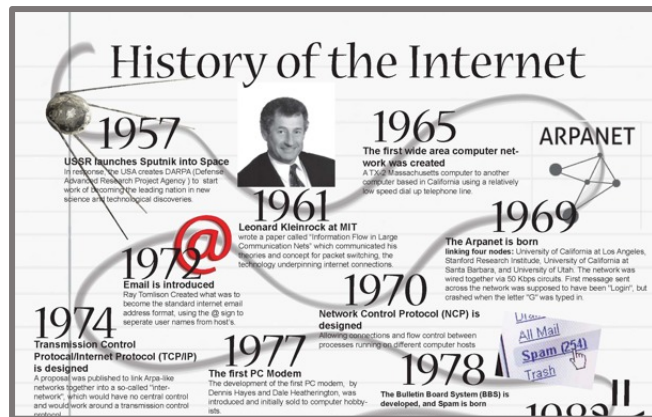
Discussion & Implication♪



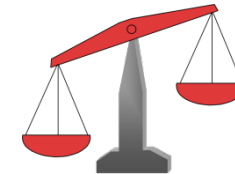
Research Motivation & Objectives



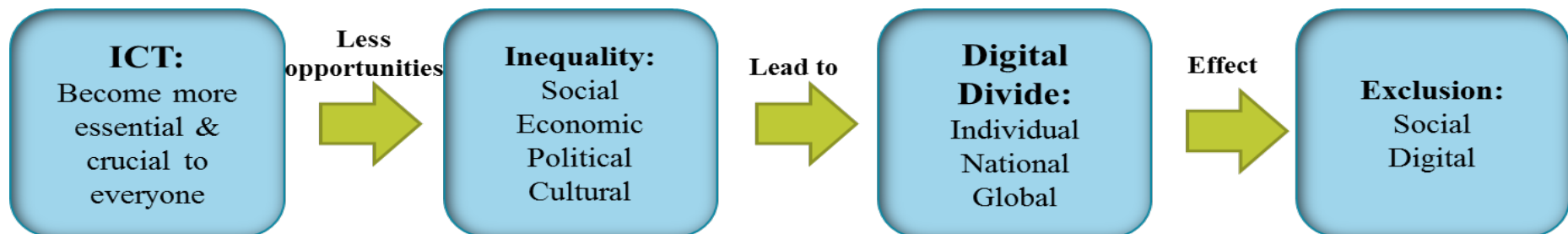
◆ Digital Inequality



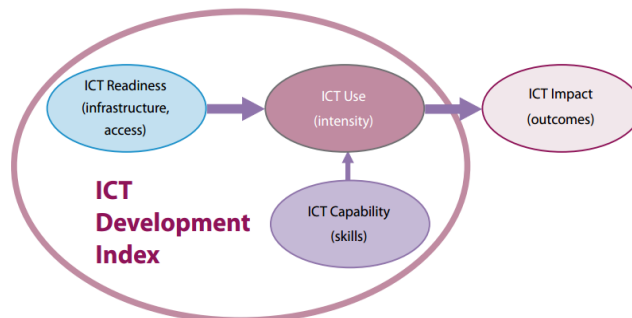
Reducing Digital Inequality (Digital Divide)♪



- Digital divide is "the gap between individuals, households, businesses, and geographic areas at different socio-economic levels with regard both to their opportunities to access ICTs and to their use of the Internet for a wide variety of activities" (OECD 2001).
- The digital divide is a critical, complex, and dynamic global phenomenon (Van Dijk and Hacker, 2003; Hsieh et al., 2008)
- Digital divide takes place at individual, national, and global level♪



The key to reduce digital divide is having “access” to ICT
(Van Dijk, 2006; Chen and Wellman, 2003).



