Assessing SMEs Batik Readiness for SNI Adoption

(Case Study SMEs Solo and Yogyakarta)

A.Susanty[1], D. I. Rinawati[2], B. Purwanggono[3], D. Puspitasari[4], Meylani[5]
[1,2,3,4,5] Department of Industrial Engineering, University of Diponegoro, Semarang, Indonesia
(ariessusanty@gmail.com)

Abstract - **The standards adoption gives two types of benefit, i.e. tangible and intangible ones. Related to the adoption of standard, this study proposed framework for assessing the SMEs readiness on SNI adoption which is composed of four critical factors, i.e. perceived national readiness (macro level), perceived industry readiness (meso level), perceived organizational readiness (micro level), and perceived environmental pressure. This study uses an AHP analysis for assigned importance weight of each critical factor and sub- factors in that framework and Likert Scale for measuring each critical sub factor. Then, a total 12 SMEs Batik (6 SMEs from Solo and 6 SMEs from Yogyakarta) participated in the pilot test based on the proposed framework. The result of the study indicated that SMEs Batik has a different level of readiness for SNI adoption. SMEs Batik in Solo more ready than SMEs Batik in Yogyakarta. Compare with small size firms, medium size firms tend to more ready for SNI adoption.**

Keywords – **SMEs Batik, perceived organization readiness, perceived industry readiness, perceived national readiness, environmental pressure**

I. INTRODUCTION

A standard is a document which provides, inter alia, requirements, rules, and guidelines, for a process, product or service. These requirements are sometimes complemented by a description of the process, products or services. Standards are the result of a consensus and are approved by a recognized body. The standards aim at achieving the optimum degree of order in a given context. The process of formulating, issuing and implementing standards is called standardization [1]. The standards adoption gives two types of benefit, i.e. tangible and intangible ones. The first type is related to something that can be calculated such as productivity, percentage of defects, idle time, inventory level reduction, and so on, while the second one is related to the employee's behavior and morale. Detailed types of benefit would depend on the type of industry such as manufacturing (discrete) and continuing industry, product and service industry etc. [2]. Standardization can be undertaken at four significant levels. Amongst the various levels of standardization, i.e. the level of the individual, the company, the industry or the country, it is the national level that is most important. It is at the national level that the standardization requirements of individuals, companies and the industry are coordinated and integrated into purposeful national standards. At the same time, national level standards serve as a basis for forging international agreements on international standards, which help to promote worldwide exchanges of goods and services [1]. In Indonesia, one of important national standard is Standard National Indonesia for Batik (SNI for Batik). Batik is an important textile product made by Java, Indonesia. There has been a very long historical route of batik as a traditional and cultural heritage in Indonesia [3]. Batik is a fabric dying method using wax to create patterns and designs. This method makes use of a resist technique; applying areas of cloth with wax (a dye-resistant substance) to prevent them from absorbing colors when the cloth is dipped into dye. Not only as a dye-resistant substance, a wax which is applied also using to control colors from spreading out from a particular area to create motif when the dye is painted [4]. Two processes that represent the art of batik making are 'batik-tulis' (hand-drawn batik) and 'batik cap' (hand-stamped batik) [5]. Up to the year 2007 the amount of batik industry in Indonesia has reached 48,300 business units and able to absorb 792,300 workers [6]. In 2008, there were 53,250 batik units in Indonesia employing around 873,510 workers. By 2010, this number had grown to 55,778 units with 916,783 workers, and the number is still rising [7]. However, the export value of Indonesian batik and batik items has been decreasing since the global recession hit the world. As a result, the export value which was US$ 93.09 million in 2008, dropped to US$ 76.02 million in 2009 and further to US$ 69.24 million in 2010 [7]. Generally batik industry today is facing many problems, among others are similar batik textile product competition from the other country, such as China and Malaysia. In domestic market, batik textile product competition illegally imported from China, and even according to Kontan in 2008, the illegal import value is reaching 290 billion IDR [6].

SNI Adoption gives benefit to batik industry, such as protect the actors of this industry (among others Small Medium Enterprises/SMEs) with the entry of the same product from the other countries. SNI adoption can also make batik from Indonesia have standard quality which can be differentiated from others. For customers, SNI adoption can make a purchaser convinced about the quality level of a product that has been manufactured according to a recognized standard batik from Indonesia.

