Electronic Capital
Economic and Social Geographies of Digitalization

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Abstract

Digitalization, *the social, economic and cultural process where individuals, organizations and societies access, adopt, use and utilize digital technologies*, is expected to produce comprehensive societal benefits. Here, "the spillover effects" of the utilization of digital technologies such as e-government, teleworking and social media are examined in order to explore the added value that can be potentially gained from digitalization. Moreover, the study advances the conceptual perception of how, where and to whom the digitalization produces added value. The research applies Bourdieusian neo-capital theory, which emphasizes the significance of tangible and intangible forms of capital in understanding the social world.

This dissertation addresses digitalization questions through four papers: The first paper is conceptual in nature. It redefines and introduces the concept of *e-capital* as another form of intangible capital, which *emerges from the possibilities, capabilities and willingness of individuals, organizations and societies to invest in, utilize and reap benefits from digitalization and thus create added value*. All forms of capital (physical, economic, human, social and cultural) are both required and produced in this process. The second paper exposes spatial and social disparities in the use of social media in the Helsinki Metropolitan Area (HMA), and the third paper shows the connection between teleworking, knowledge intensity and creativity of work and e-capital. Both of these papers draw on a survey of 971 inhabitants of the HMA

conducted in 2010. The fourth paper examines the national e-government programme E-services and e-democracy (SADe) by exploiting 15 stakeholder interviews conducted in 2012. The paper indicates that the programme was mainly driven by a technological paradigm.

The study demonstrates that the basic, primary motivation for advancing digitalization in societies is the fact that it matters: digitalization can provide e-capital and produce added value that cannot be gained or would be significantly more difficult to gain without digital technologies. The benefits do not materialize solely through the production of new innovative technological solutions, but rather they arise from comprehensive implementation by the individuals, organizations and societies. These actors possess varying amounts of different forms of capital and thus vary in terms of their possibilities, capabilities and willingness to implement new digital tools.

Since different forms of capital are needed in order to create e-capital from digitalization, e-capital is most likely to emerge in the same locations as other forms of capital. However, the conceptualisation of e-capital demonstrated that jumping into the e-capital conversion process gives access to other forms of capital. This should motivate individuals, organizations and societies (including the public bodies supporting them) in their digitalization process.

Keywords: e-capital, social media, teleworking, e-government, digitalization, Pierre Bourdieu

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At home in Helsinki, April 24, 2016,
Maria Merisalo

Contents

List of original publications

This dissertation is based on the four papers listed below. The papers are referred to with their roman numerals in the text.

Paper I: Merisalo, M. & T. Makkonen (2015). Electronic capital – Applying Bourdieusian neo-capital theory in the realm of digitalization. Submitted manuscript.

Paper II: Merisalo, M. (2014). Sosiaalisen median käytön alueelliset erot Helsingin ydinkeskustassa ja pääkaupunkiseudun erilaisilla esikaupunkialueilla ('Regional differences in the use of social media in the Helsinki city center and different suburban areas in the Metropolitan Area'). *Terra* 126: 1, 21–37.

Paper III: Merisalo, M. Makkonen, T. & Inkinen, T. (2013). Creative and knowledge intensive teleworkers' relation to e-capital in the Helsinki Metropolitan Area. *International Journal of Knowledge-Based Development* 4: 3, 204–221.

Paper IV: Inkinen, T. & Merisalo, M. (2014). Managing e-government: Stakeholder view from the administration service developers. *In*: Measuring e-government efficiency. The opinions of public administrators and other stakeholders. Rodríguez Bolívar, M. P. (Ed.). New York: Springer, 171–189 (Public Administration and Information Technology; 5).

Author's contribution:

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Original idea	MM	MM	MM	MM
Study design	MM	MM	MM, TM	MM
Data collection	MM*	MM	MM	MM
Analysis	MM*	MM	MM, TM	MM, TI
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MM = Maria Merisalo, TM = Teemu Makkonen, TI = Tommi Inkinen, * The paper is conceptual.

Abbreviations

EU   European Union
GDP   Gross Domestic Product
GNI   Gross National Income
HMA   Helsinki Metropolitan Area (here refers to Espoo, Helsinki, Kauniainen and Vantaa)
ICTs   Information and Communication Technologies
KBD   Knowledge-Based Development
MoF   Ministry of Finance
SADe   The national E-services and e-democracy programme coordinated by MoF
SNSs   Social Networking Sites

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1 Introduction

"We are in the middle of a major technological revolution that is transforming our ways of producing, consuming, organizing, living, and dying" (Manuel Castells 1985: 1).

Digitalization, which refers to *social, economic and cultural process where individuals, organizations and societies access, adopt, use and utilize digital technologies* (Brennen & Kreiss 2014; Katz et al. 2014: 32), has become a salient topic in public discussion in Finland. Policy programmes, both in the European Union (European Commission 2015) and at the national level (Government Programme 2015) include digitalization among their top initiatives. The clear goal of these initiatives is to harness the benefits that digitalization is expected to produce. Throughout history, the possibilities of new technologies have continually given rise to expectations of a better future (e.g. Toffler 1980). However, in the scientific debate, the paradigm has changed from a deterministic idea of "the technological revolution" (e.g. Castells 1985), through the "network society" (Castells 1996) and the "information society" (e.g. Webster 2002), to the perception of technology as an "impetus" rather than a "panacea" for positive economic and social change (Graham 2011: 223). Simultaneously, intangible forms of capital have become important in value creation in knowledge economies (Powell & Snellman 2004).

This study makes a contribution to the economic and social geographies of digitalization (e.g. Malecki 2002; Graham 2005; Paradiso 2006; Adams 2010). Economic and social geographers (and other social scientists) have researched spatial distribution and inequalities in the diffusion of information and communication technologies (e.g. Chen & Wellman 2004; Inkinen 2006; Graham 2011; Li & Wang 2014); the Internet's relation to physical distance and proximity and the relationship between virtual space and place (e.g. Couclelis 1996; Graham 1998; Zook 2006; Wilson & Corey 2011; Graham & Zook 2013); and the development of information and knowledge-based societies and e-government (e.g. Inkinen 2003; Inkinen 2012; Zook & Grote 2014; Graham 2015).

Here, "the spillover effects" of the use and utilization of digital technologies, such as e-government, e-services, social media and teleworking (Katz et al. 2014: 32) are examined in order to explore the added value that can potentially be gained from digitalization. Since cities are forerunners in digitalization (Graham 2013; Kitchin 2014; Official Statistics of Finland 2016; see also Appendix 1), this study focuses on the Helsinki Metropolitan Area (HMA), the capital city region of Finland, one the most advanced states[1] in digitalization in Europe (Katz et al. 2014; European Commission 2016). In addition, the digitalization discourse within the national E-services and e-democracy (SADe) programme is examined. Moreover, this study applies the concept of e-capital to advance the theoretical perception of how, where and to whom digitalization produces added value. To do this, the dissertation redefines and introduces *e-capital* as a form of capital that *emerges from the possibilities, capabilities and willingness of individuals, organizations and societies to invest in, utilize and reap benefits from digitalization and thus create added value* (Paper I) or *benefits*

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[1] Finland was ranked fourth in a comparison of 27 EU countries between 2004 – 2011 (Katz et al. 2014), and fourth in a "Digital economy and society index" of 28 EU countries in 2015 (European Commission 2016).

that could not be gained or would be significantly more difficult to gain without digital technologies.

The specific research questions are:

1. How is digitalization intertwined with capital conversion and how does it produce e-capital in the parallel dimensions of physical and digital space?
2. How is e-capital related to the economic and socio-spatial urban features of digitalization in the Helsinki metropolitan area?

　a. How does the utilization of social media reflect socio-spatial differences between Helsinki city centre and the suburban areas in the HMA?

　b. How are the utilization of social media and other ICTs related to teleworking and knowledge intensiveness and creativity in work in the HMA?

3. How does e-capital appear in the e-government discourse within the national SADe programme in Finland?

The four individual papers address these research questions (Figure 1). Paper I is a theoretical paper that examines the concept of e-capital in the realm of Bourdieusian neo-capital theory. The paper conceptualizes how the possibilities, abilities and willingness of individuals, organizations and societies to invest in and utilize digitalization produce e-capital and how e-capital is converted to others forms of capital. The study emphasizes the spatial dimension of e-capital. The paper forms the theoretical basis for this dissertation. It primarily answers the first research question but also provides a theoretical framework for the second and third research questions.

Paper II analyses residents' use of social media in the Helsinki Metropolitan Area. The study contributes to the discussion of the digital divide in a local and urban context. It examines the relationship between social media and bonding and bridging social capital, which relates to weak and strong ties and individuals' access
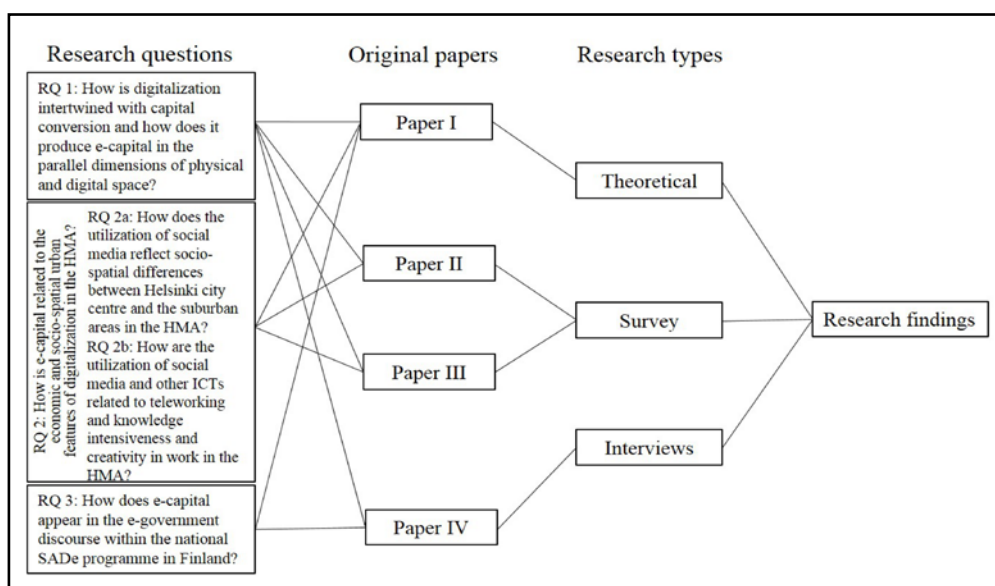

Figure 1. The study design of this dissertation.

to new opportunities. Thus, it considers the local disparities in individuals' e-capital. The paper answers the second research question, especially question 2a but also question 2b. Paper III analyses how teleworkers and non-teleworkers differ in their level of education, ICT and social media use and knowledge intensiveness and creativeness in the HMA. The paper applies the concept of e-capital and answers research question 2b. Both papers are based on a survey that was conducted for residents in the HMA in 2010.

Paper IV considers the stakeholder view of e-government by drawing on the Finnish E-services and e-democracy (SADe) programme. The study examines the principal discourses of service developers on e-government development and analyses the strengths, weaknesses, opportunities, and threats that are identifiable in those discourses. In addition, the chapter considers the role of e-government in the development process of democracy. Stakeholder interviews form the data for the chapter. In conjunction with paper I, this paper answers the third research question.

This dissertation is structured as follows: First, capital conversion is discussed in terms of Bourdieusian neo-capital theory. Then, a definition of the concept of "digitalization" is provided. This is followed by a literature review on the spatial division of tangible and intangible forms of capital in relation to the digital realm. After exploring the relationship between the digital and physical dimension of digitalization and knowledge-based development, the literature on public sector digitalization, i.e. e-government, is examined. The theory part ends with a synthesis of the theoretical foundation of the dissertation. This is followed by an introduction to the data and methods used for analysing the survey for residents in the HMA in 2010 and interviews for e-government developers within the national

SADe programme in 2012. The dissertation concludes with a summary of the results of the original papers and the conclusions to be drawn from the study.

2 Theoretical foundation and key concepts

2.1 Capital conversion in the realm of Bourdieusian neo-capital theory

This dissertation analyses digitalization in relation to the concept of capital. It builds on previous studies that have defined technological and digital resources and skills as forms of capital, including sociotechnological capital, referring to "technology-mediated social relations" (Resnick 2001: 247), electronic capital, (originally) referring to college-graduate workers' use of technologies (Hall et al. 2000), technological capital (e.g. Selwyn 2004: 355) and digital capital (e.g. Bughin & Manyika 2013; Baum et al. 2014; Seale et al. 2015), referring to resources behind and following technology engagement, and digital social capital, referring to social capital that appears in digital communities (Mandarano et al. 2010, see Paper I). Moreover, several studies have examined the connection between access and the use of ICTs and economic development (e.g. Kiiski & Pohjola 2002; Katz et al. 2014; Pohjola 2014), tangible and intangible resources (e.g. Vicente & López 2011), and different forms of capital in reference to the concepts of Pierre Bourdieu (Selwyn 2004; Baum et al. 2014; Julien 2014).

Since the literature lacks a comprehensive understanding of the relationship between different forms of capital, capital conversion and digitalization, this research makes a contribution to the conceptualization of e-capital: Here, the perspective is widened to include not only resources and assets but the entire "process" (Harvey 2010: 40) of "how investments in digitalization produce e-capital that results in added value, which has a potential to convert to other forms of capital" (Paper I). The dissertation defines capital in line with Bourdieusian neo-capital theory as the added (or surplus) value that in the conversion process of assets accrues profits to its owners and reproduces itself (Bourdieu 1986; Harvey 1982; Lin 1999; Svendsen et al. 2010, see Paper I).

Table 1. Typology of tangible and intangible forms of capital in relation to e-capital (adapted from Lin 1999).