Source: ITU (2013)♪

Secondary Data♪

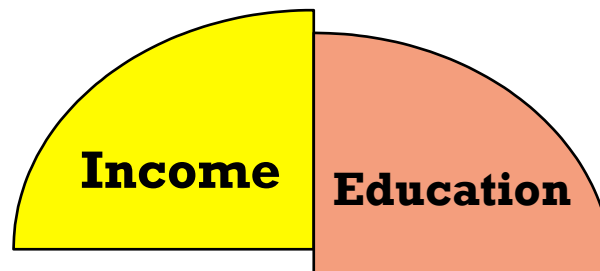


User perceptions and actual usage:
Technological Access
Social Access
Motivational Access
Skills Access

Primary Data♪

◆ Socio-Economically Disadvantaged Group (SED)

- **The SED is the most important group to focus on when studying digital divide because this group lacks financial resources, knowledge, and skills to use ICT (Aerschot & Rodousakis, 2008)**
- **The SED is identified using two variables: income and education (Jung et al. 2001; Lenhart 2002)**



- **Other dimensions such as ethnicity, geographical location, age, and gender also have impacts on use or nonuse of ICT (Lenhart 2002; Hoffman et al. 2000).**
- **The majority in the SED are females, older generations, residence of rural areas, and uneducated people (Verdegem & Verhoest, 2009).**

- Over the past two to three decades, many countries have initiated public agenda and policies to address digital inequality problem in an effort to improve the degree of national compatibility in ICT.
- The first stage of the government initiative focuses on ICT infrastructure development, and the second stage is to build a national-level ICT ecosystem.
- An ICT ecosystem refers to a total value chain in the ICT industry, which includes telecommunications networks, broadband Internet, software and content, and ICT products and services (Shin & Kweon, 2011).
- Government projects pertaining to national Internet infrastructure are underway in many countries, for example, Singapore's "Intelligent Island", Malaysia's "Multimedia Super Corridor", USA's "Global/National Information Infrastructure", Canada's "Information Highway", and South Korea's "IT839" projects (Shin & Kweon, 2011).
- Clearly, governments play a significant role in ICT development (Frieden, 2005; Shin & Kweon, 2011). They establish visions and strategies, invest in ICT infrastructure, encourage digital literacy, aggregate demands, foster facilities-based competition, provide incentives to encourage private investments, and promote universal services (Frieden, 2005).

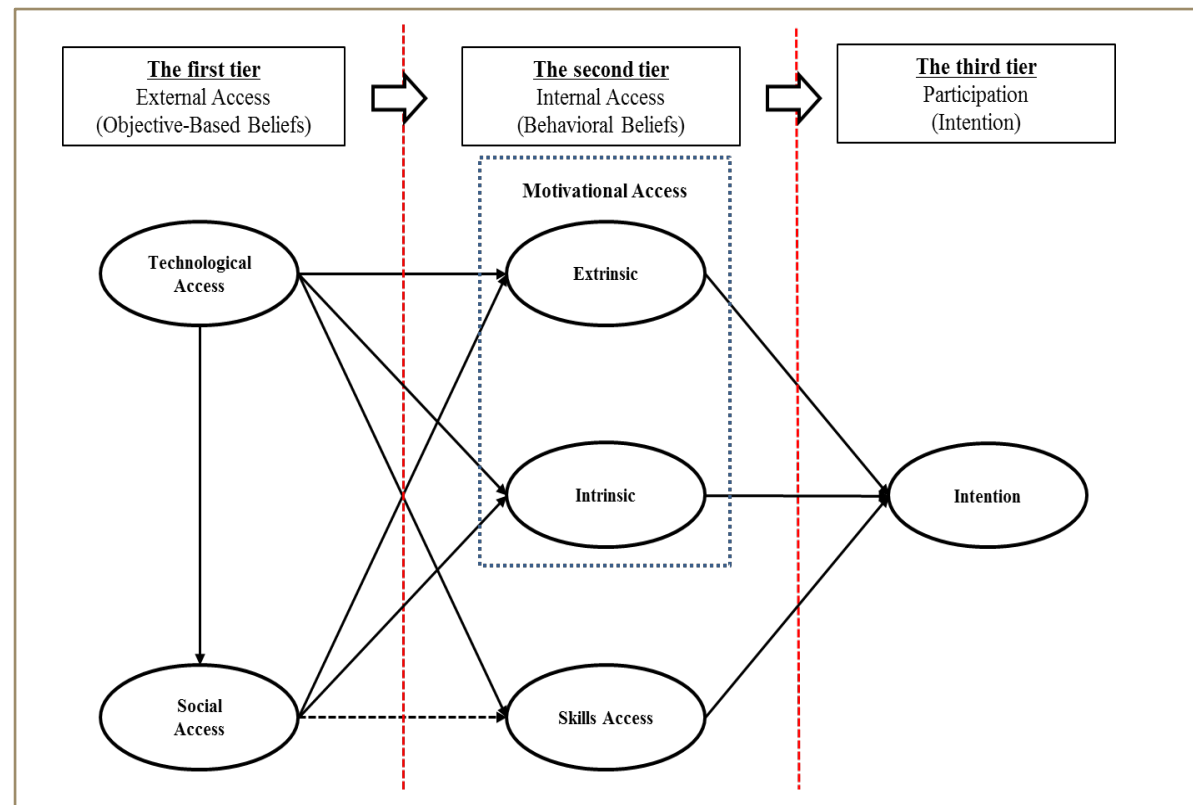
1. First, we verify the existence of digital divide in South Korea using the 2012 media panel data provided by the Korea Information Society Development Institute.
2. Second, we empirically test the role of government policy in affecting social and technology access using another set of survey data.
3. Third, we investigate the moderating effect of socio-economic status to understand its impact on citizens' satisfaction toward Internet use. ♪



