Defining and measuring Digital capital. Results from an Italian study.

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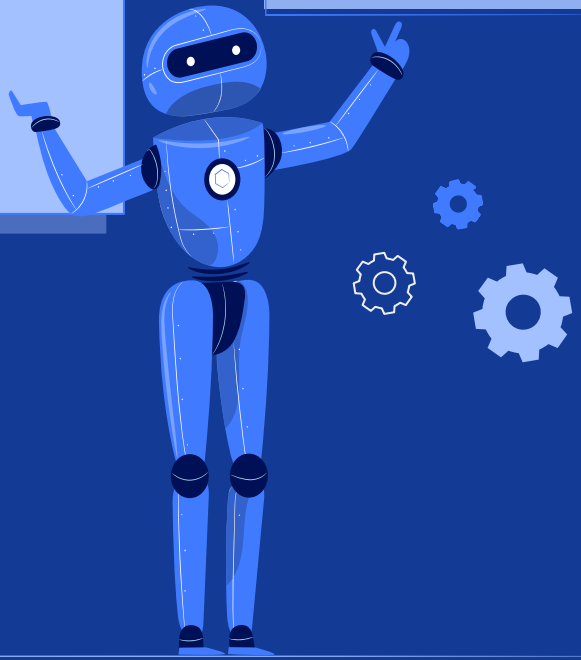


USER'S DIGITAL TECHNOLOGY ECOSYSTEM

A circular and recursive process based on three different dimensions:

PRECONDITIONS

- Existing social exclusion factors (age, gender, region, income, education);
- Infrastructure and invironment;
- Digital capital.

DIGITAL ENGAGEMENT

- Access gap;
- Skill gap;
- Usage gap;
- Capital gap.

OUTCOMES

- Overcome social inequalities;
- Reinforce social inequalities;
- New digital underclass.

Source: S. Park, Digital Capital, Palgrave Macmillian, pp. 5-10

What is Digital divide?

It's a term used in describing differences in access to and utilization of information and communication technologies (ICTs) correlated mostly with several factors such as age (Soker, 2005), gender (Ono & Zavodny, 2008), race/ethnicity (Mesch & Talmud, 2011), education (Clark & Gorski, 2002) but also geographic (Chinn & Fairlie, 2006) and socio-economic dimensions.

Some attempts to Digital inclusion

There are many digital inclusion program through which countries in the world and the EU promote the adoption of digital technologies to protect and help disadvantaged groups, such as the elderly, the disabled, people with low incomes or low education.

WHAT IS DIGITAL CAPITAL?

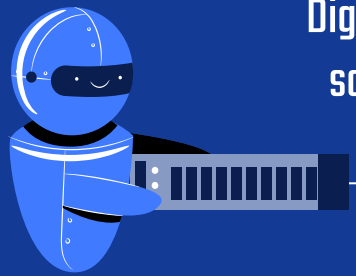
"a set of both digital competences and digital technologies that can be accumulated and transfered to increase individual life chanches".

(Ragnedda, 2019, 1)

Tangible resources: Digital hardware and software devices.

Intangiblle resources: Experiences, skills and competences (analytical, computational, problem solving).

Improvement of the quality of life.



In literature, there are already several attempts aimed to validating the concept of Digital capital through bivariate analysis between Digital capital and socio-demographic and socio-economic variables.

Income level: (Mardis, 2013; Ragnedda and Muschert, 2013);

Age: (Hargittai and Hinnant, 2008);

Gender: (Hargittai, 2010; Wasserman and Richmond-Abbott, 2005; Haight et al., 2014);

Education level: (Attewell, 2001; Clark and Gorski, 2001, 2002);

Urban/rural areas: (Crang et al., 2006; Townsend et al., 2013).