	Classical theory Tangible forms of capital		Neo-capital theory Intangible forms of capital			
	Physical capital	Economic capital	Human capital	Social capital	Cultural capital	Electronic capital
Capital (Investments in and the added value gained from)	Physical resources	Money, collateral	Education, skills and competences	Social relations and networks, trust	Knowledge of cultural codes, tastes, practices, life-styles	Digitalization, Utilization of ICTs
Level of analysis	Class	Class	Individuals	Individuals	Individuals	Individuals, organizations, societies
Theorist	Marx	Marx	Schultz 1961 Becker 1964	Bourdieu 1986 Coleman 1988 Putnam 1995	Bourdieu 1986; Prieur & Savage 2013	Hall et al. 2000; Resnick 2001; Selwyn 2004; Mandarano et al. 2010; Bughin & Manyika 2013; Baum et al. 2014; Seale et al. 2015; Merisalo & Makkonen (Paper I); Merisalo et al. 2013 (Paper III)
Position	Fundamental	Fundamental	Established	Established	Established	Emerging

Pierre Bourdieu (1986) states that it is impossible to appraise the social world unless all forms of capital (both tangible and intangible) are recognized (Table 1). Classical economic theory only identifies physical capital, i.e. raw materials and economic capital that can be "institutionalized" and/or converted into money (Bourdieu 1986: 47). Nevertheless, particularly in relation to knowledge-based development, intangible forms of capital have been observed to be fundamental for economic and productivity growth (e.g. Rutten & Boekema 2007; Melachroinos & Spence 2014). Such forms of intangible capital include human capital, which refers to education and skills (Schultz 1961; Becker 1964), social capital, which refers to networks, social relations and trust (Bourdieu 1986; Coleman 1988; Putnam 1995) and cultural capital, which refers to knowledge of cultural codes, tastes, practices and life-styles (Bourdieu 1986; Bourdieu 2010; see also Prieur & Savage 2013). This dissertation redefines and introduces an emerging form of capital, e-capital, as another form of intangible capital that should be recognized.

Bourdieusian neo-capital theory observes that all the different forms of capital (rather than simply tangible capital in classical economic theory) are in a continuous conversion process where one form of capital is converted into another through social actions (Bourdieu 1986; Lin 1999; Svendsen et al. 2010; Paper I; see Figure 2). The conversion process is essential for gaining access to goods and services that cannot be acquired simply through economic capital but instead require, for example, human capital, which refers to specific knowledge and skills, social capital, which refers to relationships and networks or cultural capital, which refers to knowledge of cultural codes (Bourdieu 1986: 253). For example, as Bourdieu argues, "to possess the machines" only economic capital is needed, but to "use them in accordance with their specific purpose", cultural (and other forms of) capital are required (Bourdieu 1986: 247). Moreover, intangible forms of capital "cannot
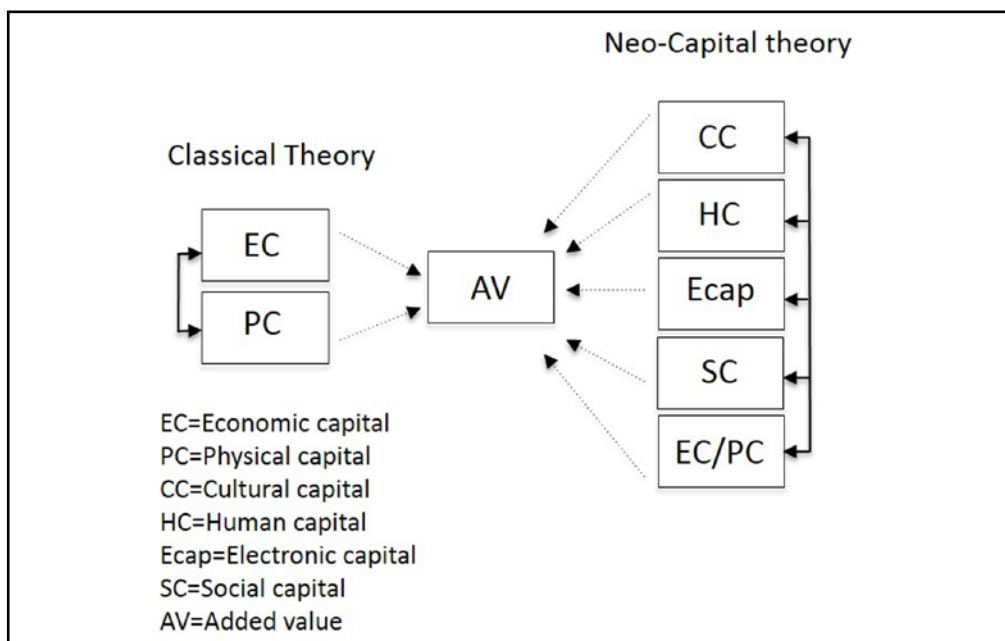

Figure 2. Conversions of capital (adapted from Svendsen et al. 2010, Paper I).

act instantaneously, at the appropriate moment, unless they have been established and maintained for a long time, as if for their own sake, and therefore outside their period of use". Thus, even though the conversion process is dependent on economic capital, as it "is at the root of all the other types of capital" (Bourdieu 1986: 252–253), the process is fundamentally related to all forms of capital and the social, economic and cultural dimensions of the social world (Paper I).

A key notion in neo-capital theory is the active role of individuals (in contrast to classical economic theory, which emphasizes the role of class structure and the elite) in gaining and converting different forms of capital (Lin 1999; Svendsen et al. 2010). This study sets e-capital within the realm of Bourdieusian neo-capital theory to unravel the relationship between different forms of capital, digitalization and the central actors, i.e. individuals, organizations and societies (Paper I). In other words, this research provides a framework for understanding how digitalization and e-capital are intertwined in the spatiality of our everyday life observed from societal, economic or cultural perspectives.

2.2 Digitalization and tangible and intangible forms of capital

2.2.1 Defining digitalization

The concept of *digitalization* is poorly defined in the literature. This study defines and uses the term to examine *the social, economic and cultural process where individuals, organizations and societies access, adopt, use and utilize digital technologies "to generate, process, share and transact information"* (Katz et al. 2014: 32). Digital technologies are at the core of the latest evolution of ICTs (Sabbagh et al. 2012) and *digitization*, which refers to *the technological*

process where analogue information is transformed into a digital form (cf. Brennen & Kreiss 2014; Dellarocas 2003; Katz et al. 2014).

Digitalization (referring to a societal process and digitization (referring to a technological process) are mutually dependent, since digitization is a prerequisite for, as well as an outcome of, digitalization. Without digitization and digital technologies, digitalization could not emerge. Moreover, not only digital technologies but also the "spillover effects" of their use (Katz et al. 2014: 32), such as e-commerce, social media, e-government services, robotics, the internet of things, etc. are both behind and also followed by the continuously progressing development of digitalization.

This study focuses on digitalization and the use of digital technologies, including "the spill-over effects" of their use: Paper I conceptualizes the concept of e-capital and papers II, III and IV study the use of social media and other ICTs, teleworking and e-government.

2.2.2 Digital divides and the uneven diffusion of digitalization

Digitalization has spread, and is still spreading, unevenly across the globe. This uneven penetration has produced digital divides, i.e. social and spatial divisions of access, adoption and use of ICTs (e.g. Hanafizadeh et al. 2009; Jones et al. 2009; Tsatsou 2011) and inequalities in abilities, skills and attitudes vis-à-vis ICTs among those who have access (e.g. Dewan & Riggins 2005; Vicente & López 2010; Park 2015). Van Deursen & van Dijk (2013) argue that digital divides and the uneven diffusion of digitalization in relation to internet use reflect uneven economic, social and cultural relations in the physical (offline) world. This dissertation asserts that digitalization is a process that is dependent on the spatial and social division of

tangible and intangible forms of capital (Paper I).

Physical access to ICTs refers first and foremost to infrastructure, such as telecommunication masts, broadband connections, personal computers, smart phones as well as software and data systems (Hanafizadeh et al. 2009; Graham 2011). Economic capital and all the other forms of capital are needed to develop the "physical capital" of the information society (Paper I). In line with this, economic (and other) resources are needed to adopt ICTs: In fact, Billon et al. (2009) observe that in high-income countries GDP is the best factor for explaining ICT diffusion, whereas internet (and other ICT) costs are more significant in less-developed economies (see also Kiiski & Pohjola 2002). Annual incomes have explained individuals' internet usage since the early years of mass adoption of the World Wide Web (Lenhart et al. 2003; Chinn & Fairlie 2006). Household incomes still explain (not solely) non-usage of mobile phone services in Sweden (Annafari et al. 2013) as well as the use of government e-services in Finland (Taipale 2013). Furthermore, income gaps (among other resources) explain regional digital divides in the 27 EU countries (Vicente & López 2011). Thus, physical and economic capital create the *possibilities* for digitalization and e-capital to emerge (Paper I).

Human capital in terms of education and skills is one of the main impetuses behind digitalization (e.g. Katz et al. 2014): In fact, Vicente & López's regional comparison of the 27 EU countries highlights the availability of human resources in science and technology as the key factor in explaining the disparities in technology adoption (Vicente & López 2011). In line with this, Mack and Faggian (2013: 392) observe that "broadband has a positive impact on productivity only in locales with high levels of human capital". Education is significant in explaining global ICT diffusion (Dewan & Riggins 2005;

Chinn & Fairlie 2006) as well as local disparities in ICT use in urban contexts (Crang et al. 2006; Inkinen 2006; Paper II). Thus, general training to improve ICT skills, with particular emphasis on the entire educational system, is vital (Inkinen 2006: 72). Van Deursen and van Dijk (2013: 521) open up this logic by arguing that "differences in education have always been one of the causes of differences in society and opportunities in life and the Internet is just the next advancement in communication technology with its usage determined by education". Furthermore, Piketty's (2014: 22) notion of knowledge and skill diffusion as the main factor for increasing equality is acknowledged here. Thus, the dissertation notices that human capital is connected to the *capabilities* of individuals, organizations and societies to gather e-capital (Paper I).

Cultural (among other forms of) capital relates to individuals' ICT use and their digital skills (Selwyn 2004; Loi & Hatlevik 2015), even though ICT cannot be (unambiguously) seen as an indicator of differing cultural capital (Tondeur et al. 2011). Robinson (2009: 500, 504) has observed that those teenagers with high-quality internet access at home appreciate "web surfing as a valuable activity in which to invest time". Those with no internet access or low-quality internet access use and value it less comprehensively. Moreover, differing cultural codes influence ICT utilization: Tsatsou (2012) observes that openness to novelty relates to internet adoption and Choi et al. (2011) that cultural norms and values influence interactions on social networking sites and the emergence of social capital within these services. In fact, cultural and institutional factors relate to ICT adoption at a regional level in the 27 EU countries (Vicente and López 2011). Furthermore, in their global comparison Zhao et al. (2014) found a connection between cultural factors and

e-government diffusion in terms of development and participation, even though economic development (in terms of GNI per capita) had a moderating effect on this relationship.

Social capital is also needed to promote digitalization. In fact, social networks and relations between family and friends, organizations and institutions, and especially the social obligations related to these relations are linked to people's technology use (Selwyn 2004: 353). Simply put, "social capital can contribute to reducing digital exclusion" (Baum et al. 2014: 354). However, not only relationships between individuals but also the norms and social relations that are embedded in the social structure, such as relations between the public and private sector, define technology diffusion (Borgida et al. 2002). Furthermore, the Internet has promoted the emergence of innovative networks (Bakici et al. 2013) and social capital that promote further online actions; for instance, online social networks explain e-participation (Vicente & Novo 2014) and foster the success of crowdfunding campaigns (Colombo et al. 2015). Simply put, the *willingness* of individuals, organizations and societies to utilize digital technologies and acquire e-capital is connected to social and cultural capital (Paper I).

Finally, Baum et al. (2014: 355) argue that "people who are already disadvantaged in terms of their access to economic, social and cultural capital are further excluded from" the technologies and benefits they bestow. In fact, "digital inclusion" is a prerequisite for individuals as well as organizations and societies "to benefit from digital technologies whether this is at school, at work, at business and within civil society" (McNutt 2014: 65). This dissertation concludes that even though digitalization has already significantly progressed in knowledge economies, the digital divides in relation to the benefits gained from ICT use still matters not only on a global scale but also in a regional and local context. The social and spatial division of tangible and intangible forms of capital defines how, where and to whom digitalization most likely produces added value (Paper I, II and III).

2.2.3 The benefits and disadvantages of digitalization

Tangible and intangible forms of capital are not only needed to produce digitalization, but, in addition, all those forms of capital have the potential to emerge in digital actions. However, they can materialize either in the form of a benefit or a disadvantage regarding the stakeholder group and physical location (e.g. Grover 2015; Näsi et al. 2015). In fact, digitalization can be utilized for constructive and destructive purposes in myriad ways. Here, the relationship between those benefits and disadvantages and the different forms of capital are examined.

Digitalization produces economic capital. This can be viewed at the macroeconomic and organizational levels as 1) the impact of ICT production and use on output growth (e.g. Jalava & Pohjola 2002; Jalava & Pohjola 2007; Jalava & Pohjola 2008), 2) the impact of ICTs on productivity (e.g. Jalava & Pohjola 2007; Jalava & Pohjola 2008; Ceccobelli et al. 2012) and 3) the impact of ICT investments (even though the impact smaller than for investments in R&D and human capital) on the creation of new innovations (Hall et al. 2013; Rybalka 2015).

Van der Wee et al. (2014) noticed in their comparison of two cities, one in Belgium and one in the Netherlands, that investments in better quality infrastructure (in terms of fibre optic versus traditional broadband networks) resulted in more extensive added value in e-government and e-business (see also Choi & Hoon Yi 2009). Not only investment in ICT infrastructure and its utilization but also "the cumulative adoption of all

technologies in addition to the assimilation and usage in the production and social fabric" result in economic (and social) development (Katz et al. 2014: 43). Diffusion of digitalization in terms of public sector processes enhances "service quality and reliability", which "results in cost savings and efficiency". This process is dependent on the size and location of the organization in question (Inkinen 2010: 631). Thus, the economic capital gained from the utilization of ICTs materializes unevenly across time and space (cf. Jalava & Pohjola 2002; Jalava & Pohjola 2007) within the digitalization process and is dependent on human (e.g. Mack & Faggian 2013; Ortiz et al. 2015) and other forms of capital.