Literature Review



◆ Research Framework (Chang et al., 2014)

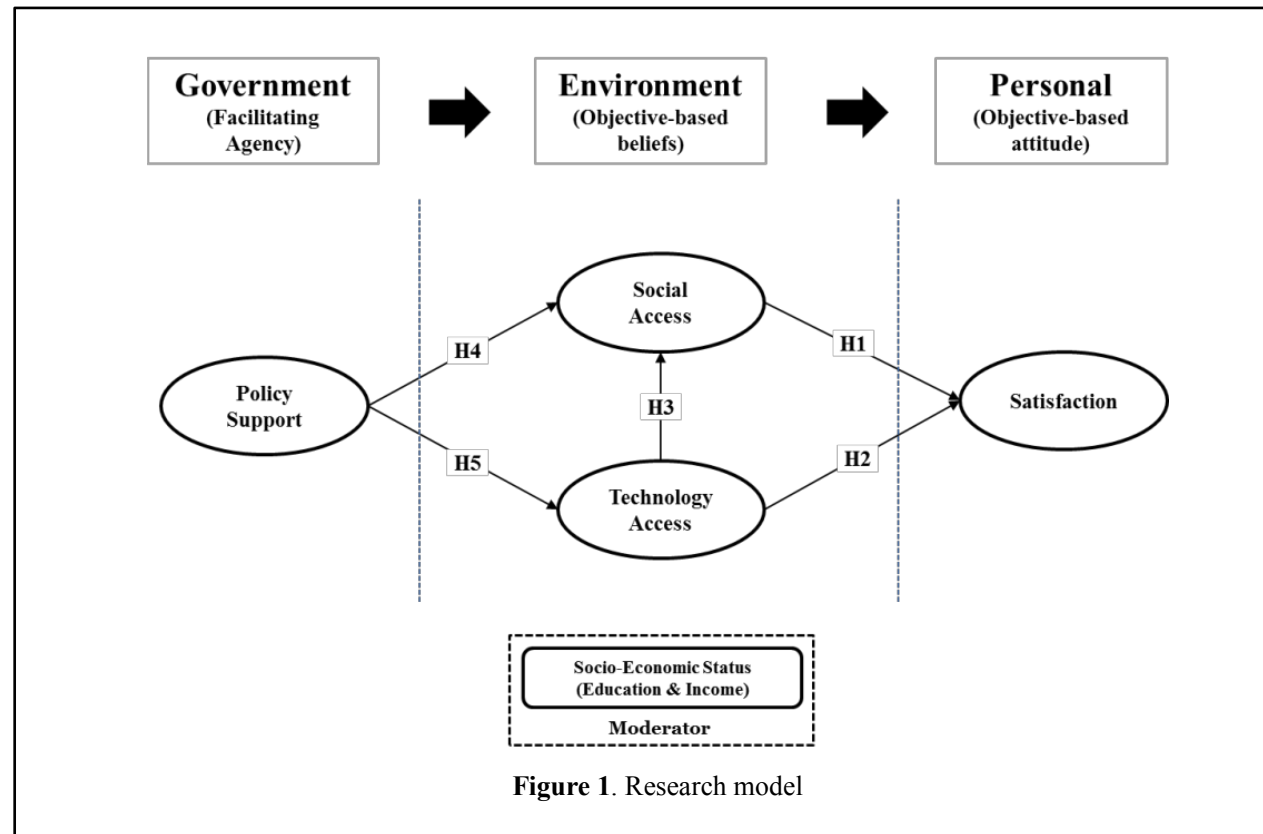


Previous research has identified four types of access: social, technological, skills, and motivational access (Van Dijk, 2006; Chang et al., 2014).

