



# Assessing regional digital competence: Digital futures and strategic planning implications



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## ABSTRACT

Understanding strategic decisions aimed at addressing regional economic issues is of increasing interest among scholars and policy makers today. However, studies that proffer effective strategies to address digital futures concerns from social and policy perspectives are timely. In light of this, this research uses strengths, weaknesses, opportunities and threats (SWOT) analysis tool to frame a regional strategy for digital futures to enhance place-specific digital connectivity and socio-economic progress. Focus group discussions and a structured questionnaire were conducted to examine a SWOT for a digital economy strategy in the Southern Downs Region in Queensland, Australia. The findings show that while the proposed regional strategies for digital futures are susceptible to internal and external forces, strategic planning makes them manageable. The study's findings also reveal that adaptive strategic planning can help regulate the effects of internal and external factors that shape individual and organizational responses to digital transformation, and that these factors promote regional competitiveness.

## 1. Introduction

Much of the innovation-led development literature favours a 'techno-optimist' approach to regional competitiveness and advancement, but technological readiness and adoption in regional areas often is still lagging (Alam and Shahiduzzaman, 2014). As a result, scholars are showing increasing interest in understanding strategic planning approaches that solve regional development concerns (Bentley and Pugalish, 2014; Rickman and Rickman, 2011), particularly those that are technology-related (Erdiaw-Kwasie and Alam, 2016). For example, scholars have applied strategic planning techniques to business analysis (Erdiaw-Kwasie, 2016; Kalkan and Bozkurt, 2013), land use and urban development (Cobbinah, 2017; McFarland, 2015), environmental and ecological analysis (Balsiger and Debarbieux, 2011; Tedsen and Andreas, 2013), spatial data analysis (Acheampong et al., 2017; Amoateng et al., 2018) and policy analysis (Erdiaw-Kwasie et al., 2016; Hovik and Hanssen, 2015). However, even though strategic planning has been used extensively in other fields of study, both at micro and macro scales (Dyson, 2004; Roberts and Stimson, 1998), not much is known about regional digital strategies towards proactive responses to rapid technological changes.

According to Řehoř (2015), the primary aim of strategic planning is

to bring an organization into balance with the external environment and to maintain that balance over time. This balance often is realised by evaluating new programs and services with the intent of maximizing performance. The strengths, weaknesses, opportunities and threats (SWOT) analysis is a precursor to strategic planning and ensures that an assessment is made with a critical perspective (Guirado et al., 2017; Carpenter, 2006). Elsewhere the SWOT analysis is perceived as a preliminary decision-making tool that sets the stage for adjustments to maintain optimal function (Gibis et al., 2001).

Given the speed of rapid technological developments and the demand for ubiquitous and more responsive digital ecosystems, there is an increasing need for effective strategic decisions to guide digital futures strategies (Alam and Imran, 2015; Malecki, 2010). Among the challenges faced by a regional digital competence strategy is the rising uncertainty surrounding its overall environment, including economic, political, social, technological and environmental factors. According to Schwenker and Wulf (2013), underestimating this uncertainty can be hazardous. To these authors, at worst it may lead to strategies that are unable to protect against threats, and at best it may lead to strategies that ignore the potential opportunities inherent in uncertainty. This implies that, traditional policies are not enough in themselves to win in the digital age. New regional strategic planning approaches that pay