Utilizing digitalization demands human capital; but it also gives rise to new skills and competencies. Since digitalization "shape[s] information, communication and collaboration" (Radovanovic et al. 2015: 1) training in how to gain new digital skills and competences (Inkinen 2006; Punie 2007; Loi & Hatlevik 2015) is necessary in all areas of life, but is particularly important in such areas as education and working life, "participation" and "self-development" in the knowledge society (Punie 2007: 185). Furthermore, as a result of digitalization, some skills become more valuable and other skills become worthless: people who hold the wrong skills have little to offer employers as "the machine" can replace their work (Brynjolfsson and McFee 2011, 2014). In fact, Pajarinen et al. (2015) estimate that one-third of the Finnish (as well as Norwegian) labour force could potentially be replaced by "the machine" (see also Frey & Osborne 2013). Thus, the added value gained from digitalization materializes as a disadvantage for an employee possessing the "wrong" skills, while it is a benefit for some other stakeholders.

To respond to the needs of individuals and industry (Coupal 2004), schools utilize ICTs in education. The debate on the benefits of ICTs in education involves consideration of both optimistic (e.g. Rahimi et al. 2015; Wang et al. 2015; Yang 2015) and pessimistic research findings (OECD 2015) as well as critical notions of the challenges of ICTs (e.g. Livingstone 2012). However, the benefits gained from digitalization can only be realized in a favourable environment (Punie 2007: 196). Not all technology use automatically produces added value in terms of better learning outcomes; instead, realistic goals and expectations of the benefits that digitalization can (and cannot) produce should be more widely adopted in education (cf. OECD 2015). In addition, the growing significance of digitalization for economic growth and productivity and the potential changes in employment structure in societies need to be carefully considered in education (Pajarinen et al. 2015).

The relationship between digitalization and cultural (like other forms of) capital is bidirectional, as digital actions promote knowledge of (digital) cultural codes and practices and create new "consumer cultures" (Saltmarsh et al. 2008: 192), facilitate the emergence of new forms of cultural capital such as "cosmopolitanism" (cf. Prieur & Savage 2013), and even affect users' identity (Östman 2015). Utilization of the Internet and social media promote phenomena such as flash mobs in urban youth culture and thus "carry enormous potential as a vehicle for mobilization" of political protests (Molnár 2013: 55, also e.g. Scherman et al. 2014) and commercial marketing (Molnár 2013: 55, also e.g. Berthon et al. 2012). Furthermore, e-government and social media have the potential to advance a culture of participation and collaboration. Simply put, ICTs can act "as openness and anti-corruption tools" that increase transparency in societies (e.g. Bertot et al. 2010: 264; McNutt 2014).

Thus, in close relation to cultural capital, social capital is also produced in digital actions: the Internet and especially social networking sites

(SNSs), which are "the most active social space for relationship building and social exchange" (Choi et al. 2014: 120) facilitate social capital (e.g. Ellison et al. 2007; Steinfield et al. 2008; Hooghe & Oser 2015). Both bridging and bonding social capital (Putnam 2000), which refer to strong (e.g. family and friends) and weak (e.g. working colleagues) ties (Granovetter 1973), emerge via social digital actions (Choi et al. 2011; Jiang & de Bruijn 2014; Ellison et al. 2014; Paper II). However, online interaction also enables the effective dissemination of hate speech and false information (e.g. Gerstenfeld et al. 2003; Burnap & Williams 2015), and online hate material can even reduce the social trust of young people, as demonstrated by Näsi et al. (2015) in their study of young Finnish Facebook users. This may create disadvantages, for instance for the development of an "innovative civil society" (Häkli 2009: 15).

To conclude, the added value (in relation to all forms of capital) that digitalization produces is not uniform for all in any given place; rather, it is dependent on the specific stakeholder group and location in question. Digital technologies are tools that need to be actively utilized for specific purposes in order for benefits to accrue (Paper I).

2.3 The digital and physical dimensions of space and knowledge-based development

Technological progress has advanced within the realm of knowledge-based development (KBD) (Cooke & Leydesdorff 2006; Inkinen & Vaattovaara 2007), which emphasizes the significance of intangible forms of capital in economic growth (David & Foray 2002; Leydesdorff 2005; Schiuma & Lerro 2008). Progress in ICTs has inspired researchers to examine not only the regional diffusion of digitalization but also the changing relationship

between physical and digital space and the role of cyberspace (Graham 1998) in economic and societal development (Castells 1996; Neirotti et al. 2014; WEF 2015). KBD has been essential in both the production and utilization of digitalization. However, there has been a need for both tangible and intangible forms of capital to form the operational environment for digitalization, in other words, the ICT industry that has produced the information infrastructure (e.g. telecommunication masts, broadband connections), hardware (e.g. computers, mobile phones, tablets etc.) and software etc. (Selwyn 2004; Graham 2011, Paper I). The production and utilization of ICTs through economic activity has required knowledge workers and new human skills (Pyöriä 2006).

Internet diffusion has blended "virtual spaces and physical places" and created new internet geographies of interaction and connection between individuals, organizations and societies in different locations (Zook 2006: 53). The Internet can diminish the significance of distance (e.g. Couclelis 1996, Cairncross 1997) and reduce the need for physical proximity, as individuals, organizations and societies can "stay informed", "stay in contact" and "express their opinions" through the Internet without the need for physical presence or closeness (Hooghe & Oser 2015: 1188). The "space of flows", a concept introduced by Castells (1996), enables the world (knowledge) economy to work simultaneously in different parts of the world.

In the knowledge economy, the temporal and spatial patterns of work have changed (Hardill & Green 2003) due to knowledge work practices that include the use of ICTs, the high educational level of workers, collaboration and social networking, flexibility, and independence in work and thus enhanced worker creativity (e.g. Blom et al. 2002; Pyöriä 2003; Pyöriä 2006). The utilization of ICTs enables teleworking, i.e.

working regardless of time and space (e.g. Pyöriä 2003; Taskin & Edwards 2007; Linden 2008; Sewell & Taskin 2015) "within the structure of an organizational framework" (Harpaz 2002: 74). Teleworking has been related to home working, which, as Harpaz (2002) argues, is a traditional rather than a novel phenomenon, since it was not until the industrial revolution that work was transferred from the home to fixed premises (factories) on an extensive scale. However, in the knowledge intensive realm, full-time, home-anchored teleworking seems to be the exception rather than the rule (e.g. Pyöriä 2003; Hynes 2014; Kellerman 2015; Paper III). However, when the concept of telework is widened to include not only home-anchored work but also part-time and mobile teleworking, the practice has been found to be far more extensive and evolved among knowledge-intensive and creative workers (Tremblay & Thomsin 2012; Elldér 2015; Paper III).

Despite the predicted benefits and possibilities of teleworking, its advance has progressed more slowly than predicted, especially in remote locations. This has been explained by the lack of a teleworking culture, the presence of unfavourable regulations and the absence of contractual premises (e.g. Pyöriä 2011; Hynes 2014). Helminen & Ristimäki (2007: 337) found that teleworking was most common in the largest urban regions in Finland and that teleworkers both lived and worked in the largest commuting areas (cf. Corpuz 2011; Alizadeh 2013). Large urban areas attract both knowledge and creative workers (e.g. Florida 2005; cf. Alizadeh 2013), all potential candidates for teleworking (Corpuz 2011; Ellder 2015; Paper III). The role of the Internet has been found to be "complementary" rather than "substitutive" for cities in relation to individuals', organizations' and societies' need for physical proximity (e.g. Pons-Novel & Viladecans-Marsal 1996; Kellerman 2015).

Even though ICTs remove some spatial and temporal restrictions from work, particularly in regard to networking and communication, physical proximity has not lost its significance (e.g. Ala-Rämi 2007; Ala-Rämi & Inkinen 2008). Consequently, the role of telework is complementary rather than substitutive for knowledge and creative work. Telework is part of knowledge intensive and creative work practices, not the other way around (Paper III).

In his study on connectedness in relation to Kenya's knowledge-based development, Graham (2015; 878, 881) found that the discourses of "shrinking distance" or a "global village" were persuasive perceptions rather than experienced practices. Despite the potential of ICTs to remove spatio-temporal restrictions, exact, simultaneous synchronization between different locations is utopian rather than realistic, as demonstrated by Zook and Grote (2014) in their research on the geography of finance markets. Therefore, as they argue, "markets will never be able to compress geography to a unitary moment in time-space" (Zook & Grote 2014: 19). Moreover Corey and Wilson (2006: 30) state that even though the significance of distance might diminish for some, there are always many others for whom "distance remains a source of social and economic friction". Moreover, we have yet to see the emergence of a ubiquitous, united cyberspace that nullifies the significance of time and physical location; rather, there are several cyberspaces that both influence and are influenced by the physical world (Graham 1998; Graham 2010: 422). Connectedness does not simply create a world where "information, people, goods, or capital can fully transcend materiality and territoriality" (Graham 2015: 879).

This dissertation uses the concept of the "digital dimension of space" in order to acknowledge the interconnection between physical and digital space. Here, the digital

dimension of space is not a separate entity; rather, it originates from and is anchored in physical space. Even though digital actions are performed through the digital dimension of space, those actions are dependent on the real physical world through individuals, organization and societies. These actors operate in varying operational environments within certain time and space constraints. They possess varying amounts of different forms of capital, and thus vary in terms of their possibilities, capabilities and willingness to break spatial and temporal restrictions by utilizing ICTs and gaining added value from digitalization (Paper I).

2.4 E-governments emerging from and resulting in digitalization

E-government began to emerge in the mid-1990s (Zhao et al. 2014) along with the extensive adoption of the Internet and other ICTs (Yildiz 2007). It operates at all levels of government, such as the state, regional, municipal and local levels (Joseph 2013), and is commonly defined as the utilization of ICTs by public authorities for delivering information, services and increasing interaction with citizens, non-profit organizations, employees, business and other government agencies (Fang 2002; Almarabeh & AbuAli 2010; Nam 2014; Joseph 2013). The concept of public e-services is closely connected to e-government, since e-services are (partly) the result of e-government projects. In both concepts, "the 'e' represents that something is done 'electronically' and can thus be linked to an electronic artefact" and "the 'service' (or 'government') represents something intangible - a process in which value is created for someone" (Lindgren & Jansson 2013: 163).

E-government is usually seen to evolve from purely technology-centred activities into comprehensive practices, eventually encompassing all the functions in an organization. Simultaneously, the responsibility for developing e-government is transferred from the IT-department to all departments in an organization. This requires organizational changes, e.g. improved process orientation, a common willingness and commitment to the holistic perception of development as well as innovation activity concerning the core business of an organization (Linnefell et al. 2014: 136). These changes occur unevenly in time and space; for instance Inkinen (2010) showed that in Finland the extent of municipal e-government services varied according to municipality size and geographical location.

In order to reap the potential benefits of e-government, successful e-government projects are required. Nevertheless, these projects are initiated, developed and implemented under politically and institutionally complex conditions (Yildiz 2007). Thus, when e-government projects fail, the root cause is not only technological, as change management and the "inner workings" of organizations also have a part to play. In fact, e-government is essentially about the "policy formation" process, a process which may even become an obstacle to the development of e-government. These processes of change need "advocacy coalitions" that share the same willingness for change (Linnefell et al. 2014: 138, 140). E-government projects are socio-technical entities that include both political and economic factors that affect their budgeting, personnel, implementation and maintenance. Therefore, they include behavioural components alongside the technological (Joseph 2013: 438).

Successful e-government processes demand not only successful change management in organizations but also the inclusion and engagement of a wide variety of stakeholders, such as "suppliers of infrastructures and applications", "policy makers", "intermediates" and end users

like government agencies, "citizens" and "firms" (Arduini et al. 2013: 178). Social capital and shared trust between the different stakeholders are vital resources that foster the success of development projects (Poutiainen & Häkli 2009). Inkinen (2010: 631) argues that the realization of e-government is "a result of spatially varying subcontracting networks and interactions between stakeholders". Thus, understanding the various roles of different stakeholders (e.g. Belanger & Hiller 2006; Yildiz 2007, Rowley 2011) is important for ensuring the success of e-government development (Axelsson et al. 2013). In fact, successful e-government projects and e-services demand the engagement of all stakeholders. This engagement emerges from shared perceptions of the goals pursued, "value dimensions" and the benefits that e-government potentially produces (Rowley 2011: 59).

Often the main goals of e-government development include the principles of both boosting agency efficiency and providing benefits to citizens in terms of better service quality (Axelsson et al. 2013). However, Axelsson et al. (2013: 10, 20) argue that a situation in which both of these goals are realized in tandem is rather implausible, since internal and external stakeholder groups are too numerous and heterogeneous. To avoid a "fundamental conflict of interest" or "a benefits paradox" (Arendsen et al. 2014: 168), comprehension of the complexity of different stakeholders' expectations is needed. In fact, Axelsson et al. (2010: 299) argue that citizens (and other stakeholders) should be included as active participants in the development process rather than simply seen as passive receivers of the outcome. The rationality behind this is to understand "the needs, requirements, and challenges of future users in order to develop public e-services that will be used", since governments cannot "force usage in the same way as a private organization

can order employees to use a certain IT system" (Axelsson 2010: 315). Thus, the heterogeneity of user groups needs to be considered in order to anchor and implement these changes (Axelsson et al. 2013: 20) and to ensure equal rights with regard to the accessibility of services (Axelsson et al. 2010: 315).

To conclude, in the words of Yildiz (2007: 655), "technology is just a means to achieve e-government, which is a fundamental change in the way that governments do business with the stakeholders of government information and services". Thus, "e-government should not be simplified as technological matter" (Linnefell et al. 2014: 132; McNutt 2014), but rather it should be understood as an economic, social and cultural process. E-government produces benefits through the possibilities, capabilities and willingness of individuals, organizations and societies to invest in and utilize digital tools, as is demonstrated in this dissertation.

