

Information Systems Adoption among SMEs in Developing Country: The Case of Gerbang Kertaususila

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Abstract—The rapid growth of Internet Technology (IT) in Indonesia opens up many new business process innovations for small and medium enterprises (SMEs). Observing the cost of acquisition IT has become more affordable now compared to ten years ago, more and more SMEs convinced to implementing it. However, the success rate has been anecdotal. Various studies in the field of SMEs have been done, but not much focusing on how SMEs are adopting Integrated Information Systems. Specifically, in Gerbang Kertaususila (Industrial part of East Java, Indonesia), most of SMEs are trying to automate their business processes, however not many realize that in terms of IT adoption context, SMEs are not just merely a simple scaled-down model of large firms, hence many project implementations in SMEs were failing. This study combines T-O-E and TAM framework to analyses the important antecedents of technology adoption at the firm level. The collected data of 398 SME owners or managers were tabulated and analyzed using structural equation modelling to measure the causal effects. Result findings from final model confirmed the significance of Competitive Pressure (CP) and Owner's ICT Knowledge and Innovativeness (OIKI) as the largest predictor of Intention to Adopt IT for business process automation. Despite solid theoretical contribution of the findings, this study also offers practical means of increasing the success rate of IT adoption by SMEs.

Index Terms—Information Systems Adoption; Small Medium Enterprise; TAM; TOE.

I. INTRODUCTION

New challenges of more complex and competitive industries are upon Small and Medium Enterprises (SMEs), including the challenges of exploiting information technology to meet more needs of implementing information systems as in large business enterprises. Most often SMEs do not have access to IT human resources to accommodate information system adoption. Thus, hinders them to implement IT, even though they are aware of the need for implementing information systems to compete in this growing and increasingly global market.

SMEs contribute significantly to diminish unemployment in both developed and developing countries, including Indonesia. In the global economy era, changes need to be made in order for the SMEs to increase their competitiveness. One important factor that will determine the competitiveness of SMEs in Indonesia is the use of information technology [1]. Businesses can improve significantly through the use of IT by transforming speed, accuracy and efficiency of information exchange. It has been proven by case studies around the world that more than 50% productivity is achieved through investments in IT. SMEs may increase their global

competitiveness if they are able to take advantage of IT in order to become more reliable, balanced, and standardized.

The definition of Small and Medium-sized Enterprise (SME) varies in different countries. The diversity of SMEs resulted in different definition toward different country. The Indonesian Ministry of micro, small and medium enterprise under the Statute Number 20 Year 2008 defined SMEs according to 3 categories based on the company assets and revenue (1) Micro business, (2) Small business, and (3) Medium business as listed in Table 1.

Table 1
Criteria for Small and Medium Business

Criteria	Small Business (IDR)	Medium Business (IDR)
Assets (without land and building)	50,000,001 until 500,000,000	500,000,001 until 10,000,000,000
Annual Revenue	300,000,001 until 2,500,000,000	2,500,000,001 until 50,000,000,000

Note: criteria below small business is categorized as micro business

Gerbang kertaususila as a strategic urban economic planning area is actually an official acronym of six cities in East Java province in Indonesia which consists of Gresik, Bangkalan, Mojokerto, Surabaya Sidoarjo, and Lamongan as main metropolitans. This acronym also corresponds with the definition of Surabaya Extended Metropolitan Area. It has an area of 5,925.843 km², and at the 2010 survey had a population of 9,115,485.

Kurnia, Choudrie, Mahbubur, & Alzagooul [2] clarifies the role of e-commerce has the potential to accelerate the growth of small and medium enterprises (SMEs) in developing countries. However, the adoption of e-commerce by SMEs in developing countries have not yet dealt with the complexity systematically. Factors included in the study were the influence of organizational, industry, and national readiness and environmental pressure on the adoption of diverse e-commerce technologies. Results of the study showed a significant effect of environmental stress on the adoption of various technologies e-commerce, the readiness of national organizations and show the influences that vary for different technologies.

A study by Lee & Lee [3] indicates that community service quality has a positive direct effect on open-source ERP use. Open-source ERP quality has a direct positive effect on user satisfaction, which in turn has a positive effect on individual net benefits. In addition, it also positively affects organizational net benefit. Hence, implementers using open-source ERP need to take the community service quality