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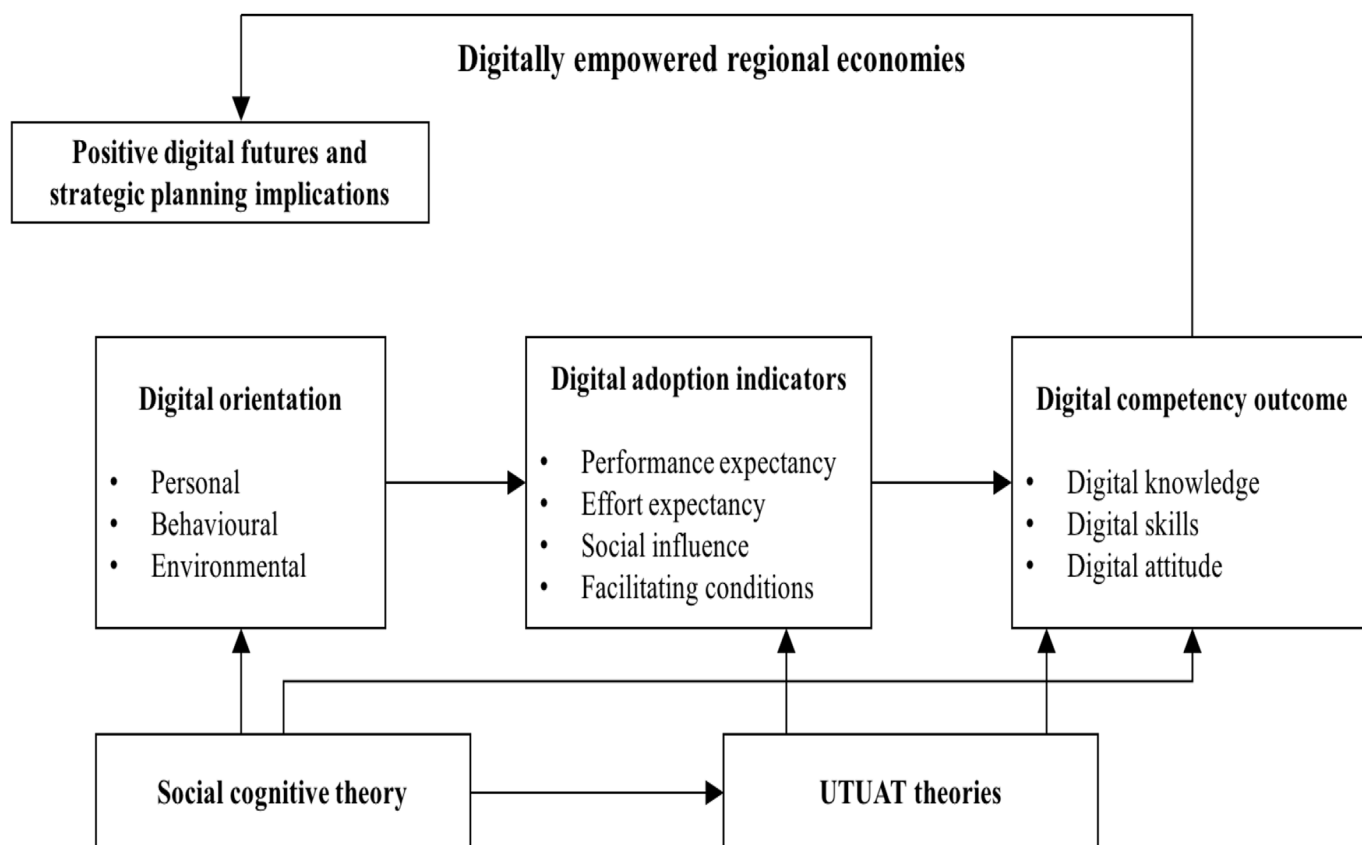


Fig. 1. Framework to guide digital orientation and adoption research.

significant attention to both the internal and external contexts are necessary, particularly the way of life of its users (Erdiaw-Kwasie and Alam, 2016; Murthy, 2008). It is in this context that strategic planning is suggested as an extended tool for regional development in this digital age.

The objectives of this research are to understand how rural and regional areas are positioned for digital competence from a holistic strategic planning perspective, to discover barriers to digital competency and to develop strategy for strengthening digital futures in the region. In this study, the term ‘regional’ refers to non-metropolitan regions. In the study context, the regions comprise an extremely diverse area ranging from coastal settlements or inland towns to the sparsely populated, hot and dry outback (AIHW, 2006). In Australia, two-thirds of the total population lives in major cities and the remaining one-third lives in regional, rural and remote locations (Baxter et al., 2011). Although there are distinctions between the three terms, in this study we used ‘regional’ to refer to non-metropolitan regions in general. In terms of digital competence, this paper defines it as the capacity and capability of different stakeholders to embrace the emerging technologies. Accordingly, access to and engagement with digital technology are vital to communities and businesses in regional areas. The Southern Downs Region, south west of Brisbane in Queensland, Australia is used as a case study, given the increasing concerns about the region’s technological readiness measured in terms of access to telecommunication services, household Internet connections and technology-based economic activities. This research is expected to contribute to a better understanding of digital futures strategies at the local level to promote regional competitiveness.

The organization of this paper begins with an introduction section, and then followed by section 2 that provides a theoretical background to the research and sheds light on the case study. Section 3 discusses the methodology and data, section 4 presents and discusses the study findings and section 5 provides the conclusions.

## 2. Theoretical background

### 2.1. Overview of underpinning theories

Several theories are used in information technology research (Wade, 2009), but the central focus of this section will be on theories about technology orientation and adoption. The concept of individual technology acceptance was introduced into the information technology literature by Davis (1986) with his Technology Acceptance Model (TAM) which has been subject to theoretical development subsequently (Venkatesh and Davis, 2000). At the firm level, most studies on technology adoption are derived from theories such as the resource-based view of the firm (Barney, 1991), diffusion of innovation (Rogers, 1983) and the technology, organization and environment (TOE) framework (Tornatzky and Fleischer, 1990). At the individual level, theories like the theory of reasoned action (Fishbein and Ajzen, 1975), the TAM (Davis et al., 1989) and the theory of planned behaviour (Ajzen, 1991) have been used widely in recent studies (Kim and Crowston, 2011; Lai, 2017; Oliveira and Martins, 2011; Tarhini et al., 2015). Also, novel theories that are partially based on TAM have been developed to explain individual technology usage behaviour, including the unified theory of acceptance and use of technology (UTAUT), social cognitive theory (Bandura, 1986), and the model of adoption and technology in households (MATH) (Venkatesh et al., 2003; Brown and Venkatesh, 2005). For the purposes of this study, we focus on theories at the individual level. To this end, this paper focuses on the social cognitive theory and the UTAUT because they are the theories at the individual level that can help to explore user perceptions and to understand the internal and external factors involved in promoting the effective orientation, adoption and utilization of technologies.

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