2.5 Synthesis of the theoretical part

The theoretical part of this dissertation analyses how digitalization gives rise to e-capital in relation to the capital conversion process in the realm of Bourdieusian neo-capital theory (Bourdieu 1986; Paper I). The dissertation examines digitalization and e-capital from the perspective of knowledge-based development, which has been essential in the generation of technological progressiveness and in emphasizing the significance of intangible forms of capital (beside tangible) in economic and social development. This synthesis recognizes the following three phases in the process of e-capital conversion: 1) investments, 2) utilization and 3) added value (Figure 3). The synopsis and the four individual papers examine these phases.

First, to foster digitalization and the emergence of e-capital, comprehensive investments are

required with respect both to operational environments, i.e. regions and countries as a whole, and to individuals, organizations and societies. For example the public and/or private sector need to make investments in physical information infrastructure in order for individuals, organizations and societies to be able access, adopt and use digital technologies (cf. Graham 2011: 220). Not only economic capital is needed but also human capital in terms of an educated workforce that can create and utilize new technologies. Cultural and social capital ensure functional relationships between different stakeholders and their willingness to value digitalization as a target for investment. Individuals, organizations and societies need to invest in different forms of capital, e.g. to invest in infrastructure and equipment, develop their skills and increase their interest in utilizing digital technologies. In short, all forms of capital are needed to "make digitalization" happen (Paper I, Paper IV).

Second, the "spillover effects" (Katz et al. 2014: 32) of the first phase of e-capital conversion form the activity that utilizes mass access, adoption and the use of digital technologies. New activities constantly emerge due to innovations in the utilization of digitalization. This phase of activity cannot be reached without the first phase (investments), and thus, it is also closely related to different forms of capital. The target of action is not the technology itself but rather the activity that the technology enables. From a plethora of constantly emerging new activities (e.g. different e-services and practices, applications for different purposes etc.), this dissertation examines social media (Paper II), teleworking (Paper III) and e-government (Paper IV).

Third, the e-capital that emerges from *the possibilities, capabilities and willingness of individuals, organizations and societies to invest in and utilize digitalization results in added value* that would be unavailable without
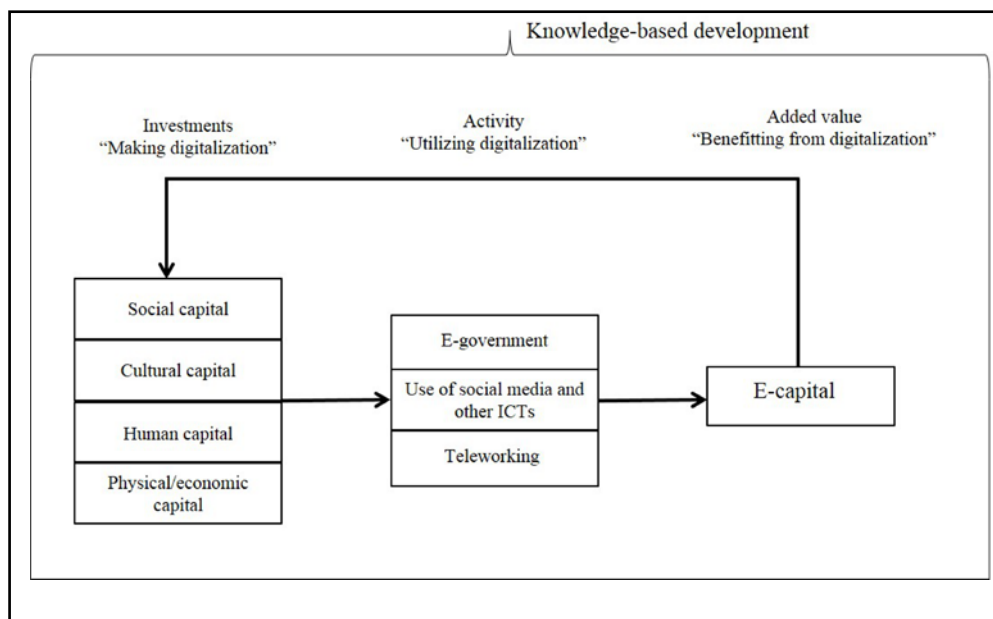
Figure 3. Synthesis of the theoretical foundation of the dissertation.

digital technologies or would be significantly more difficult to attain in any other way. Since, as Bourdieu (1986) argues, the capital conversion process is continuous, e-capital also converts back into other forms of capital. This can potentially result in cumulative benefits and access to different forms of capital. However, the conversion process and the associated benefits are neither equally accessible nor the same for all. E-capital has the potential to manifest either as an advantage or a disadvantage, depending on the stakeholder group. All phases of the conversion process are dependent on the spatial and temporal restrictions included within digitalization.

3 Data and methods

3.1 Survey for residents in the Helsinki metropolitan area

In papers II and III the data were collected by a postal survey sent to residents in the Helsinki Metropolitan Area (HMA) on January 2010 (Figure 4). The HMA, the leader in knowledge-based urban development in Finland (Yigitcanlar et al. 2015), has been and remains the leading area also in terms of individuals' adoption and use of ICTs in comparison to other regions in Finland (Appendix 1; Official Statistics of Finland 2016). Graham (2013) argues that cities have several digital layers that are intertwined with the material dimension. He argues that it is important to study the "hidden dimensions/ power-relations" related to the ways people utilize digital possibilities in cities (Graham 2013: 17). This survey follows previous studies of ICT use in city contexts (e.g. Crang et al. 2006; Inkinen 2006) as well as studies focused on teleworking (e.g. Pyöriä 2003; Helminen & Ristimäki 2007). The survey provides a unique dataset and new geographical knowledge on the differing use of social media and other ICTs and teleworking in the Helsinki Metropolitan Area.

Surveys, of which this survey is no exception, generally investigate individuals who (like the variables used) are picked for specific research purposes in order to follow theoretical perspectives. Data are gathered using questionnaires that demand the cooperation and knowledge of the individuals concerned in order to conduct the research (Galtung 1967: 148). Even though a survey targets individuals, the (general) aim of a survey is to understand the behaviour of a larger population (Babbie 1973: 46) and to produce numerical data, i.e. statistics about a population (Fowler 2002; Marsh 1982). Thus, surveys are at the same time both specific and general (Babbie 1973: 47).

Despite of the solid position of surveys in history and in contemporary academic research (e.g. Weisberg et al. 1989), they have also attracted criticism from some scholars (e.g. Galtung 1967; Marsh 1982). Galtung (1967) identifies five fundamental flaws in surveys: they are 1) too static, as "a survey yields manifest verbal reactions at one point in time, nothing more"; 2) surveys are too individualistic, as they ignore the heterogeneity of society; 3) surveys are too democratic, since "public opinion" is used both as indicator of the individual and of society; 4) surveys are restricted to a middle range of social positions, as 5) they work only across relatively narrow social distances (Galtung 1967: 150–158). Nevertheless, such criticism does not signify that researchers should abandon survey research; rather, they should be aware of the potential pitfalls and try to solve these problems in the study design (De Vaus 2002). Careful consideration of essential methodologies such as sampling, designing questions, and data collection (Fowler 2002) are needed in order to tackle these issues.

The data gathered by a survey are generally collected from a small proportion of the population, a sample, rather than from every individual in the population (Fowler 2002). First, the scope of the population, and a sample frame, i.e. a definition of the elements of a population, need to be defined. The actual sample is then selected from within the sample frame (De Vaus 2002; Fowler 2002). In this study, the definition of the sample frame follows the theoretical perspective of the digital divide in an urban context (e.g. Crang et al. 2006; Inkinen 2006).

The sample design employed by this study allows the examination of the relationship between the use of ICTs and socioeconomic differences in different residential districts in the HMA. Three case region types were formed:

Figure 4. The study area (papers II and III), the Helsinki Metropolitan Area. Background map © The City Survey Division of Helsinki, municipalities of Greater Helsinki, HSY 2015.

case region type I consisted of the city centre of Helsinki, which is an economically, culturally and socially significant core area on a regional, national and European scale (Figure 4, Table 2). The two other case region types represented different suburban types: Allardt's (1976) theory of maximal disparity and similarity was followed to form case region types that differed as much as possible from each other in relation to levels of tertiary education and owner-occupied housing, average incomes, and the proportion of housing accounted for by apartment blocks. In brief, case region type II consisted of five residential districts with a higher socio-economic profile than the HMA average, and case region type III comprised three districts with a lower socio-economic profile than the HMA average. This research set ensured that the survey could examine the use of ICTs in relation to the socioeconomic disparities between different region types in the HMA (cf. Galtung 1967).

The target population was chosen as 18–60-year-old Finnish-speaking residents, in order to reach the working population, as the survey included questions concerning working life. In addition, this choice was made to save translation costs. The sample consisted of a total of 2500 individuals. The sample was stratified in relation to the population size of each research district (Table 3) to gain a sufficient number of respondents from each case region type (cf. Galtung, 1967). Random sampling was used to select the individuals from each research district (e.g. De Vaus 2002: 71). The Population Register Centre performed the random sampling. Two postal rounds (the survey was re-posted for those who did not respond during the first postal round) raised the response rate to 39 per cent. An electronic form (instead of a paper form) was chosen by 14 per cent of respondents. In total, 971 residents participated in the survey (Table 3). This response rate compares favourably to other surveys conducted in Finland during the last decade: Inkinen (2001) gained a 43 per cent response rate from the Turku region and Inkinen and Kuru (2004) 53.1 per cent from the Tampere region in surveys investigating similar topics to this survey.

The questionnaire form included questions probing the use of ICTs, social media and electronic services and questions concerning the knowledge intensity of work and telework (Table 4). The questionnaire included 49 structured questions and 8 open questions. The questionnaire form took approximately 15–25 minutes to complete. The questionnaire form

Table 2. The characteristics of the residential districts in 2007 (Helsingin seudun aluesarjat 2009; Paper II).

	Tertiary educated population, (%)	Share of population living in owner-occupied houses, (%)	Share of apartment blocks, (%)	Average income, (€/year)
Case region type I	**46**	**41**	**97**	**42 723**
Kampinmalmi	44	39	96	36 858
Vironniemi	49	44	96	43 203
Ullanlinna	46	42	97	50 041
Case region type II	**52**	**85**	**1**	**41 232**
Linnainen	47	93	0	44 326
Hannusjärvi	53	80	1	40 715
Kuurinniitty	57	88	0	44 042
Tillinmäki	51	88	0	42 056
Paloheinä	52	85	1	40 389
Case region type III	**24**	**33**	**79**	**22 372**
Suvela	25	36	72	22 716
Ylä-Malmi	23	36	95	21 880
Asola	22	20	67	22 230

was tested by 20 volunteers prior to the survey being posted. The primary aim of this survey was to produce quantitative data and to study the relationships and distributions between the chosen variables (Punch 2003).

The data gathered are considered biased if some group is over- or under-represented in a survey. Statistical adjustments, i.e. weighting, corrects such a bias (e.g. Hoinville & Jowell 1978: 64; Babbie 1973: 106; De Vaus 2002: 70). It was possible to adjust the data according to age and sex, since the cities of Helsinki, Vantaa and Espoo provided the corresponding population data (for the 18–60 year-old Finnish-speaking population) from the districts studied (Appendix 3). These weighted data were used in the analysis of paper II. However, since other data corresponding to the other background variables from the study districts were unavailable, the other biases could not be adjusted. However, comparison with best available data suggests that the highly educated are slightly over represented in the data for case region types I and III. Other possible biases, such as household income levels, were impossible to estimate, due the lack of corresponding data (see Table 2 in Paper II).

Non-parametric statistical tests, which "are not based on assumptions about the parameters of the distribution", and thus, are used to study nominal and ordinal scale variables (Bailey 1987: 381), were used to analyse the data. Paper II uses "the most commonly used test of significance for independence" for nominal and ordinal variables, i.e. chi-square tests and crosstabs (Bailey 1987: 384; also e.g. Pierce 1970; Weisberg et al. 1989; Noether 1991) to analyse differences in the use social media between the different case region types. Furthermore, crosstabs and chi-square tests were used in paper III to analyse the relationship between teleworking and the use of ICTs and social media.

A sum variable was formed for paper III to estimate the level of the knowledge intensity and creativity of work. The reliability of the sum variable was estimated by a Cronbach's α-test (Paper III). In paper III the Mann-Whitney U test, which is used to compare two groups in relation to (at least) an ordinal scale variable (Noether 1991; Kirk 2008) was used to examine the knowledge intensity and creativity of teleworkers and non-teleworkers. The sum variable and the Mann-Whitney U test were also used in paper II to analyse the connection between social media use and the knowledge intensity and creativity of work.

Despite the fact that the survey produced

Table 3. Sample sizes and response rates. *Population=18–60-year-old Finnish-speaking population 1.1.2010. (Helsingin seudun aluesarjat 2011).

	Population*	Sample size	Respondents	Response rate (%)
Case region type I	35 968	1 200	468	39.0
Case region type II	5 495	500	220	44.0
Linnainen	497	45	19	42.2
Paloheinä	3 174	285	124	43.5
Kuurinniitty	639	58	25	43.1
Hannusjärvi	868	75	40	53.3
Tillinmäki	512	37	12	32.4
Case region type II	10 633	800	283	35.4
Suvela	5 212	415	155	37.3
Ylä-Malmi	3 565	240	93	38.8
Asola	1 856	145	35	24.1
Total	104 192	2 500	971	38.8

unique data, it also had some limitations. For example, due to the uniqueness of the data, possible biases could not be adjusted for, with the exception of age and sex, due to a lack of comparable statistics. However, the best available statistics were used in order to estimate where potential biases lay. Second, the survey provided quantitative rather than qualitative information; therefore the data gathered produced shallow rather than in-depth knowledge. However, the value of the data lies in the relatively large number of respondents, which was achieved by sending the survey a second time to those who failed to answer after the first posting. The third limitation concerns time: the survey was a "sample" from a population at a certain time. Nevertheless, comparison of the spatial division between citizens' ICT use in the HMA and other regions in Finland in 2010 and 2015 indicates that individuals' ICT use had already reached maturation by 2010 (Official Statistics of Finland 2016, see Appendix 1), thereby increasing the validity of the survey results.

