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VIEWPOINT PAPER

# What seems to be the problem?—A study of connections between national contexts and regional e-health strategies

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#### **KEYWORDS**

Regional comparative study; e-health; Service-innovation; Research- and development strategies

#### **Abstract**

*Motivation*: Different e-health strategies may produce different long-term results, so it is of general interest to look into strategies behind e-health approaches, and what factors that influence strategy-formation.

*Problem statement:* Previous studies into process improvements in the e-health area has suggested that approaches and strategies are very dependent on national contexts. This study explores this issue, by sampling two national regions in Europe, the St. Gallen region and canton in Switzerland, and the Agder region comprised of the two Agder-counties, in Norway. The research questions revolve around the extent to which the context influences e-health innovation in two different European regions.

Approach: To throw light on the area of concern, the author performed a cross-sectional case-study into publicly known e-health research and innovation projects or implementation projects in the two regions at comparable level of analysis; transparent (public) collaborative projects with more than one autonomous partner, at least one being from the regions research-institutions or governmental bodies.

*Results*: This study reports that there were some different regional convergences within the mentioned framework. In general there seems to be a gap concerning studies around the extension of clinical systems into homecare in St. Gallen, and a gap concerning more cross-sectional, holistic studies in Agder.

*Conclusions*: This article summarizes by pointing out themes for further research that needs more attention, both in general and within each of the two contexts, as a recommendation to the research community. These themes may also have implications for practice.

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#### Introduction

This study aims to share light on how different contexts can influence different e-health strategies in service innovation and process improvement.

The overall idea is that different structural characteristics and different contingencies for problem solving may produce different problem-perceptions (hence the title), and henceforth; different e-health strategies although the underlying social challenges and technical possibilities are the same.

This study compares two European regions, representative for each respective country. Based on fairly alike living standards, one should expect that e.g. the wish for independent assisted living supported with welfare technology should be equal, and that this should be reflected equally in both countries e-health research strategies. But this study shows that this is not the case, and looks for possible explanations.

The article is outlined as follows: First the author gives the motivation and background for this area of research. This part of the article also gives an account of the framework used for analysis [1]. Second the author goes through the steps of data collection and methods for conceptualizing the finds. Thirdly the findings are analyzed, looking for (a) differences in the two contexts (b) differences in ehealth research and innovation strategies (measured as choice of research topic). The main findings is shown and illuminated. Lastly; in the discussion part, implications of the findings and possible explanations are discussed.

#### Motivation

The population is aging in many highly industrialized countries. As we generally live longer, and can survive more conditions than before, thanks to various improvements in treatments and living-standard, the issues of elderly care is becoming more closely linked to, and overlapping with the issues of care of cronical diseases, for a longer span of lifetime per patient. As well as being overlapping patient-groups, these groups are also candidates for receiving care supported by e-health technologies at home, as a sometime-alternative to more expensive inhospital treatments. With an aging population changing the ratio of available caregiving-personnel to care-receptors/acceptors, the growing needs particularly in elderly/chronic care is a driving force, and increasing focus area for e-health research and -innovation. Such innovation is often a collaborative, interorganizational effort. The significance of context for the transferability of research findings is an under-studied area in many research areas of process- and service-innovation, and e. g. Niehaves et al. [2] points to the need for doing more comparative studies.

The main research questions (RQ's) can be stated as:

RQ1. What are the main differences in context between the two regions with regard to healthcare? RQ2. To what extent does the context influence e-health innovation in two different European regions?

Regarding RQ2, a sub-question is to what extent the role of e-health technologies monitoring and care in home versus in-hospital, is subject of innovation in the two regions.

## Switzerland and Norway and their e-health initiatives

Switzerland and Norway have many similarities. Both countries have advanced businesses and a comparatively high standard of living. They are both relatively small countries in terms of population: Switzerland has around 8 million inhabitants. Norway has passed 5 million inhabitants (2014). Health expenditure in Switzerland and Norway is very similar: 5.643 USD Purchasing Power Parity - PPP - in Switzerland, USD 5.669 in Norway (2011). Only the United States has higher expenditure: USD 8.508. OECD average is USD 3.339 [3]. The density of general practitioners, measured as doctors per 1000 capita is comparable; 3,8 in Switzerland, 4,1 in Norway in 2010; OECD figures [4]. In both countries the government tries to reduce the number and lengths of hospital stays, as this is the most expensive kind of care, and move responsibility to primary health care and home care [5].

In the healthcare sector, there are some important differences in structures and financing. Most notable, while the Norwegian healthcare system is almost entirely publicly financed (by taxes etc.), Switzerland's healthcare system is semi-public, a mixture of publicly financed, e.g. health system infrastructure like hospital buildings, and privately financed services, e.g. obligatory health insurances paid by every citizen to a private insurance company. But there are also other differences, e.g. hospital distribution and coverage. Switzerland has 4,9 hospital-beds per 1000 inhabitants, Norway has 3,3 [6]. In both countries, e-health services and projects are developed to increase effectiveness and efficiency in healthcare, both aimed at private health and wellbeing, and improving health services delivery in hospitals and primary care.

The healthcare coverage is basically the same within the country, for any long terms residents, independently from the citizenship, in both Switzerland and Norway [7]. This study sheeds light on the connection between differences in structure, and differences in e-health service-innovation strategies by comparing two regions. The St. Gallen canton in Switzerland, and the two Agder counties in Norway.

The St. Gallen region in Switzerland and the Agder-region in Norway (Aust- and Vest-Agder) are two areas that are demographically comparable on the same scales as to population size and age-structure: The St. Gallen region (Canton) in Switzerland with a population of approx. 487.000 inhabitants in 2013 (Source: http://www.statistik.sg.ch/), and the Agder region in Norway (Aust- and Vest-Agder county) with a population of around 292.000 inhabitants Jan. 1th 2014 (source: https:// statbank.ssb.no/befolkning/). The St. Gallen canton covers 2. 026 square kilometers; the Agder region covers 16.344 square kilometers. They represent two healthcare systems with both interesting similarities and differences in the context of institu tions. When referring simply to "St. Gallen" for short in this article, the author here means the canton of St. Gallen (and not only its cantonal capital, the city of the same name, if not explicitly stated).

## Framework for categorization or conceptualizing of projects

For conceptualizing emergent e-health strategies, the author categorized the projects using a framework for

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