Although SNI for batik was ready, many of SMEs in the batik industry were reluctant to implement it. The main constraint was an expensive cost required for SNI adoption. Then, the second constraint, many of SMEs believed in themselves that they would be successful without any SNI adoption. Among SMEs batik, although

not many, there were several of SMEs Batik which have a positive response to SNI adoption. Examples of a positive response on SNI adoption can be seen from two SMEs at Kampoeng Batik Laweyan (SME Batik Mahkota and SME Batik Saud Effendi). Currently, both of SMEs conduct some process with Research and Development Yogyakarta to get the SNI for Batik [8].

Despite the presence of negative and positive responses on SNI adoption, which is important to note is the ability and the readiness of the actor in the industrial sector (in this case the SMEs batik). It is because the actors in that industry will become a party who must fulfill all the requirements demanded by the standard. This readiness is very important especially for the adoption mandatory standards and, according to the National Standardization Agency, that readiness can be seen from several aspects, among others [9]: (i) have been implemented a quality management system, such as Total Quality Management (TQM), ISO 9000; (ii) have an organizational structure, division of authority, and a clear and detailed job descriptions; (iii) have a top management which focus on quality and customer satisfaction; (iv) have adequate production facilities; (v) availability of some equipment for testing the quality of products; (v) have an adequate trained Human Resources like skilled workers, supervisors, administrative personnel, Research and Development personnel, Quality Assurance personnel, and laboratory personnel for testing ; (vi) have a good database for building an information systems; and (vii) have a good networking with other businesses and a good networking for marketing, Not all aspects was responsible of organization. Among that seven aspects, availability of any equipment for testing the quality of products as requested by standard is a responsibility of government because that equipment usually very expensive to provide by SMEs itself. This condition indicated that the readiness for SNI adoption doesn't only depend on the organization (or SME) as a main actor but also depend on the government who will support the SME with facility for doing some testing as requested by the standard.

Then, in order to determine the profile of readiness of some SMEs related to SNI adoption, this study has several purposes. First, identify some critical factors and sub-factors which have significant impact for SMs readiness on the SNI adoption. Second, calculate the important weight of each factor and sub-factor which have significant impact for SMEs readiness for SNI adoption. Third, design a framework for assessing the SMEs readiness on SNI adoption; and fourth, conduct a pilot test for assessing the SMEs readiness on SNI adoption. Based on that purpose, this study is organized as follows. Section 2 proposes a methodology which contains some critical factors and sub-factors which has significant impact for SMs readiness. Section 2 also proposes the framework for assessing the SMEs readiness on SNI adoption, the result of calculating the important weight of each critical factor and sub-factor in the framework and measurement scale for assessing the readiness. Section 3 applies the framework for assessing the readiness of some SMEs Batik in Solo and Yogyakarta. Section 4 proposes some discussion about the profile of SMEs readiness for SNI readiness. Finally, section 5 proposes the conclusion of the study.

II. METHODOLOGY

This sub-section will begin with the discussion about Critical Success Factors (CSFs) for implementing the quality initiatives in SMEs, i.e. TQM. This is because, as we mentioned in the first section, implement the quality system in the process business is one of the criteria which indicates that the firm has been ready for SNI adoption. Furthermore, this section will discuss a framework that comprises the three types of readiness (organizational, industry and national) alongside the environmental pressure. This framework would fill the weakness of the previous study about CSF. The previous study about CSF only focuses on the CSFs which were thought can be explained as the readiness of the organization (of SMEs) on SNI adoption (micro level). The readiness of the organization (of SMEs) on SNI adoption would be optimal if there were supported by the readiness of their industry and national (government). This section will also discuss about a sample of the research.

A. CSFs for Implementing the Quality Initiatives in SMEs

The key distinction between quality assurance and Total Quality Management (TQM) is that TQM focuses on the whole organization rather than on its quality system. TQM involves a holistic approach to quality and espouses a quality culture that permeates the organization from top-level management down to 'shop-floor' employees. Quality becomes 'everyone's business' and the customer is redefined to include internal (as well as external) entities. TQM utilizes a broader definition of quality than does quality assurance, and has therefore been viewed as the logical next (and perhaps final) step for an organization on the quality 'journey' [10]

Many SMEs have an awareness of the necessity to implement quality assurance. SMEs generally lag behind larger firms when it comes to the adoption of quality [11]. Studies by Elmuti and Kathawala [12] indicate that the adoption of quality by small businesses has been minimal. It is extremely rare among the local SMEs to find firms, which actually apply TQM, including quality control (QC) circle activities and other necessary practices, as an important element in upgrading in-house technical levels. Studies have also shown that SMEs often practice TQM activities without labelling them as such. Instead they are considered simply as good management practices. Thus, often firms – particularly small - employ 'informal' quality management techniques [13].