Table 4. Summary of the questionnaire form, q=question number. The scale of the variables: N=nominal, O=ordinal, I=interval, R=ratio, Op=open question. (See the entire form in Appendix 2).

Basic information:
Gender (q1, N), Birth year (q2, N), Size of the household (q3, N), Number of children < 18 years old (q4, N)
Background information relating to the socioeconomic position of the respondents:
Basic educational level (q50, N), Educational level (q51, N), Profession (k52, N), Postal code (q53, N), Type of dwelling (q54, N), Housing form (q55, N), Household incomes €/year (q56, N)

The use of information and communication technologies (ICTs) and social media:
ICTs: ICT equipment in the household (q5, N), Possibility of using ICTs (q6, O), Time used on ICTs (q7, N), Time used on the Internet according to purpose of use (q8, N), The most important purposes of the use of the Internet (q9, Op)
Social network sites: Use of different SNSs (q10, N), Reasons for SNS use (q11), Opinions on SNS use (q12, O), Negative feelings related to SNS use (q13, Op)
Discussion forums: Following of discussion forums (q14, N), Participation in discussion forums (q15, N), Number of discussion forums followed (q16, N), Frequency of participation in discussion forums (q17, N), Significance of discussion forums (q18, Op)
Blogs: Following of blogs (q19, N), Frequency of following blogs (q20, N), Own blog (q21, N), Reasons for having a blog (q22, Op), The frequency of updating one's own blog (q23, N)

Electronic services:
Public e-services
Use of the city's website (q41, N), Use of the website of the residential area (q42, N), Hometown e-services (q43, N), Use of public e-services (q45, N), Use of e-services (q46, N), Use of some other e-services (q47, Op)
Private e-services
Internet in comparison to other services (q44, O), Use of private e-services (q46[a,b,d], N), Use of other private e-services (q47, Op)
Attitudes towards the use of e-services (q48, O; q49, Op).

Work, knowledge intensiveness and telework
Distance to work (km q24, R) (time q25, I), Means of transportation for commuting (q26, N), Size of the organization (q27, N), Employment (q28, N), Duration of contract (q29, N), Knowledge intensiveness of work (q30, O), Other factors relating to work (q31, Op)
Telework
Teleworking (q32, q33, N), Willingness to telework (q34, N), Physical place for teleworking (q35, N), Frequency of teleworking (q36, q37, N), Contractual arrangements for teleworking (q38, N), Reasons for teleworking (q39, N), Opinions about teleworking (q40, O).

3.2 Interviews for SADe programme stakeholders

In paper IV, the data were collected by interviewing the stakeholders of the SADe programme (i.e. the national E-services and e-democracy programme), which was initiated by the Finnish Government in 2009. The Ministry of Finance (MoF) financed and coordinated the programme for the period 2009–15. Six ministries (the MoF, the Ministry of Justice, the Ministry of the Environment, the Ministry of Education and culture, the Ministry of Employment and the Economy and the Ministry of Social Affairs and health/National Institute for health and welfare) conducted projects that concerned democracy and participation, education, the built environment and housing, entrepreneurship, healthcare and citizens advice. The projects produced over 40 e-services, ranging in extent from information sharing to more complex digital service paths. Several actors, including, for instance, the state authorities, municipalities, companies and private organizations participated in the programme. The total budget was 70 million euros, and the cost was divided equally between the state and municipalities (municipality funding was deducted from the state subsidy given to municipalities). In addition 4.6 million euros was budgeted to support the implementation of the services between 2013–2015 (Ministry of Finance 2015; Paper IV).

Semi-structured thematic interviews were conducted during November and December 2012. The population interviewed were experts from key organizations (Mosley 2013: 19): programme/project managers and/or coordinators/advisors/online editors from the different projects (with the exception of one project) run at the ministries or subordinate institutes (Paper IV). A total of 15 interviewees were interviewed in seven group meetings (Frey & Fontana 1991). Most of the groups included 2 or 3 interviewees; however, one of the (main) interviews included just one person, and one additional interview included just one person. The interviews lasted from 45 minutes (the shortest) to 1 hour and 45 minutes (the longest). The interviews were recorded and transcribed.

The semi-structured interview method requires that the researcher prepares a list of questions or themes before the interview but allows interviewees to focus on the themes they feel significant and even to raise new themes regarding the interview topic (Longhurst 2010). In the interview, the researcher acts as an "instrument" who can make changes to the question list and is flexible, within the limits of the study topic, over the direction of the discussion (Galletta 2012: 75). During the interview, the significance of some themes may be accentuated and some diminished. Here, the original target for the interviews was to include the perspective of the public sector in the study. Moreover, the questions were designed to examine the relationship between these two stakeholders (citizens and public sector) in creating a digital society (e.g. Carter & Bélanger 2005; Axelsson et al. 2010).

The original interview themes were:

1. What are the implications of the programme for the efficiency of service provision and the potential for cost reduction for both the supplier (public administration) and citizens as service users?

2. How is customer-driven service provision realized within the SADe programme and how is the principle of multichannel service provision advanced?

3. How do these goals (efficiency, cost reduction, multichannel service provision, and customer satisfaction) relate to current efforts in the development of end-user interfaces (e.g., Facebook, Twitter, and public sector platforms)

and citizens' ability to utilize these new platforms in terms of different socioeconomic groups?

4. What are the main elements of the SADe programme in the SWOT framework?

During the interview process, the first interview theme was given more prominence and the third theme less prominence than in the original plan (cf. Galletta 2012; Longhurst 2010). This was probably because the officials were primarily focused on their duty to manage the development projects and were thus more familiar with the first theme than with the third theme. Moreover, some of these projects created e-services for other public sector organizations (such as municipalities), which were in charge of implementing the created e-services.

The data were classified into themes originating from the original interview themes. Discourse analysis enabled the discovery of more themes. Discourse analysis, which emphasizes "word choices" (Dittmer 2010: 275) and examines "language-in-use" (Gee 1999: 7; cit. Dittmer 2010: 275), was used to identify the essential arguments that the officials used in the interviews (Braun & Clarke 2006). Some of the discourses identified (e.g. efficiency) were more obvious and originated from the original interview themes, but the analysis also revealed new discourses, such as positive environmental effects and improved transparency. A SWOT analysis was utilized to identify, classify and interpret the strengths, weaknesses, opportunities and threats of the programme (e.g. Hindle 2008). This analysis emerged from one of the interview themes and was deepened following the discourse analysis stage.

This research set also had limitations. The officials from the main SADe programme were interviewed, but they represented just part of the stakeholder groups related to e-government development, also in relation to the SADe programme, in the public sector. However, for all its limitations, this research produced valuable knowledge on the views of this core stakeholder group. Moreover, the interview themes could have been more comprehensive so as to include the role of other public organizations, such as municipalities, in the creation of a digital society. However, the data collected provided a valuable contribution to the study in relation to its goal of unravelling the processes of digitalization and the emergence of e-capital in society.

4 Summary of study results

4.1 Conceptualizing e-capital

4.1.1 Definition

My first research question concerned the way in which digitalization was intertwined with capital conversion and produced e-capital in the parallel dimensions of physical and digital space. In this study, e-capital was redefined with the help of Bourdieusian neo-capital theory as a form of intangible capital which emerges from *the possibilities, capabilities and willingness of individuals, organizations and societies to invest in, utilize and reap benefits from digitalization* (Paper I and III; Figure 5). Like other forms of capital, e-capital is also a process rather than a thing (Harvey 2010: 40). This process is intertwined with the capital conversion of tangible and intangible forms of capital, and thus, like other forms of capital, e-capital also produces added value within the continuous conversion process of different forms of capital (Papers I, II and III).

4.1.2 Conversion process

Digitalization is dependent on the physical capital (infrastructure, hardware etc.) of the information society. The existence of this physical capital in a physical space, as well as the economic potential to access it, creates *possibilities* for actors to receive e-capital from digitalization. Not only economic capital is required; other forms of capital are also needed. Human capital (related to education and skills, and here to *capabilities*) is required in order to utilize digital opportunities. To gain the potential added value, individuals,
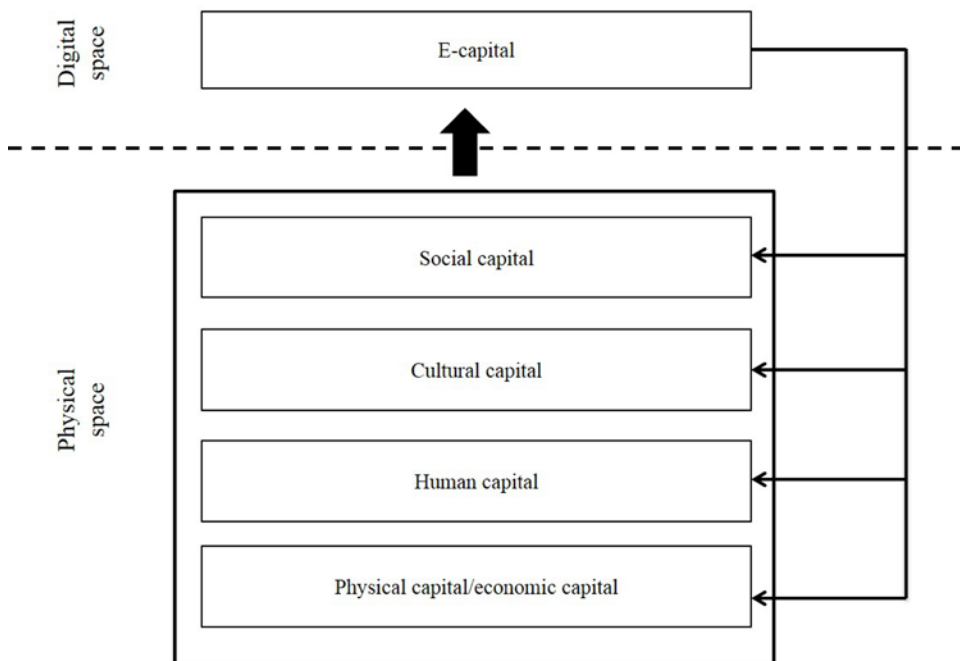

Figure 5. Conversion of e-capital and other forms of capital within the physical and digital dimensions of space (Paper I).

organizations and societies need to be *willing* to utilize digitalization. This refers to cultural and social capital. Put simply, investment in all forms of capital is needed in order to create e-capital and added value from digitalization.

The conversion process allows one form of capital to be converted into another (Bourdieu 1986). Thus, e-capital has the potential to be transformed into economic, human, social, cultural and physical capital. This enables new investments and cumulative benefits, such as increased productivity, improved capabilities and skills, a new digital culture, strengthened networks, new (big/open) data, increased democracy and transparency, as well as knowledge-based development and competiveness. These, in turn, can also be converted into other types of capital, e.g. the social capital that emerges in SNSs can be converted into economic capital on crowd funding platforms.

The emergence of e-capital is not, however, restricted to constructive activities; rather, it can promote the occurrence of both undesirable phenomenon, such as hate speech, and desirable phenomena, such as improved transparency. For example, the added value in terms of increased productivity that can be gained from digitalization is not a benefit for those workers who lose their jobs. Thus, the added value that digitalization produces can materialize as a benefit or a disadvantage for the different stakeholders: some may profit and others need to adjust. Moreover, digital technologies as such do not necessarily produce added value; rather, they are tools that need to be utilized in order for added value to be created (Paper I).

4.1.3 Spatiality

E-capital intertwines with the spatial system of capital conversion in the parallel dimensions of digital and physical space (Figure 5): e-capital

emerges in the digital dimension of space, as it is dependent on digitalization. However, it is dependent on the real-world physical space (places and regions) through the individuals, organizations and societies that possess varying amounts of different forms of capital and thus have varying possibilities, capabilities and willingness utilize digitalization. E-capital refers also to regions and countries as a whole, as they can invest in and create possibilities for digitalization and thus for e-capital. Some regions and countries "might be better equipped (capable) and more eager (willing) to promote this kind of development than others" (Paper I).

Since different forms of tangible and intangible capital are needed in order to create e-capital, e-capital is likely to emerge in similar locations to other forms of capital. E-capital has the potential to create "digital economies of scale", especially the "conversion of e-capital agglomerates in cities" (Paper I). Different forms of capital are spatially divided, resulting in spatial inequalities also in e-capital. The same logic pertains to individuals, organizations and societies: a lack of different forms of capital may result in a lack of e-capital. Conversely, individuals, organizations and societies, as well as regions and countries as a whole, can gain access to other forms of capital by investing in and utilizing digitalization, simply by "jumping into" the e-capital conversion process (Paper I).

4.2 E-capital in relation to the economic and socio-spatial urban features of digitalization in the Helsinki Metropolitan Area

The second research question concerned how e-capital was related to economic and socio-spatial urban features in the Helsinki Metropolitan Area (HMA). This question included two sub questions that were examined in papers II and

III: 2a) "How does the utilization of social media reflect socio-spatial differences between Helsinki city centre and the suburban areas in the HMA?" and 2b) "How are the utilization of social media and other ICTs related to teleworking and knowledge intensiveness and creativity in work in the HMA?"

Paper II considered how citizens' use of social media reflected socio-economic and spatial differences between Helsinki city centre and two case region types (suburban areas) that differed from each other in relation to their socioeconomic position, particularly in terms of educational level and household income. Paper II demonstrated that the share of social media users and their reasons for using these services varied in different areas of the HMA: First, the use of social media (the proportion of users), i.e. the use of (any) social networking sites (SNSs), blogs and discussion forums, was clearly higher in the city centre than in the suburban areas. Second, a comparison of different social network sites (Facebook, LinkedIn) revealed that Facebook, which is the most popular of these services in all the case region types examined, was almost as popular (among SNSs users) in the city centre as in lower socioeconomic suburban areas (LSAs) but that it was clearly less popular in higher socioeconomic suburban areas (HSAs). Moreover, the use of blogs and discussion forums was more common in LSAs than in HSAs. Conversely, the use of LinkedIn was clearly more popular in HSAs than in SLAs or in the city centre.