1. **Technological access** refers to “user perception toward the availability and accessibility of various ICT infrastructure.”
2. **Social access** is “user perception toward the extent of affordability and availability of Internet contents.”
3. **Skills access** is “user perception of his or her own ability and confidence to use computers and the Internet.”
4. **Motivational access** refers to “user perception of productivity and pleasure of using ICT.”

- Government policy support is a salient factor that facilitates a country's ICT capability and the people's adoption of ICT (Pick and Azari, 2008; Shin and Kweon, 2011).
- In fact, the first Internet technology also originated from government effort, i.e., the US ministry's defense project called "Advanced Research Projects Agency" (Marson, 1997). Since then, governments of different countries have rolled out different ICT projects to push forward their ICT industries (Shin & Kweon, 2011).
- In a study of 184 general users and non-users of ICT, Verdegem and Verhoest (2009) found that policy support is important to those who are at disadvantaged and reside at the bottom of the pyramid compared to those who are at advantaged position and come from higher-income group.
- As a matter of fact, governments are the facilitating agency who plays an intervention and leadership role in the diffusion of innovation (Frieden, 2005; Goh 1995; Shin & Kweon, 2011).
- In Singapore for example, it is well documented that the local government is a major driving force in the diffusion of ICT (Tan and Teo, 2000). The same goes with South Korea (Frieden, 2005; Shin & Kweon, 2011).
- Therefore, following these literature, we propose that government policy support has positive relationship with social and technology access. The more positive the citizens' perception toward the government's ICT policy support, the higher the level of accessibility they will see toward technology and social factors. ♪

◆ Proposed Research Model



H1: Social access will positively influence satisfaction.♪

H2: Technology access will positively influence satisfaction.♪

H3: Technology access will positively influence social access.♪

H4: Perceived policy support will positively influence social access.♪

H5: Perceived policy support will positively influence technology access.♪



Research Methodology



◆ Verifying the Presence of Digital Divide in Korea

- To verify that digital divide exists in South Korea, we conducted an ANOVA test on the data provided by the Korea Information Society Development Institute for a media panel study in 2012. We divided the sample (n=8382) into two groups: SEA and SED. ♪

Table 1. Descriptive statistics and ANOVA results of SED and SEA groups

ICT device and service usage		Sample Size	mean	Standard Deviation	Standard Error	F	p-value
Using mobile phones	SED	4907	1.15	.357	.005	504.541	.000*
	SEA	3475	1.01	.100	.002		
	Total	8382	1.09	.289	.003		
Internet search	SED	4907	1.55	.497	.007	1190.413	.000*
	SEA	3475	1.20	.400	.007		
	Total	8382	1.41	.491	.005		
Reading emails	SED	4907	1.59	.493	.007	1143.717	.000*
	SEA	3475	1.24	.425	.007		
	Total	8382	1.44	.497	.005		
Sending emails	SED	4907	1.61	.489	.007	1140.863	.000*
	SEA	3475	1.26	.437	.007		
	Total	8382	1.46	.499	.005		
Having email account	SED	4907	1.64	.479	.007	926.319	.000*
	SEA	3475	1.32	.468	.008		
	Total	8382	1.51	.500	.005		
Using Internet blog	SED	4907	1.96	.200	.003	45.900	.000*
	SEA	3475	1.92	.265	.004		
	Total	8382	1.94	.230	.003		
Using social network services	SED	4907	1.87	.337	.005	213.599	.000*
	SEA	3475	1.75	.435	.007		
	Total	8382	1.82	.385	.004		
Using cloud computing	SED	4907	1.98	.149	.002	51.944	.000*
	SEA	3475	1.95	.222	.004		
	Total	8382	1.97	.184	.002		
Being part of the Internet communities	SED	4907	1.85	.355	.005	206.654	.000*
	SEA	3475	1.73	.446	.008		
	Total	8382	1.80	.400	.004		

◆ Data Collection & Demographic Information

- A pilot test was conducted to confirm the reliability and validity of the measurement model.
- An online survey of general Internet users in South Korea was conducted with the assistance of a professional online panel company.
- Partial least squares (PLS) structural equation modeling technique (Smart PLS) was used to analyze the research model.♪