Studies of TQM implementation in smaller businesses are relatively scarce. There seems to be greater interest in the application of TQM in larger organizations,

probably because they are seen as being more important than smaller ones. Much of the current published work is centered around the approaches that small companies have taken in their pursuit of TQM. Some of the literature relates to survey results regarding the motive for TQM implementation, measures adopted and the outcome of TQM implementation based on managers' perceptions [14].

One of the main difficulties in studying critical factor of TQM is how to define and measure them before they become critical [15]. A study of Critical Success Factor (CSFs) was pioneered by Saraph et al. [16]. Saraph et al. [16] performed a previous extraction of one hundred and twenty organizational prescriptions for an effective TQM implementation and subsequently clustered them into eight categories of critical success factors (CSFs), defining these, as critical issues in managerial planning/action that must be practiced to achieve an effective quality management. The main aim of this study was later pursued by several authors approaching this issue through different methodologies or replicating the framework in different cultures/countries.

On another important aspect to be recognized is that although studies on CSFs of implementation were conducted for companies of all sizes, very few were found for SMEs. Yusof and Aspinwall [14] proposed 10 CSFs for TQM implementation which were thought to be applicable to SMEs, i.e: management leadership, organization, education and training, quality of design, quality of suppliers, quality in process, fact-based management, human resource management, customer focus, technique and tools.

Management leadership is probably the most important factor for TQM success [14]. Shea and Gobeli [17] suggested that it is easier to implement TQM in SMEs since the ultimate power in making decisions lies with the owner managers. Training and education is one of the most important items on the agenda for small businesses in adopting TQM. Ideally, in a small organization with fewer people, it will be very much easier to educate and train employees, and the amount of time needed to cascade training to lower levels is very much shorter than for large companies. However, small companies who recognize the need for training, do not have a clear vision of what is required and lack resources, knowledge, or facilities in carrying out an effective program for the employees [18]. Small firms do not have the extra capacity to substitute people for periods of absence as compared to large firms, and this can hamper training programs [19]. Another problem is the inability of small firms to allocate sufficient funds for training. Without this, the road towards realizing TQM could prove to be difficult.

B. Three Types of Readiness (National, Industry, and Organizational) and Environmental Pressure

The framework for assessing the readiness of SMEs Batik on SNI adoption is based on the three types of readiness (national, industry, and organizational) and environmental pressure from Alzougool and Kurnia [20]. Although this framework initially was proposed for adoption of E-commerce technologies in SMEs but, in this study, this framework is used for assessing the readiness of SMEs on SNI adoption. It is because, within this framework, we can see the readiness from a comprehensive point of view. The readiness of SMEs on SNI adoption not only depend on the organizational factor. The readiness of SMEs on SNI adoption also depends on some factors belongs to outside of the organization. Not only more comprehensive, the proposed framework also has included the 10 CSFs for quality initiative implementation from Yusof and Aspinwall [14] which were thought to be applicable to SMEs. In detail, the framework for assessing SMEs Batik readiness for SNI Adoption can be seen in Fig 1.