A statistically significantly larger proportion of residents in the city centre and LSAs valued social networking sites as important channels for their social networking as compared to residents in HSAs. In fact, the use of SNSs for networking with friends (which was the most common reason for SNS use in all case region types) was most common in the city centre and almost as common in LSAs. In contrast, it was clearly less common in HSAs. Conversely, the use of SNSs for professional networking purposes was most common in HSAs and almost as common in the city centre, whereas the use of SNSs for this purpose was decidedly less common in LSAs. The study demonstrated that higher levels of education and income clearly explain the use social media for professional networking.

These disparities in the use of social media reflect disparities in residents' e-capital. This also suggests disparities in the added value that the users gain from social media use. Residents in HSAs more often gain bridging social capital (professional networking) from their use of SNSs than do residents in LSAs. In contrast, residents in LSAs more often gain bonding social capital (networking with friends) from their use of SNSs than do residents in HSAs, even though residents in HSAs are in a good position to gain both forms of social capital through their SNS use. These differences matter, since different forms of social capital provide a different kind of added value to those who possess them: bonding social capital reinforces strong ties that, for example, relate to solidarity and cohesion, whereas bridging social capital strengthens weak ties that, for instance, relate to new information that is important in terms of individuals' access to new opportunities (Granovetter 1973, Woolcock & Narayan, 2000).

Economic and human capital (income and education levels) explains differences in the use of social media with respect to LinkedIn and the use of other SNSs for professional networking. Since the use of social media is most common in the city centre, it is evident that besides economic and human capital, social and cultural capital also affects the use of social media (Paper I). The results indicate that different groups of people utilize social media for different purposes and thereby gain a different kind of added value. In line with paper I, paper II indicates that those

with a high amount of different forms of capital, such as those with a higher education and high incomes, have the potential to gain progressive benefits by utilizing digitalization.

The results of paper II are confirmed in paper III, which studied the relationship between teleworkers and social media and other ICT use. Paper II also examined the connection between the use of social media and knowledge intensiveness and creativity in work in the Helsinki Metropolitan Area. Paper III demonstrated that that teleworkers clearly had a higher level of education and were more knowledge intensive and creative in their work than non-teleworkers, thereby showing that teleworking was an aspect of knowledge-intensive and creative work. In the HMA, teleworking is more likely to be part-time and mobile rather than a full-time, home-anchored practice: every fourth (25 %) respondent represented the former group and only four percent the latter practice of teleworking (cf. Pyöriä 2003; Helminen & Ristimäki 2007; Kepsu & Vaattovaara 2008; Elldér 2015).

Paper III demonstrated that teleworkers' use of social media and other ICT was higher than non-teleworkers to a statistically significant degree. This included the use of hardware, i.e. laptops, software, i.e. the Internet, e-mail and SNSs (including LinkedIn and Twitter but excluding Facebook). In addition, teleworkers were clearly more active in using SNSs for professional networking purposes than were non-teleworkers. The same pattern of social media use was also found for knowledge intensiveness and creativity in work: LinkedIn and Twitter users (but not Facebook users) and those using SNSs for professional networking were engaged in more knowledge intensive and creative work than those who did not use these services (Paper II).

In brief, this dissertation demonstrates that

teleworkers utilize ICT and social media for business and professional reasons more than do non-teleworkers (Paper III) and that the use of social media for these purposes is connected to knowledge intensiveness and creativity in work (paper II). Thus, the specific assets of (knowledge-intensive and creative) teleworkers, such as a higher level of education and social networking skills, are related to the utilization of social media and other ICTs. This indicates the relevance of e-capital for the HMA through its educated, knowledge intensive, creative and teleworking work force.

4.3 E-capital in the e-government discourse within the national SADe programme in Finland

The third research question concerns how e-capital appears in the e-government discourse within the national E-services and e-democracy (SADe) programme in Finland. This question was addressed by paper IV, which analysed discourses on the development of the SADe programme. Three main discourses were identified: 1) efficiency, productivity, and cost reduction, 2) e-government as a tool for improving democracy and participation and 3) the potential for the cross-sectional transformation of government. In addition, these three principal discourses included a group of other discourses such as a) positive environmental effects, b) improved accessibility of services and c) increased transparency of governance.

The paper IV demonstrated that the efficiency, productivity and cost reduction discourse was a fundamental rationalization that stemmed from the Government's policy programme and was thus implemented in the SADe programme: the developers of SADe evidently had a strong mutual agreement on the positive connection between the development of e-services and e-democracy and cost savings,

efficiency and productivity. These benefits were argued to emerge, for instance, from enhanced data management, the release of working hours from routine to high skilled tasks and new and enhanced processes. These economic premises of efficiency, productivity and cost reduction were not solely seen to concern the public sector (e.g. regional agencies or municipalities); rather they were also considered to produce positive economic effects for the end users of the e-services through a decrease in the need to travel and increased time savings. These, in turn, were related to the additional discourses of the positive environmental and spatial effects of e-government through the improved accessibility of services.

In addition to its direct economic premises, a powerful impetus for the initiation of the SADe programme was the goal of improving democracy and participation. This goal included, for example, increasing citizens' participation in planning processes and policy formulation, encouraging citizens' feedback on public services and increasing the transparency of governance. These aims were argued to have the potential to increase the transfer of knowledge from citizens to government officials and organizations. These goals were not only expected to promote inclusion and enhancement of democratic processes but also to have potential indirect economic effects through early information sharing and the participation of citizens and other organizations in planning and development processes, thus decreasing the number of complaints. However, it was noticed by developers that attaining these goals requires that the relevant authorities not only use new (technological) applications but also change their practices in the direction of participatory planning and a development culture.

Third main discourse was recognized to be the potential for cross-sectional transformation of government. This concerned both horizontal and vertical governance, as from the end users' perspective the categories of municipal and state services were considered to form a continuum. The developers emphasized the customer-first approach, a single platform, integration of several public authorities into the same portal and participatory design in service development. This contributed to novel ways of renewing governance in a more customer-oriented direction. The programme also increased sectoral collaboration and used collaborative models on service design. However, the use of social media services, e.g. Facebook, as development platforms had the potential to exclude those who do not use these services.

The SAD programme addressed the need to increase e-government in Finland. It developed e-services and democracy by digitalizing existing services and creating original digital-based services. The programme had a strong top-down design and it was mainly driven by a technological paradigm: while the perspective of citizens was included as a feedback channel, wider societal considerations on such topical questions as education, well-being, and quality of life through better governance and services "were subordinated to the technological development paradigm and the search for efficiency" (Paper IV).

To conclude, the development and especially the implementation of e-services requires that governments develop and change their own functionalities. The development of e-government demands an understanding of both cultural and technological change in organizations. In addition, it requires changes in end-users' behaviour. Thus, the development of e-government is far more than creating new software. In fact, the development of e-government should be understood as an economic, social and cultural process related

to the varying possibilities, capabilities and willingness of individuals, organizations and societies to invest in and utilize digital tools (Paper I). Simply put, e-government "challenges the whole ideology of conducting governance" (Paper IV).

5 Conclusions and policy implications

Digitalization is a phenomenon that is expected to produce benefits for societies, organizations and individuals. This dissertation has provided a framework in which to examine how, where and to whom such benefits materialize. This study presented the idea of examining the benefits of digitalization in relation to the neo-capital conversion process originally introduced by Pierre Bourdieu. The concept of e-capital was redefined and applied to the study of digitalization. The dissertation defined e-capital as a process that results in *added value* and that emerges from *the possibilities, capabilities and willingness of individuals, organizations and societies to invest in, utilize and reap benefits from digitalization*. In this process, all forms of capital are both needed and produced. The HMA and Finland provided an interesting platform for examining and learning from digitalization. From the findings of the study the following conclusions and policy implications can be drawn:

First, the simple and primary motivation for advancing digitalization in societies is the fact that it matters: digitalization can provide e-capital and result in added value that could not be gained or would be significantly more difficult to gain without digital technologies. However, from a societal perspective, the process through which benefits can be achieved is far from simple, and it should be thoroughly understood in order to ensure the best possible outcomes. Alongside technological considerations, a wide range of economic, social and cultural factors should be considered by public bodies in their pursuit of a digital economy and society.

Second, development practices should be driven by actual end-user needs. A top-down design may lead to problems in the achievement of the desired benefits if the commitment of end-users or other stakeholders fails. Moreover, the desired benefits do not materialize solely through the production of new innovative technological solutions; rather, they arise from comprehensive implementation. This process is dependent on individuals, organizations and societies, which possess varying amounts of different forms of capital and thus vary in terms of their possibilities, capabilities and willingness to implement new digital tools.

Third, realistic goal setting is needed in order to avoid over optimistic expectations. Knowledge of the direct and indirect effects and benefits and disadvantages of digitalization should be unravelled and discussed. In general, it should be acknowledged that digitalization does not produce equal benefits for all stakeholders. For example, the added value gained from digitalization may appear as an advantage to the service provider organization (e.g. in the form of cost reductions, increased efficiency, etc.) and for end-users who save time by consuming online services regardless of physical location. The result is very different for workers who lose their jobs or individuals who lack the ability or opportunity to utilize online services. If these negative dimensions are overlooked, it is likely that resistance to the adoption of digital technologies will occur and the potential benefits may remain unattained.

Fourth, spatial and social inequalities in relation to the benefits gained from digitalization need to be further recognized at different spatial levels. This dissertation demonstrated that different forms of capital are needed in order to create e-capital from digitalization. Thus, e-capital is likely to emerge in the same locations as other forms of capital. In addition, the conceptualisation of e-capital indicated that jumping into the e-capital conversion process

potentially gives access to other forms of capital. This should motivate individuals, organizations and societies, as well as regions and countries as a whole (including the public bodies supporting them) in their digitalization processes.

Further research is needed to better understand and thus advance the economic and societal progress of digitalization. First, it is essential to analyse and map out the realistic potential benefits of digitalization in order to avoid the trap of blind trust in positive outcomes. Second, knowledge of the possible disadvantages of digitalization should be acknowledged, examined and discussed. Third, an understanding of the investments required for better allocation of (public) resources is needed. Fourth, spatial and social inequalities of digitalization need to be examined. To conclude, more critical and empirical research on how, for whom and where the benefits of digitalization materialize is required. The framework of e-capital conversion presented in this dissertation offers tools for future studies to unravel these questions.

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Appendices

Appendix 1. Spatial division of the citizens' ICT use between the HMA and other regions in Finland in 2010 and 2015 (Official Statistics of Finland 2016).

	HMA		Big cities*		Other urban municipalities**		Semi-urban or rural municipalities***	
	2010	2015	2010	2015	2010	2015	2010	2015
Have a computer at home, (% of households)	91	88	82	82	84	83	75	77
Have the Internet at home, (% of households)	89	89	81	82	83	84	73	77
Have broadband via mobilephone 3G/4G subscription, (% of households)	26	68	15	63	12	64	8	55
Using the Internet daily or almost daily, (% of population)	85	88	75	78	72	78	63	72
Using the Internet for e-banking, (in last 3 months, % of population)	86	89	79	83	76	81	69	73
Using the Internet for reading online newspapers, (in last 3 months, % of population)	85	85	80	78	74	78	65	73
Using the Internet for searching information of goods and services, (in last 3 months, % of population)	85	85	75	77	74	76	65	71
Have registered on some social media service	58	68	45	63	40	54	30	46

* Big cities = cities with over 80 000 inhabitants, excl. the HMA. **Other urban municipalities = municipalities in which at least 90 % of inhabitants live in population centres or the biggest population centre has at least 15 000 inhabitants, excl. the HMA and big cities. ***Semi-urban and rural municipalities = semi-urban: municipalities in which at least 60 % but under 90 % of the inhabitants live in population centres and the biggest population centre has at least 4 000 but under 15 000 inhabitants; rural: municipalities in which under 60 % of the inhabitants live in population centres and the biggest population centre has under 15 000 inhabitants and municipalities in which at least 60 % but under 90 % of the inhabitants live in population centres and the biggest population centre has under 4 000 inhabitants.

HELSINGIN YLIOPISTO

PÄÄKAUPUNKISEUDUN TIETOYHTEISKUNTATUTKIMUS 2010

Arvoisa pääkaupunkiseudun asukas,

Teidät on valittu satunnaisotannan perusteella Helsingin yliopiston maantieteen osastolla suoritettavaan tutkimukseen, jossa selvitetään Internetin käytön sisältöä, tietotyön ominaispiirteitä sekä suhtautumistanne sähköisiin palveluihin. Vaikka ette käyttäisi Internetiä, pyydän teitä vastaamaan kyselyyn. Vastauksenne on erittäin tärkeä tutkimuksen mahdollisimman laaja-alaisen kattavuuden saavuttamiseksi.

Toivon, että vastaatte oheisen kyselylomakkeen kysymyksiin ja palautatte lomakkeen oheisessa kirjekuoressa noin kahden viikon sisällä lomakkeen vastaanottamisesta. Vastauskirjeen postimaksu on maksettu valmiiksi. Vastaukset käsitellään ehdottoman luottamuksellisesti eikä vastaajien henkilöllisyys tule tutkimuksen missään vaiheessa ilmi. Kyselyyn vastaamiseen kuluu noin 15–25 minuuttia.

Vaihtoehtoisesti voitte myös täyttää lomakkeen Internetissä osoitteessa https://elomake.helsinki.fi/lomakkeet/19760/lomake.html. Jos täytätte lomakkeen Internetissä, teidän ei tarvitse lähettää paperista vastauslomaketta. Internetissä vastatessa tarvitsette vastauskirjekuoresta vastaajanumeron. Vastaajanumero on merkitty osoitekenttään Info-riville sulkeisiin, ja se koostuu neljästä numerosta. Alla olevassa esimerkissä nuoli osoittaa tarvitsemanne numeron paikan:

Esimerkki vastauskirjekuoren osoitekentästä:

VASTAANOTTAJA MAKSAA POSTIMAKSUN
Helsingin yliopisto
Geotieteiden ja maantieteen laitos
Info: Merisalo, Maria (0323)
Tunnus 5018313
00003 VASTAUSLÄHETYS

Tutkimus on osa Suomen Akatemian rahoittamaa ”*Geography and Innovative Competitiveness? Finnish Knowledge Regions in European and Global Economy”* -tutkimushanketta. Lisätietoa tutkimuksesta saa minulta tai Internetistä osoitteesta http://blogs.helsinki.fi/mmerisal.

