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ICT Adoption, Skill and Use Differences among Small and Medium Enterprises Managers Based on Demographic Factors

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Abstract

The Small and Medium Enterprises in economics are able to develop by Information Communication Technology (ICT) adoption. The adoption is determined by many factors, one of them is demographic. This research purpose is to examine the demographic factor differences (age, gender and education level) in ICT (computer and internet) adoption, skill and use among small and medium enterprises (SMEs) managers at Province Daerah Istimewa Yogyakarta. The research sample is the SMEs that guidance by Tenaga Penyuluh Lapangan (TPL) Badan Diklat Industri Region IV Yogyakarta as 196 SMEs managers. The analysis is using Manova Test to find out the age and education level meanwhile the gender variable is investigated by Independent Sample T-Test. The research evidence found that there is difference of ICT adoption, skill and use based on age and education level. Meantime there is no difference according to the respondent gender.

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Keywords: ICT Skill; ICT use; ICT adoption; age; education level; gender

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1. Introduction

The strength of small medium enterprises was exhibit in report of Kementerian Koperasi dan Usaha Mikro, Kecil, dan Menengah (Data Statistik UMKM, 2011). The report said that in 2011, about 99,99% of Indonesian business is consist of SMEs only about 0,01% is big business. Those SMEs employ about 99,40 million workers that affected for about 57,12% of Indonesian Gross Domestic Product.

The competitiveness of SMEs are able to develop using ICT adoption in order to increase business transformation, information exchange efficiency and effectively (Rahmana, 2009), however the ICT adoption is not simple process. OECD Survey (1993) remarks that the ICT adoptions among SMEs are considered low. Based on research institution AMI Partners, at 2000 only about 20% of Indonesia SMEs have (Roosdhani, Wibowo, and Widiastuti, 2012).

The ICT adoption process is complex, moreover it's determined by many factors one of them is demographic. Kumar, Rose, & D'Silva (2008) said that gender, age, and training were influence the computer and Internet adoption. Study that is conducted by Muinde (2009) found that ICT adoption at Kenya was determined by demographic factor as age, gender, education, welfare, and literacy level.

So that to find the empirical evidence, this research purpose is to find ICT adoption, skill and use differences among SMEs managers at Province of Daerah Istimewa Yogyakarta based on their demographic factors.

2. Literature Review

2.1. *ICT adoption level differences based on demographic factor*

ICT adoption defines as willingness to take the new innovation related to computer and internet. Roger (1995) divide innovation adopter into five categories: (1) innovator, (2) early adopter, (3) early majority, (4) late majority and (5) laggard.

Some of prior research stated that demographic factors such as age, gender and education level determine ICT adoption. The younger people are adopt ICT easily compare to the oldest generation (Budiono, 2004; Nilsson, 2005; Indarti & Rostiani, 2008; Kumar, Rose, & D'Silva, 2008; Harrison & Rainer, 1992; Ongori & Migiro 2011). Not only age, gender variable also important. Earlier research revealed that the males are dominated ICT adoption (Maleka, 2011). According to Olatokun (2009) education level that are related with technology uses gap.

Based on the literature, it can develop some of hypotesis as below.

H1a. There is ICT adoption difference based on age

H1b. There is ICT adoption difference based on gender

H1c. There is ICT adoption difference based on education level.

2.2. *ICT skill differences based on demographic factor*

ICT skill consists of basic, computer and internet skill in term of operating, processing, changing, accessing and using software and hardware of computer and internet devices (Hashim, 2007). Previous study exhibit that age level associated with computer skill. The younger generation more computer skilfull rather than the older (Harrison & Reiner, 1992). In term of gender, women were considered less competence rather than men (Alazam, Bakar, Hamzah, & Asmiran, 2012). As education level represent the ICT skill so that the lower education level has lower ICT skill rather than the higher level (Olatokun, 2009).

Correspond to previous research, some hypothesis were initiated as below.

H2a. There is ICT skill difference based on age

H2b. There is ICT skill difference based on gender

H2c. There is ICT skill difference based on education level.

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