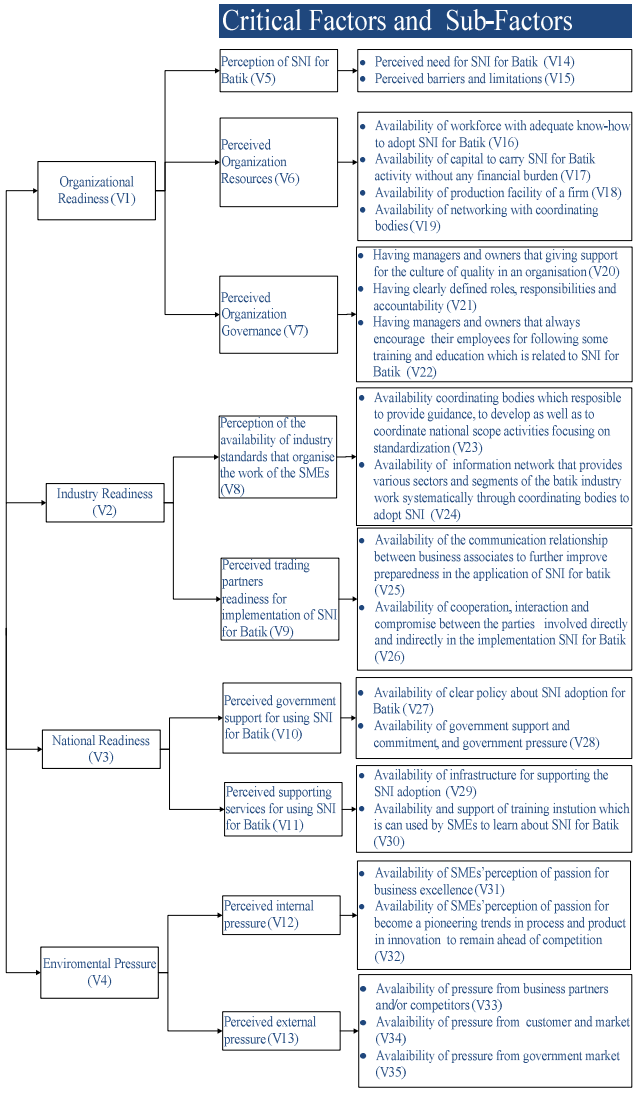

Fig. 1. A framework for assessing SMEs Batik readiness on SNI adoption

Then, by following the AHP procedure, the importance weight of each critical sub-factor in assessing SMEs readiness for SNI adoption can be seen in Table 1. Besides the importance weight of each critical sub-factor, we can also see the five points Likert Scale (the worst condition until the best condition) which is used to measure the SME's condition related to each critical sub-factor.

TABLE 1
THE IMPORTANT WEIGHT AND FIVE POINTS LIKERT SCALE FOR EACH CRITICAL SUB-FACTOR

Critical sub-factors	Weight	Scale
V14	0.050	Very unnecessary (1) ---------Very necessary (5)
V15	0.050	There are so many barriers and limitations (1) ---------- No barriers and limitations at all (5)
V16	0.028	No employee with adequate skills (1) ---------- Every employee has adequate skills (5)
V17	0.020	Do not have money to carry SNI for Batik (1) ---Have enough money to carry SNI for Batik (5)
V18	0.017	Do not have production facilities at all (1) --------Have enough production facility (5)
V19	0.012	Do not have networking with coordinating bodies (1) - Have intensive networking with coordinating bodies (5)
V20	0.024	Do not have support from managers and owners (1) ---- Have enough support from managers and owners (5)
V21	0.019	Do not have clearly defined roles, responsibilities and accountability (1) ------ Have very clearly defined roles, responsibilities and accountability (5)
V22	0.020	Do not have support from managers and owners (1) -- Have enough support from managers and owners (5)
V23	0.139	Do not have coordinating bodies (1) ---------- Have very good coordinating bodies (5)
V24	0.017	No information network at all (1) ---------- There is a very good information network (5)
V25	0.016	No communication relationship at all (1) ----------There is a very good communication relationship (5)
V26	0.007	No cooperation, interaction and compromise at all (1) There is a very good cooperation, interaction and compromise (5)
V27	0.104	No policy about implementation of SNI for Batik (1)-- There is a very clear policy about implementation of SNI for Batik (5)
V28	0.058	No government support and commitment at all (1) ----- There is a very good government supported and commitment (5)
V29	0.127	No infrastructure for supporting the SNI adoption (1) There is a very good infrastructure for supporting the SNI adoption (5)
V30	0.101	No training institution (1) -----There is a very good training institution (5)
V31	0.075	No perception of passion (1) ------There is a very good perception of passion (5
V32	0.045	No perception of passion (1) -------There is a very good perception of passion (5)
V33	0.023	No pressure at all (1) ---------There is a very high pressure (5)
V34	0.022	No pressure at all (1) ---------There is a very high pressure (5)
V35	0.032	No pressure at all (1) ---------There is a very high pressure (5)

C. Sample of Research

A total 12 SMEs Batik (6 SMEs from Solo and 6 SMEs from Yogyakarta) participated in the pilot test of the assessing the SMEs readiness on SNI adoption. From a total 6 SMEs Batik from Solo, there are 3 SMEs which belong to medium size firms and 3 SMEs which belong to small size firms. From a total 6 SMEs Batik from Yogyakarta, there are 3 SMEs which belong to medium enterprises and 3 SMEs which belong to small enterprises. Then, to get a complete picture of the readiness of SMEs batik, the participant of this study also consists of SMEs who produce hand-drawn batik, hand-stamped batik, and mixing between hand-drawn and hand-stamped batik. In detail, all SMEs who became participants in this pilot test can be seen as in Table 2.