KIITOS AVUSTANNE!

Ystävällisin terveisin,

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Pääkaupunkiseudun tietoyhteiskuntatutkimus 2010

Vastatkaa esitettyihin kysymyksiin rengastamalla sopivinta vaihtoehtoa vastaava numero tai kirjoittakaa vastauksenne sille varattuun tilaan.

Yleistiedot

1. Oletteko
    1) Nainen
    2) Mies

2. Syntymävuotenne?   19____

3. Kuinka monta henkeä kotitalouteenne kuuluu?   _____henkeä

4. Kuinka monta perheenjäsenistänne on alle 18-vuotiaita?   _____henkeä

Osa I: Tietotekniikan käytön määrään ja sisältöön liittyvät kysymykset

5. Mitä seuraavista laitteista kotitaloudessanne on käytössänne?
(Lukekaa mukaan myös työnantajan tai muun kuin itsenne omistamat laitteet, jotka ovat käytössä kotitaloudessanne).

	Kyllä	Ei	Kuinka monta kappaletta
Pöytämallinen tietokone	1	2	_____
Kannettava tietokone	1	2	_____
Televisio	1	2	_____
Tallentava digivastaanotin (digiboksi)	1	2	_____
Tallentava DVD-soitin (television yhteydessä)	1	2	_____
Digitaalinen videokamera	1	2	_____
Digitaalinen kamera	1	2	_____
Mp3-soitin	1	2	_____
Lankapuhelinliittymä	1	2	_____
Matkapuhelin/kännykkä, jossa ei ole Internet-yhteyttä	1	2	_____
Matkapuhelin/kännykkä, jossa on Internet-yhteys	1	2	_____
Langaton Internet-yhteys	1	2	
Internet-yhteys (langallinen)	1	2	

Henkilökohtaiseen tietotekniikan käyttöön liittyvät kysymykset

6. Millaiset mahdollisuudet teillä on mielestänne

	Erittäin hyvät	Melko hyvät	Ei hyvät eikä huonot	Melko huonot	Erittäin huonot	En osaa sanoa
hankkia itsellenne tai perheenjäsenillenne uusia viestintä- ja tietoyhteyslaitteita?	1	2	3	4	5	6
käyttää viesintä- ja tietoyhteyslaitteita niin paljon kuin haluatte?	1	2	3	4	5	6
oppia käyttämään uusia tietoteknisiä laitteita?	1	2	3	4	5	6

7. Kuinka paljon käytätte tietotekniikkaa seuraavien asioiden osalta (arvioikaa työ- ja yksityiselämässä yhteensä)?

Rengastakaa yksi vaihtoehto kustakin sarakkeesta.

	Televisio	Puhelin (puhuminen ja muu käyttö yhteensä)	Pöytämallinen tietokone
En ollenkaan	1	1	1
Harvemmin kuin kerran kuussa	2	2	2
Noin 1 - 2 kertaa kuussa	3	3	3
Noin kerran viikossa	4	4	4
Monta kertaa viikossa	5	5	5
Päivittäin alle tunnin	6	6	6
Päivittäin 1 - 3 tuntia	7	7	7
Päivittäin 4 - 8 tuntia	8	8	8
Päivittäin yli 8 tuntia	9	9	9

	Kannettava tietokone/ dock-asema	Internet-yhteys	Sähköposti
En ollenkaan	1	1	1
Harvemmin kuin kerran kuussa	2	2	2
Noin 1 - 2 kertaa kuussa	3	3	3
Noin kerran viikossa	4	4	4
Monta kertaa viikossa	5	5	5
Päivittäin alle tunnin	6	6	6
Päivittäin 1 - 3 tuntia	7	7	7
Päivittäin 4 - 8 tuntia	8	8	8
Päivittäin yli 8 tuntia	9	9	9

Jos ette käytä Internetiä, siirtykää kysymykseen 24.

8. Kuinka paljon keskimääräisesti käytätte Internetiä seuraaviin asioihin?

Rengastakaa yksi vaihtoehto kustakin sarakkeesta.

	Yhteisöpalvelu (esim. Facebook)	Messenger tai muu keskusteluohjelma	Verkossa pelaaminen (esim. Internetissä tai pelikonsolilla verkossa)
En ollenkaan	1	1	1
Harvemmin kuin kerran kuussa	2	2	2
Noin 1 - 2 kertaa kuussa	3	3	3
Noin kerran viikossa	4	4	4
Monta kertaa viikossa	5	5	5
Päivittäin alle tunnin	6	6	6
Päivittäin 1 - 3 tuntia	7	7	7
Päivittäin 4 - 8 tuntia	8	8	8
Päivittäin yli 8 tuntia	9	9	9

9. Kertokaa yhdestä kolmeen (1 - 3) teille tärkeintä asiaa, mihin käytätte Internetiä? _____
_____
_____
_____
_____
_____
_____
_____
_____

10. Jos käytätte jotain yhteisöpalvelua, mitä yhteisöpalvelua käytätte? (Rengastakaa kaikki ne palvelut, joita käytätte.) *Jos ette käytä mitään yhteisöpalvelua, siirtykää kysymykseen 14.*

     1) Facebook
     2) IRC-Galleria
     3) Twitter
     4) MySpace
     5) LinkedIn
     6) Muu, mikä?_____.

11. Miksi käytätte yhteisöpalvelua? (Rengastakaa kaikki ne syyt, jotka toteutuvat kohdallanne.) *Jos käytätte usemapaa kuin yhtä yhteisöpalvelua, vastatkaa ajatellen kaikkia käyttämiänne palveluja yhteensä.*

     1) Pidän yhteyttä ystäviini
     2) Pidän yhteyttä henkilöihin, joihin en muuten pitäisi yhteyttä
     3) Verkostoidun työhöni liittyvien henkilöiden kanssa
     4) Löytääkseni uusia tuttavuuksia
     5) Herättääkseni keskustelua minulle tärkeistä asioista
     6) Ajanvietteeksi
     7) Muita syitä, mitä_____
     _____
     _____
     _____
     _____.

12. Jos käytätte jotain yhteisöpalvelua, vastatkaa mitä mieltä olette seuraavista väittämistä. *Jos käytätte useampaa kuin yhtä yhteisöpalvelua, vastatkaa väittämiin ajatellen yhteisesti kaikkia käyttämiänne palveluja yhteensä.*

	Täysin samaa mieltä	Jokseenkin samaa mieltä	Vaikea sanoa	Jokseenkin eri mieltä	Täysin eri mieltä
Käytän palvelua säännöllisesti myös työajallani	1	2	3	4	5
Palvelu on minulle tärkeä vuorovaikutuskanava muihin ihmisiin	1	2	3	4	5
Käytän palvelua, koska haluan kuulua johonkin yhteisöön	1	2	3	4	5
Koin sosiaalista painetta liittyä palveluun	1	2	3	4	5
Palvelun käyttö on vähentänyt kännykän käyttöäni (puhumista) sosiaalisten suhteideni hoitamisessa	1	2	3	4	5
Palvelun käyttö on vähentänyt kasvokkain tapahtuvaa tapaamista muiden ihmisten kanssa	1	2	3	4	5
Palvelu on parantanut sosiaalista elämääni	1	2	3	4	5
Palvelun käyttö on aiheuttanut minulle negatiivisia tunteita (esim. ulkopuolisuuden tunne, jännitys, ahdistus)	1	2	3	4	5

13. Jos yhteisöpalvelun käyttö on aiheuttanut teille negatiivisia tunteita niin kuvailkaa halutessanne millaisia?

_____
_____
_____
_____.

14. Seuraatteko Internetissä ylläpidettäviä keskustelupalstoja (lukemalla tai kirjoittamalla)?   1) Kyllä
(Keskustelupalstalla tarkoitetaan kaikkia mahdollisia keskustelufoorumeja/-alueita, ei kuitenkaan   2) En
pikaviesti/chat -keskusteluja.)

Jos ette seuraa keskustelupalstoja, siirtykää kysymykseen 19.

15. Millä tavoin osallistutte keskusteluun?   1) Lukemalla keskusteluja
(Rengastakaa kaikki ne vaihtoehdot, jotka toteutuvat kohdallanne.)   2) Kirjoittamalla keskustelupalstalle
                                                     3) Muuten, miten?_____
                                                     _____.

16. Kuinka montaa keskustelupalstaa seuraatte?   1) Seuraan satunnaisesti eri palstojen keskusteluja
(Rengastakaa vain YKSI seuraavista vaihtoehdoista.)   2) 1 - 2 palstaa
                                                     3) 3 - 4 palstaa
                                                     4) 5 - 6 palstaa
                                                     5) 7 tai useampaa palstaa

17. Kuinka usein osallistutte (lukemalla tai kirjoittamalla) Internet-keskusteluun?
(Rengastakaa vain YKSI seuraavista vaihtoehdoista.)
                                                     1) Harvemmin kuin kerran kuukaudessa
                                                     2) Noin 1 - 2 kertaa kuussa
                                                     3) Noin kerran viikossa
                                                     4) Monta kertaa viikossa
                                                     5) Päivittäin alle tunnin
                                                     6) Päivittäin 1 - 3 tuntia
                                                     7) Päivittäin yli 3 tuntia

18. Mitä keskustelupalstat teille merkitsevät?_____
_____
_____
_____
_____

19. Seuraatteko blogia/blogeja?   1) Kyllä
                                    2) En

Jos ette seuraa blogia/blogeja, siirtykää kysymykseen 21.

20. Kuinka usein seuraatte blogia/blogeja?   1) Harvemmin kuin kerran kuukaudessa
(Rengastakaa vain YKSI seuraavista vaihtoehdoista.)   2) Noin 1 - 2 kertaa kuussa
                                                     3) Noin kerran viikossa
                                                     4) Monta kertaa viikossa
                                                     5) Päivittäin alle tunnin
                                                     6) Päivittäin 1 - 3 tuntia
                                                     7) Päivittäin yli 3 tuntia

21. Onko teillä oma blogi/blogeja?   1) Kyllä
                                                     2) Ei

Jos teillä ei ole omaa blogia/blogeja, siirtykää kysymykseen 24.

22. Jos teillä on oma blogi/blogeja niin, miksi päätitte perustaa blogin? _____
_____
_____
_____
_____
_____

23. Jos teillä on oma blogi/blogeja, kuinka usein päivitätte sitä/niitä? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

1) Harvemmin kuin kerran kuukaudessa
2) Noin 1 - 2 kertaa kuussa
3) Noin kerran viikossa
4) Monta kertaa viikossa
5) Päivittäin alle tunnin
6) Päivittäin 1 - 3 tuntia
7) Päivittäin yli 3 tuntia

Osa II: Työhön liittyvät kysymykset.

Jos ette ole ollut työelämässä viimeisen kahden vuoden aikana, siirtykää kysymykseen 41. Vastatkaa kysymyksiin nykyisen tai viimeisimmän (jos ette ole työelämässä tällä hetkellä) työpaikkanne perusteella.

24. Kuinka monta kilometriä on matka kotoanne töihin (yksi suunta)? Noin _____kilometriä.

25. Kuinka kauan kestää työmatkanne kotoanne töihin keskimäärin (yksi suunta)? Noin_____minuuttia.

26. Miten useimmiten kuljette työmatkanne pääasiassa? Jos esimerkiksi kuljette suurimman osan matkasta julkisella kulkuneuvolla ja pienen osan kävellen, vastatkaa julkisella kulkuneuvolla.
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

1) Jalkaisin
2) Pyörällä
3) Julkisen liikenteen kulkuneuvolla
4) Omalla autolla
5) Muuten, miten?_____.

27. Kuinka monta henkilöä työnantajanne työllistää

A) kokonaisuudessaan (huomioikaa koko konserni/organisaatio)?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)
1) Alle 10 henkilöä
2) 10 - 49 henkilöä
3) 50 - 249 henkilöä
4) Yli 249 henkilöä

B) oman työpaikkanne osalta (yksikkö/yritys)?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)
1) Alle 10 henkilöä
2) 10 - 49 henkilöä
3) 50 - 249 henkilöä
4) Yli 249 henkilöä

28. Onko työsuhteenne?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

1) Täysipäiväinen työsuhde
2) Osa-aikainen työsuhde
3) Harjoittelu tai oppisopimus
4) Muu, mikä?_____.

29. Millainen on työsuhteenne kesto?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

1) Pysyvä työsuhde
2) Määräaikainen työsuhde, jonka kesto on tasan tai yli 12 kk
3) Määräaikainen työsuhde, jonka kesto on alle 12 kk
4) Muu, tarkenna?_____.

30. Mitä mieltä olette seuraavista työhönne liittyvistä väittämistä?

	Täysin samaa mieltä	Jokseenkin samaa mieltä	Vaikea sanoa	Jokseenkin eri mieltä	Täysin eri mieltä
Teen työni pääasiassa tietokoneella	1	2	3	4	5
Työssäni tarvitsen itsenäistä päätöksen-tekotaitoa	1	2	3	4	5
Työssäni vuorovaikutustaidot ovat erittäin tärkeät	1	2	3	4	5
Työni on hyvin itsenäistä	1	2	3	4	5
Minulta odotetaan työssäni asiakas-palveluhenkisyyttä	1	2	3	4	5
Työssäni tiimityöskentely on olennainen osa työtä	1	2	3	4	5
Minulta odotetaan työssäni joustavuutta (esimerkiksi työajoissa)	1	2	3	4	5
Työni edellyttää luovuutta	1	2	3	4	5
Teen liikkuvaa työtä (esim. asiakastapaamiset)	1	2	3	4	5

31. Mitä muuta haluaisitte sanoa työstänne?
_____
_____
_____
_____.

32. Teettekö etätöitä? (Eli työtä, joka tehdään muualla, kuin varsinaisessa työpaikassanne ja pidätte säännöllistä yhteyttä varsinaiselle työpaikallenne).
 Huom! Kotona tehtävää ylityötä tai yksityisyrittäjän kotona tekemää työtä ei lasketa etätyöksi!
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) Kyllä
    2) En
    3) En tiedä

Jos teette etätöitä, siirtykää kysymykseen 35.