Table 2. Demographic characteristics of the SEA and SED groups

Characteristics		SEA: n=233 (%)	SED: n=319 (%)
Gender	male	57.1	45.5
	female	42.9	54.5
Age	20-29	8.6	34.5
	30-39	18.5	26.0
	40-49	34.3	21.6
	50-59	38.6	17.9
Education	Elementary school	0	1.0
	Middle school	0.9	10.2
	High School	15.9	60.3
	Undergraduate	68.3	25.1
	Graduate	15.0	3.4
Income (monthly) Korean Won	Less than 859,999	0	24.1
	860,000 – 1,789,999	0	25.4
	1,790,000 – 2,429,999	0	22.3
	2,430,000 – 2,959,999	0	21.9
	2,960,000 – 3,449,999	13.7	6.3
	3,450,000 – 3,959,999	14.2	0
	3,960,000 – 4,549,999	16.3	0
	4,550,000 – 5,239,999	21.0	0
	5,240,000 – 6,369,999	16.3	0
	More than 6,370,000	18.5	0

Table 3. Construct reliability and convergent validity

Construct	AVE		Composite Reliability		Mean (S.D.)	
	SEA	SED	SEA	SED	SEA	SED
Policy support (PS)	0.81	0.82	0.96	0.96	4.61(1.07)	4.34(1.18)
Social access (SA)	0.77	0.80	0.93	0.94	5.17(0.89)	5.17(1.01)
Satisfaction (SAT)	0.78	0.78	0.94	0.93	5.43(0.80)	5.37(0.88)
Technology Access (TA)	0.76	0.73	0.93	0.92	5.61(0.85)	5.57(0.90)

Note: S.D.: Standard Deviation, AVE: Average Variance Extracted

Table 4. Correlation matrix and average variance extracted

Construct	PS	SA	SAT	TA
	SEA			
Policy support (PS)	0.90			
Social access (SA)	0.25	0.88		
Satisfaction (SAT)	0.20	0.63	0.89	
Technology Access (TA)	0.24	0.62	0.67	0.87
-	SED			
Policy support (PS)	0.90			
Social access (SA)	0.33	0.89		
Satisfaction (SAT)	0.23	0.68	0.88	
Technology Access (TA)	0.24	0.61	0.69	0.86

Note: Diagonals represent the square root of the AVE while off diagonals represent the correlations.

Table 5. Loadings and cross-loadings

Item	PS		SA		SAT		TA	
	SEA	SED	SEA	SED	SEA	SED	SEA	SED
PS1	0.88	0.90	0.27	0.31	0.20	0.23	0.22	0.25
PS2	0.92	0.92	0.19	0.33	0.15	0.25	0.18	0.25
PS3	0.90	0.91	0.15	0.25	0.15	0.18	0.17	0.15
PS4	0.91	0.91	0.22	0.24	0.19	0.17	0.23	0.20
PS5	0.90	0.88	0.25	0.31	0.20	0.21	0.25	0.22
SA1	0.23	0.30	0.85	0.87	0.53	0.60	0.52	0.54
SA2	0.19	0.23	0.88	0.91	0.58	0.65	0.52	0.56
SA3	0.22	0.30	0.89	0.90	0.52	0.58	0.51	0.49
SA4	0.23	0.33	0.88	0.89	0.56	0.59	0.60	0.58
SAT1	0.14	0.09	0.55	0.52	0.90	0.85	0.64	0.60
SAT2	0.15	0.22	0.54	0.62	0.86	0.86	0.51	0.54
SAT4	0.24	0.24	0.52	0.63	0.87	0.90	0.61	0.65
SAT5	0.18	0.27	0.61	0.62	0.92	0.92	0.61	0.62
TA1	0.23	0.26	0.54	0.60	0.62	0.66	0.87	0.89
TA2	0.24	0.16	0.51	0.46	0.60	0.59	0.89	0.88
TA3	0.19	0.20	0.54	0.51	0.52	0.54	0.85	0.81
TA4	0.17	0.19	0.55	0.51	0.60	0.55	0.87	0.84