RESEARCH DESIGN

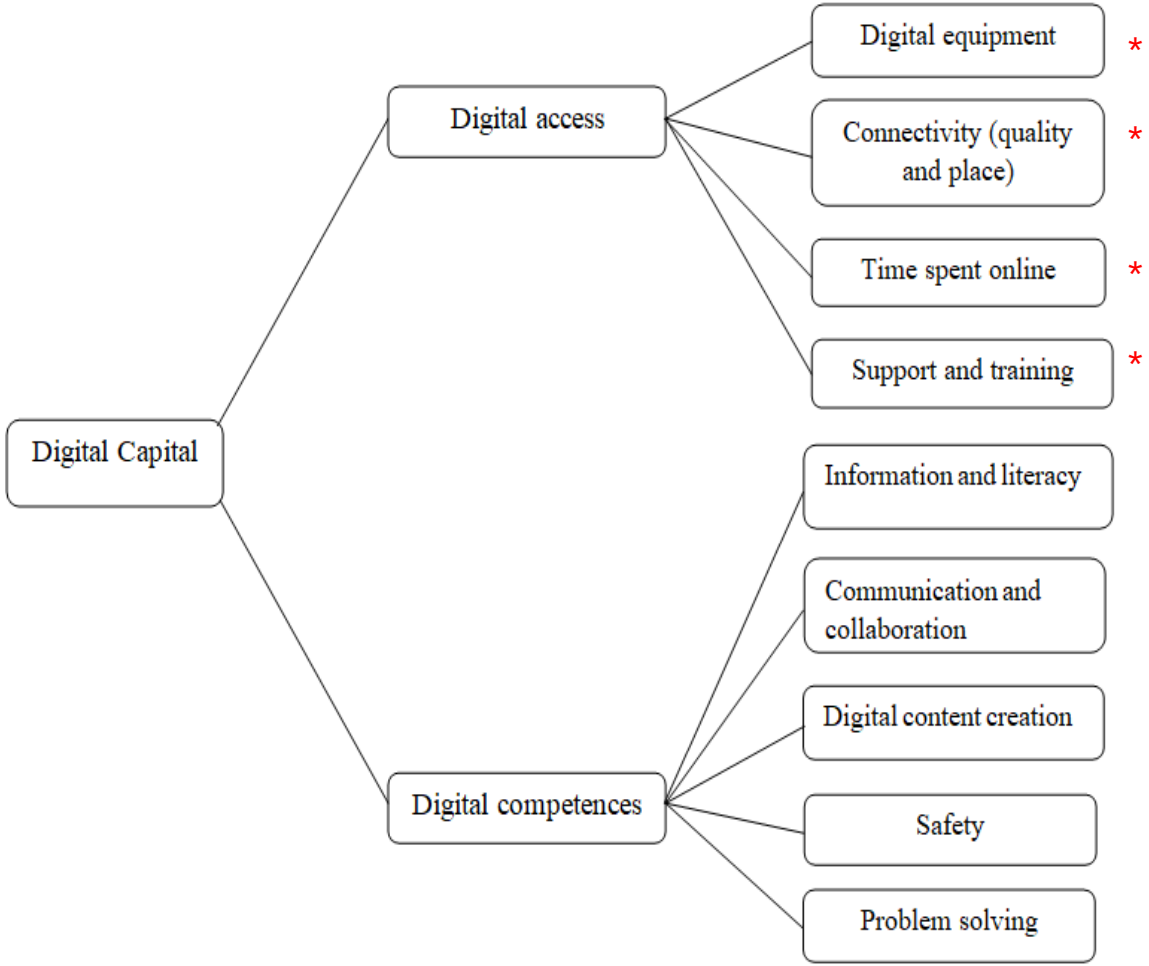
Research questions:

I. Can Digital capital be measured?
II. Is Digital capital linked to socio-demographic and socio-economic variables?

Research method, sample and data collection

A quantitative approach was adopted to investigate the research questions by developing an online survey. The research unit of analysis is represented by individuals between the age of 16 and 80 living in Italy.
The sample selected is technically considered «availability sampling» or «convenience sampling» which involves only available people.
Therefore, the sample, that consists of 225 pleople involved, does not claim to be representative.

The conceptualization of Digital capital



* Areas of competences identified by «DigComp 2.1. the Digital Competences Framework for Citizens» (Carretero, Vuorikari and Punie, 2017)

VALIDITY

«Validity concerns the crucial relationship between concept and indicator».

While the definition of validity seems simple, there are several different types of validity that are relevant in social science: Concurrent validity, Content validity, Construct validity, Predictive validity.
Each of these types of validity is more suitable than others to evaluate a specific relationship.