33. Jos ette tee etätöitä, niin voisiko mielestänne omaa työtänne tehdä etätyönä?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) Kyllä
    2) Ei
    3) En tiedä

34. Jos ette tee etätöitä, niin haluaisitteko tehdä etätyötä jos se olisi mahdollista?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) Kyllä
    2) En
    3) En tiedä

Jos ette tee etätöitä, siirtykää kysymykseen 41

35. Jos teette etätöitä, missä teette työtä? (Rengastakaa <u>kaikki ne vaihtoehdot</u>, jotka toteutuvat kohdallanne.)

     1. Kotona
     2. Vapaa-ajan asunnolla/mökillä
     3. Työmatkoilla (esimerkiksi matkustaessa asiakastapaamiseen)
     4. Muualla, missä?_____.

36. Jos teette etätöitä, kuinka paljon keskimäärin teette etätyötä? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

     1. 4 päivää tai enemmän viikossa
     2. Noin 2 - 3 päivää viikossa
     3. Noin päivän viikossa
     4. Päivän noin joka toinen viikko
     5. Päivän noin kerran kuukaudessa
     6. Harvemmin, kuinka usein?_____.

37. Jos jo teette etätöitä, haluaisitteko tehdä enemmän etätöitä? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

     1) Kyllä
     2) En
     3) En tiedä

38. Jos teette etätöitä, oletteko sopineet siitä työnantajanne kanssa kirjallisesti?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.) 1) Kyllä
     2) En
     3) En tiedä

39. Miksi teette etätöitä? (Rengastakaa <u>kaikki ne vaihtoehdot</u>, jotka toteutuvat kohdallanne)

     1) Työmatkani pituuden vuoksi

     2) Pystyn keskittymään paremmin kotona (tai muualla kuin varsinaisella työpaikallani)

     3) En viihdy työympäristössäni

     4) Pystyn sovittamaan työ- ja perhe-elämän paremmin yhteen

     5) Pidän etätyön mahdollistamasta vapaudesta ja joustavuudesta

     6) Muu syy, mikä_____
     _____.

40. Jos teette etätöitä, vastatkaa mitä mieltä olette seuraavista työhönne liittyvistä väittämistä?

	Täysin samaa mieltä	Jokseenkin samaa mieltä	Vaikea sanoa	Jokseenkin eri mieltä	Täysin eri mieltä
Olen tehokkaampi tehdessäni etätöitä kuin työskennellessäni varsinaisella työpaikallani	1	**2**	3	4	5
Etätöitä tehdessäni teen työtä useimmiten normaalin työajan puitteissa (kello 07.00 - 17.00 välisenä aikana)	1	2	3	4	5
Työni on haastavampaa tehdä etätyönä kuin varsinaisella työpaikallani	1	2	3	4	5

Kysymys jatkuu edelliseltä sivulta.	Täysin samaa mieltä	Jokseenkin samaa mieltä	Vaikea sanoa	Jokseenkin eri mieltä	Täysin eri mieltä
Etätöitä tehdessäni saan tarpeeksi tukea työni tekemiseen työnanatajaltani	1	2	3	4	5
Etätöitä tehdessäni yksityiselämääni ja työelämääni on vaikea pitää erillään toisistaan	1	2	3	4	5
Etätöitä tehdessäni en tunne kuuluvani työyhteisöön	1	2	3	4	5
Etätyöskennellessä tulee helposti tehtyä ylitöitä	1	2	3	4	5
Olen tehnyt etätyöskennellessäni töitä sairaana	1	2	3	4	5
Työni on stressaavampaa tehdä etätyönä kuin varsinaisella työpaikallani	1	2	3	4	5
Työni kärsii jos en ole jatkuvassa yhteydessä muuhun työyhteisööni	1	2	3	4	5

Osa III: Sähköisiin palveluihin liittyvät kysymykset

Jos ette käytä Internetiä, siirtykää kysymykseen 48.

41. Oletteko joskus käyttänyt Internetissä kotikaupunkinne kotisivuja?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)
1. Kyllä
2. En
3. En tiedä

42. Oletteko joskus käyttänyt Internetissä kaupunginosanne kotisivuja?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)
1. Kyllä
2. En
3. En tiedä

43. Ovatko kotikaupunkinne sähköiset asiointipalvelut mielestänne helposti löydettävissä Internetissä?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)
1. Kyllä
2. Ei
3. En tiedä

44. Miten usein hoidatte seuraavat asiat Internetin välityksellä verrattuna muihin tapoihin (sanomalehdet, televisio, kasvokkain tapahtuva asiointi, puhelinasiointi jne.)?

	Lähes aina Internetin välityksellä	Useammin Internetin välityksellä kuin muuten	Yhtä usein Internetin välityksellä kuin muuten	Harvemmin Internetin välityksellä kuin muuten	En juuri koskaan Internetin välityksellä
Luen uutisia	1	2	3	4	5
Hoidan pankkiasiani	1	2	3	4	5
Haen aikatauluja (linja-auto, juna, ym.)	1	2	3	4	5
Haen aukioloaikoja (kaupat, ravintolat, ym.)	1	2	3	4	5

45. Oletteko käyttänyt seuraavia sähköisiä asiointipalveluja?

	En tunne palvelua	Tunnen palvelun, mutta en ole käyttänyt sitä	Olen käyttänyt palvelua, mutta mieluummin käytän jotain muuta tapaa asian hoitamiseksi	Olen käyttänyt palvelua, ja mielestäni sähköinen tapa on kätevin tapa hoitaa asia
Tehnyt veroilmoituksen tai tilannut verokortin Internetin kautta	1	2	3	4
Hakenut päivähoito-, kerho- tai esiopetuspaikkaa Internetin välityksellä	1	2	3	4
Käyttänyt työ- ja elinkeino-toimiston Internet-sivustoa työnhakuun (www.mol.fi)	1	2	3	4
Ostanut julkisen liikenteen kertalipun kännykällä	1	2	3	4
Käyttänyt erilaisia hakupalveluja (esim. kirjaston tietokantahaku, YTV:n reitti-opas, jne.)	1	2	3	4
Tehnyt muuttoilmoituksen Internetin kautta	1	2	3	4
Tehnyt vakuutus-, sähkö-, tai vastaavan sopimuksen Internetin kautta	1	2	3	4
Käyttänyt Kela:n tarjoamia sähköisiä asiointipalveluja	1	2	3	4
Käyttänyt suomi.fi -sivustoa	1	2	3	4

46. Oletteko käyttänyt seuraavia sähköisiä asiointipalveluja?

	Kyllä	En
Käyttänyt Postin NetPost-palvelua	1	2
Käyttänyt nettihuutokauppaa (ostanut tai myynyt)	1	2
Käyttänyt julkisessa tilassa (esim. kirjastossa, linja-autossa, rautatientorilla) langatonta WLAN-verkkoa	1	2
Käyttänyt Internet-kauppaa (ostanut esim. matkalippuja, vaatteita tai muuta vastaavaa)	1	2

47. Mitä muita sähköisiä asiointipalveluja olette käyttänyt? _____

_____
_____
_____
_____.

48. Mitä mieltä olette seuraavista sähköisiin asiointipalveluihin liittyvistä väittämistä?

	Täysin samaa mieltä	Jokseenkin samaa mieltä	Vaikea sanoa	Jokseenkin eri mieltä	Täysin eri mieltä
Sähköiset palvelut helpottavat elämääni	1	2	3	4	5
Tulevaisuudessa käytän entistä enemmän sähköisiä palveluja	1	2	3	4	5
Mielestäni palvelut on saatava henkilökohtaisesti henkilöltä, ei Internetin välityksellä	1	2	3	4	5
Jos jonkin palvelun saisi tulevaisuudessa vain sähköisesti, en käyttäisi sitä	1	2	3	4	5
Mielestäni kotikaupunkini pitää kehittää sähköisiä palveluja	1	2	3	4	5
Olen halukas käyttämään sähköisiä palveluja ensisijaisena palvelumuotona	1	2	3	4	5

49. Mitä muuta haluaisitte sanoa sähköisistä asiointipalveluista?
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____.

Taustatietoja

50. Peruskoulutuksenne?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

1) Kansakoulu
2) Perus- tai keskikoulu
3) Osa lukiota
4) Ylioppilas
5) Ei peruskoulutusta

51. Ammatillinen peruskoulutuksenne?
(Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

1) Ei ammatillista koulutusta
2) Ammatillinen kurssi tai kursseja
3) Ammattikoulu
4) Opistotasoinen koulutus (sis. yo-pohjaiset)
5) Ammattikorkeakoulututkinto
6) Akateeminen lopputukinto (alempi/ylempi/jatkotutkinto)
7) Jokin muu, mikä?_____.

52. Pääasiallinen toimintanne tällä hetkellä? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) Johtavassa asemassa
    2) Ylempi toimihenkilö
    3) Toimihenkilö
    4) Työntekijä
    5) Yrittäjä tai yksityinen ammatinharjoittaja
    6) Maatalousyrittäjä
    7) Päätoiminen opiskelija
    8) Kotiäiti/koti-isä
    9) Eläkeläinen
    10) Työtön
    11) Muu asiantuntija-/taiteellinen tehtävä (esim. apurahalla työskentelevä yliopistotutkija, free lancer jne.)
    12) Muu, mikä? _____.

53. Postinumeronne?   _____

54. Asuntonne tyyppi? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) Kerrostalo
    2) Rivi- tai paritalo
    3) Omakoti- tai erillistalo
    4) Muu, mikä?_____.

55. Asumismuotonne? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) Omistusasunto
    2) Vuokra-asunto
    3) Muu, mikä?_____.

56. Kotitaloutenne yhteenlasketut vuositulot ennen veroja? (Rengastakaa vain <u>YKSI</u> seuraavista vaihtoehdoista.)

    1) 0 - 19 999 euroa
    2) 20 000 - 39 999 euroa
    3) 40 000 - 59 999 euroa
    4) 60 000 - 79 999 euroa
    5) 80 000 - 99 999 euroa
    6) 100 000 - 149 999 euroa
    7) Yli 150 000 euroa

57. Mitä muuta haluaisitte sanoa tähän kyselylomakkeeseen liittyen?

_____
_____
_____
_____
_____
_____
_____
_____.

KIITOS VAIVANNÄÖSTÄNNE!

Tutkimusta syvennetään vuoden 2010 aikana haastatteluilla. Sekä kyselyn että haastattelujen tulokset käsitellään ehdottoman luottamuksellisesti. Mikäli olette halukas osallistumaan tutkimuksen jatkovaiheessa haastatteluihin, jättäkää oheen yhteystietonne.

Nimi   _____
Osoite _____
_____
Puhelin   _____
Sähköposti _____

Appendix 3. Sampling weights (W=P/S). W=weight, P=population percentage, S=sampling percentage. Statistics contributed from the cities of Espoo, Helsinki and Vantaa on January 2010 (Espoon tietopalvelu et al. 2011).

| | Sex, (%) | | | | | | Age, (%) | | | | | | | | | | | |
| | Female | | | Male | | | 18 - 29 | | | 30 - 39 | | | 40 - 49 | | | 50 - 60 | | |
	Pop.	Resp.	W*	Pop.	Resp.	W*	Pop.	Resp.	W*	Pop.	Resp.	W*	Pop.	Resp.	W*	Pop.	Resp.	W*
Case region type I	52,8	53,8	0,981	47,2	46,2	1,023	34,3	30,3	1,130	27,6	31,4	0,879	19,1	18,8	1,016	19,0	18,8	1,009
Case region type II	50,9	59,1	0,861	49,1	40,9	1,201	16,1	10,5	1,538	22,3	20,0	1,114	33,1	35,5	0,934	28,5	34,1	0,836
Linnainen	50,9	47,4	1,075	49,1	52,6	0,933	17,7	5,3	3,364	15,5	15,8	0,981	35,4	42,1	0,841	31,4	36,8	0,852
Paloheinä	50,9	62,1	0,819	49,1	37,9	1,297	17,3	11,3	1,529	18,7	21,0	0,893	31,7	35,5	0,892	32,4	32,3	1,003
Kuurinniitty	50,9	64,0	0,796	49,1	36,0	1,363	13,5	8,0	1,683	33,3	32,0	1,042	36,9	36,0	1,026	16,3	24,0	0,678
Hannusjärvi	50,8	55,0	0,924	49,2	45,0	1,093	14,9	10,0	1,486	22,6	10,0	2,258	32,7	32,5	1,007	29,8	47,5	0,628
Tillinmäki	51,2	50,0	1,023	48,8	50,0	0,977	13,1	16,7	0,785	34,4	25,0	1,375	35,0	33,3	1,049	17,6	25,0	0,703
Case region type III	51,6	57,6	0,896	48,4	42,4	1,141	32,0	21,9	1,459	45,5	24,7	1,840	45,2	25,1	1,804	22,4	28,3	0,792
Suvela	50,3	59,4	0,848	49,7	40,6	1,222	32,2	24,5	1,314	24,6	23,2	1,060	22,1	24,5	0,903	21,0	27,7	0,758
Ylä-Malmi	53,3	55,9	0,954	46,7	44,1	1,059	32,7	18,3	1,791	20,6	29,0	0,711	21,4	24,7	0,867	25,2	28,0	0,901
Asola	53,3	54,3	0,982	46,7	45,7	1,022	29,5	20,0	1,476	24,5	20,0	1,223	23,1	28,6	0,807	23,0	31,4	0,730