

Chapter 28

Developing and Validating Measurement Instrument for Various Aspects of Digital economy: e-Commerce, e-Banking, e-Work and e-Employment

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ABSTRACT

ICT-driven innovations affect all sectors of economy and society where trends like adaptability, remote workforce, augmented reality/virtual reality, internet of things, smart machines and artificial intelligence run the core of digital transformation of every aspect of a business. This article introduces the measurement instrument that was created and validated with intention of questioning certain aspects of digital economy from the user point of view. The validation of the proposed measurement instrument was conducted by applying factor analysis (Principal component analysis - PCA) which revealed critical factors affecting certain aspects of digital economy: e-commerce, e-banking, e-work (telework) and e-employment. Measurement instruments were tested on 197 respondents from two Croatian counties. To maximise the benefits that can be derived from digital transformation it is essential to overcome all barriers and force employment of opened opportunities. Business alignment with IT remains a challenge; therefore, presented results are valuable input in the discussed domain.

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1. INTRODUCTION

Digital economy refers to economy based on digital technology usage and can be described as the ability of conducting business through market ground on Internet and World Wide Web. It encompasses every aspect of modern life, such as entertainment, health, education, business, banking as well as citizens' engagement in government work (BCS, 2015). Various components of digital economy include "government, policy and regulation, internet, world wide web, telecommunication and electronic industry, e-business and e-commerce industry, digital service providers, information and knowledge management systems, intellectual property rights, human capital and knowledge workers, research and emerging technologies" (Mutula, 2010). EU and other countries around the world research and promote digital economy (EUROSTAT, 2018a) and try to measure its impact on national and global level (IMF, 2018).

The movement of traded goods, services, and finance defined image of globalization, but today's version of globalization is being characterized by flows of data that embody ideas, information, and innovation with no borders and hard to measure (Barefoot et. al., 2018), (IMF, 2018). According to McKinsey&Company (2016) 50% of the world's traded services are already digitized, 12% of the global goods trade is conducted via international e-commerce, cross-border Skype calls equal 46% of the volume of traditional international calls, from 88 to 100% of the SMEs that use eBay's platform are exporters. Globalization and rapid advancements in information technology offer unprecedented opportunities to improve lives.

ICT and the Internet allow significant consumption benefits, such as finding information, ordering and payment for services and goods and that all customers can perform in the privacy from their home. "An e-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. One commerce transaction can be between enterprises, households, individuals, governments, and other public or private organizations" (OECD, 2011, p. 72). E-banking refers to the process or service that allows a bank customer to perform financial transactions via electronic media and is one of the most successful services in e-commerce with an increasing number of users every year.

The *e-work* indicate usage of ICT and the Internet in different aspects of employment activities like finding information about employment, sending job applications, logging on for employment mediation portals. The relevant papers that present opportunities of ICT and the Internet to support the employment policy in EU countries are: "Job opportunities in the Information Society" (1998) and "Strategies for jobs in the Information Society" (2000), i2010 - European Information Society 2010 and The Europe 2020 Strategy – "A strategy for smart, sustainable and inclusive growth" (2010). The share of respondents, which use ICT and the Internet as a tool for job seeking, indicates extent to which ICT and the Internet are exploited in job matching of the labour market.

This research aims to validate this new instrument that covers following aspects of digital economy: (i) usage of e-commerce, (ii) scope of e-commerce, (iii) usage of e-banking, (iv) usage of e-work (telework) and (v) e-employment. For this purpose, the new instrument, based on identified 5 factors or components, researched through 25 items (research questions) for monitoring certain aspects of digital economy was defined. Instrument items were defined and adjusted according to EUROSTAT (2014) and SIBIS (2003).

The rest of the paper is organized as follows: the second section of the literature review of digital economy and its current state. The third section provides the research methodology of research measure-

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