In this case, the Costruct validity is the best procedure to study a new and theoretical concept as the Digital capital.
«Construct validity must be investigated whenever no criterion or univers of content is accepted as entirely adequate to define the quality to be measured» (1979, 22)

Five research hypothesis

1. The level of digital capital is positively related to incomes:

What is your annual household income after taxes? Total income for you/spouse/significant other	Mean	Std. Deviation
Under €10k	-,4806771	,97500250
€11-25K	-,0224900	,90333643
€26-50K	,5039033	1,10899688
€51-100K	,1704538	1,00244918

2. Urban users have higher Digital capital than rural users:

Are you currently living in...	Mean
Urban areas	,1744050
Small towns	-,1182072
Rural areas	-,3295077

3. The level of digital capital is negatively related to age:

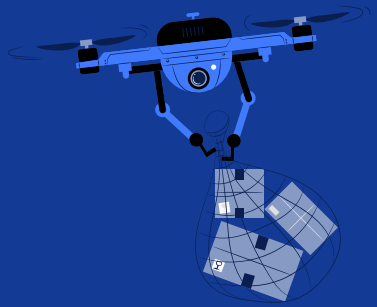
Correlations			
		What is your age?	Digital Capital
What is your age?	Pearson Correlation	1	,027
	Sig. (2-tailed)		,689
	N	383	225
Digital Capital	Pearson Correlation	,027	1
	Sig. (2-tailed)	,689	
	N	225	225

4. Men are more likely than women to have a higher level of Digital capital:

Gender	Mean
Man	,4549616
Woman	-,2510133

5. The level of Digital capital is positively related to educational level:

Educational level	Mean
Altro (specificare)	,5731692
Some high school, no diploma	-,3860309
High school graduate	-,2859273
Some college credit, no degree	-,0471680
Bachelor's degree	,0358032
Master's degree	,0714599
Master	,3958905
Doctorate degree	1,3279067



CONCLUSIONS

Validity

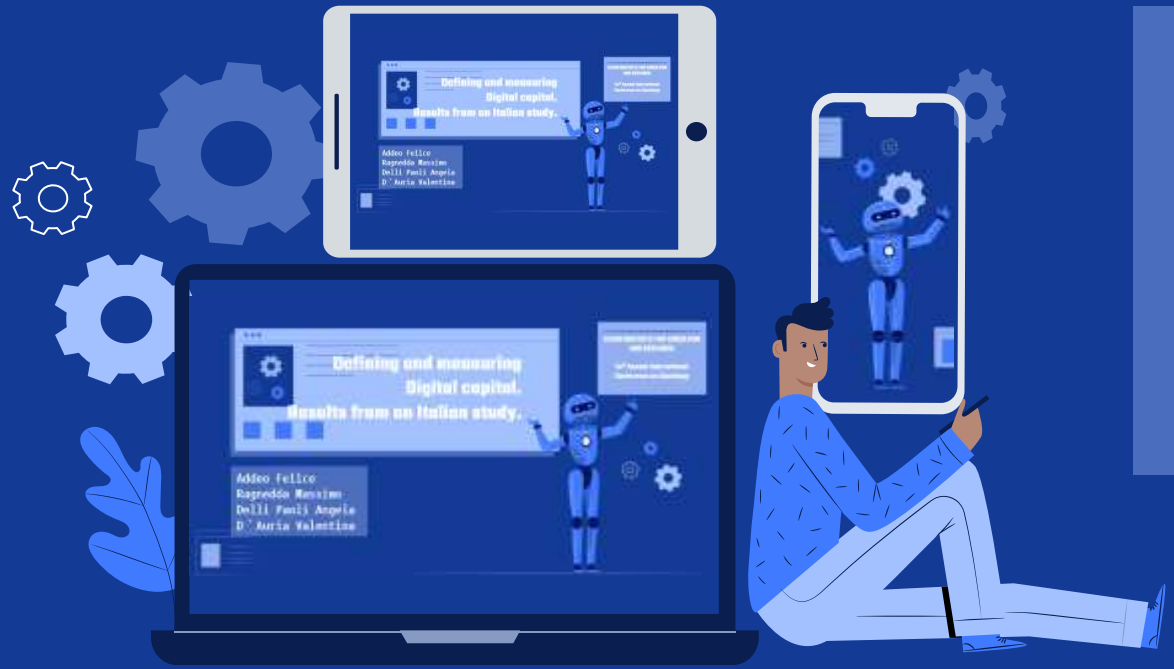
Digital capital is associated to the socio-demographic and socio-economic variables.

Indipendence

Digital capital can be considered as a specific capital.

Future opportunities

1. Identify digital divide risk areas;
2. Create ad hoc strategies.



Thank you for the attention!