Results



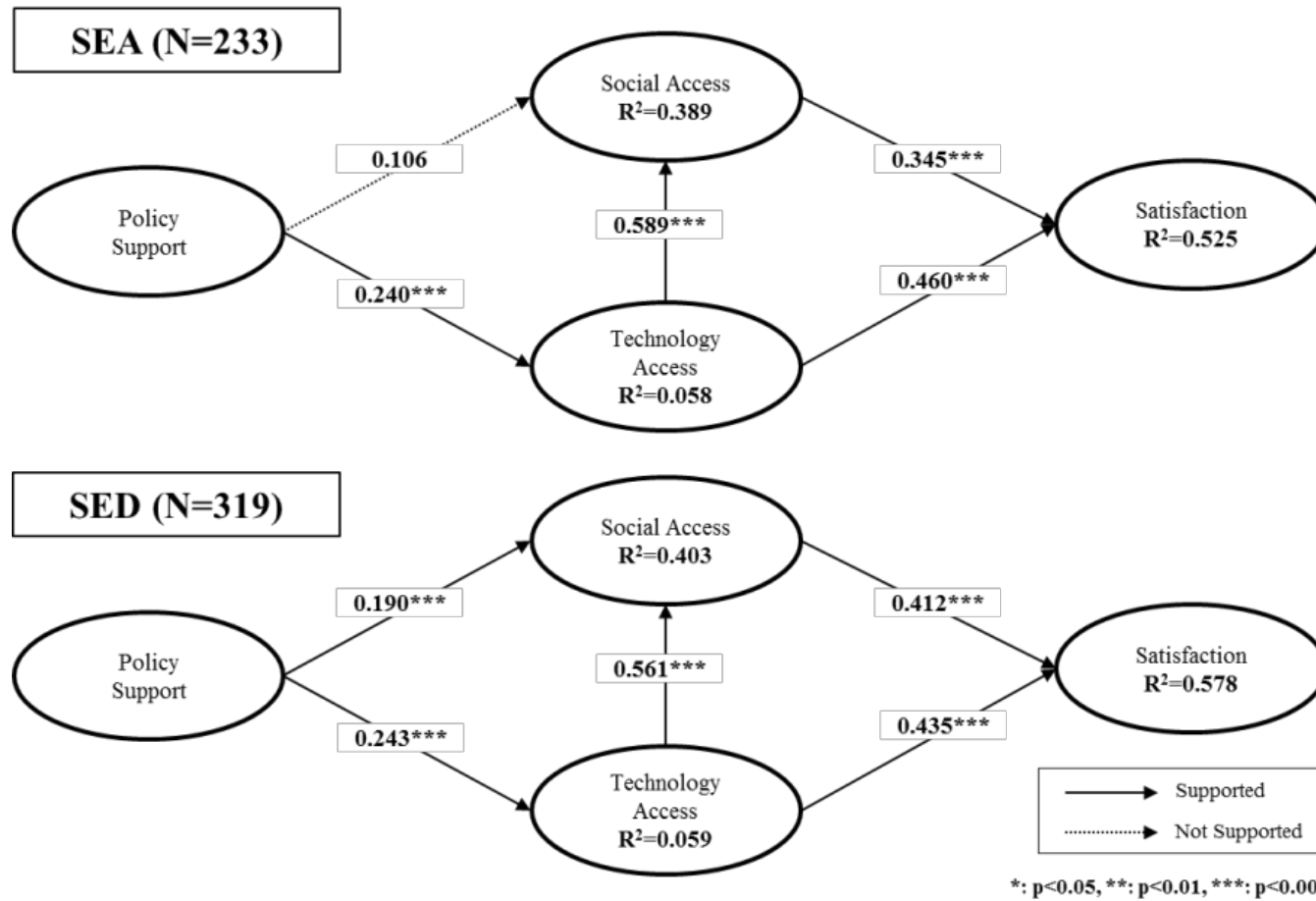


Figure 2. Results of the path analysis



Discussion & Implication



- The study has important implications for governments. It underscores the need to address the issues of digital divide so that the society as a whole can benefit from ICT development and advancement.
- This study confirms the role of governmental policy support in affecting citizens' technology and social access as well as their satisfaction toward Internet use.
- The results imply that a one-size-fit-all policy will not be effective. Instead, governments need to tailor different intervention programs based on the socio-economic status of the citizens.
- For the SED, governments need to exert tighter control toward the pricing of ICT hardware, software, and online contents. This will ensure that this group can enjoy the benefits of ICT advancement just as their advantaged peers. ♪



ICT for Everyone



Thank you very much.
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