TABLE 2
PARTICIPANT OF THE PILOT TEST

Location	Scale of Production	Type of Production	Name of SMEs
Solo	Medium Size Firms	Hand-drawn Batik	Batik Gress Tenan (GT)
		Hand-Stamped Batik	Batik Amelia (AM)
		Mixing between Hand-drawn and Hand-stamped Batik	Batik Mahkota (MH)
	Small Size Firms	Hand-drawn Batik	Batik Setya (SE)
		Hand-Stamped Batik	Batik Estu Mulyo (EM)
		Mixing between Hand-drawn and Hand-stamped Batik	Batik Cipta Asri (CA)
Yogya-karta	Medium Size Firms	Hand-drawn Batik	Batik Sekar Arum (SA)
		Hand-Stamped Batik	Batik Topo 'HP' (TP)
		Mixing between Hand-drawn and Hand-stamped Batik	Batik Giri Indah (GI)
	Small Size Firms	Hand-drawn Batik	Batik Sekar Jagad (SJ)
		Hand-Stamped Batik	Batik Hani HN)
		Mixing between Hand-drawn and Hand-stamped Batik	Batik Tugiran (TG)

III. RESULT

The condition of each SMEs Batik which become a participant in this pilot test is assessed based on the critical sub-factors. This assessment will produce certain values of each critical sub-factor on a scale of 1 to 5. Then, the value of each critical sub-factor is multiplied by a certain weight in order to obtain the value of the critical sub-factors that have been weighted. The sum of all the critical sub-factors that have been weighted will produce a total score that describes the level of SMEs readiness on SNI adoption in a specific location as shown in Table 3.

IV. DISCUSSION

In terms of organizational context, the SMEs Batik has different readiness for SNI adoption. SMEs Batik in Solo more ready than SMEs Batik in Yogyakarta as shown in Fig 2. We also can conclude that SMEs Batik in Solo not only more ready in their organization, SMEs Batik in Solo also more ready in their industry and there were more environmental pressure in Solo than in Yogyakarta.

Then, compare with small size firms, medium size firms tend to more ready for SNI adoption; although, in Solo, there were more environmental pressure for small size firms than for medium size firms as shown in Fig 3 and Fig 4. But, the differences was not much. This condition was not surprising, because medium size firms usually have a better organizational management than small size firms. Medium size firms also have a good relationship with other firms and they tend to have more access to get a new information than small size firms.

TABLE 3
WEIGHTED VALUE OF EACH CRITICAL SUB-FACTOR AND TOTAL SCORE OF EACH SME IN SOLO AND YOGYAKARTA

Critical sub-factors	A weighted value of critical sub-factors-Solo						A weighted value of critical sub-factors-Yogyakarta					
	GT	AM	MH	SE	EM	CA	SA	TP	GI	SJ	HN	TG
V14	0.10	0.05	0.25	0.05	0.10	0.05	0.15	0.15	0.05	0.05	0.05	0.05
V15	0.15	0.15	0.15	0.05	0.05	0.05	0.05	0.15	0.05	0.10	0.05	0.10
V16	0.14	0.11	0.06	0.11	0.06	0.11	0.11	0.11	0.11	0.11	0.03	0.11
V17	0.02	0.04	0.10	0.02	0.04	0.02	0.08	0.06	0.02	0.02	0.02	0.06
V18	0.09	0.09	0.09	0.03	0.07	0.07	0.07	0.09	0.03	0.07	0.03	0.07
V19	0.04	0.05	0.06	0.04	0.04	0.04	0.04	0.06	0.04	0.02	0.02	0.04
V20	0.12	0.12	0.12	0.12	0.12	0.10	0.10	0.12	0.12	0.12	0.07	0.12
V21	0.10	0.10	0.08	0.10	0.04	0.10	0.08	0.10	0.10	0.10	0.08	0.10
V22	0.08	0.06	0.06	0.08	0.06	0.08	0.08	0.08	0.06	0.08	0.06	0.06
V23	0.14	0.14	0.56	0.14	0.28	0.14	0.56	0.14	0.14	0.28	0.14	0.14
V24	0.05	0.02	0.05	0.02	0.03	0.02	0.05	0.05	0.02	0.02	0.02	0.02
V25	0.06	0.08	0.08	0.08	0.08	0.08	0.06	0.06	0.08	0.06	0.06	0.06
V26	0.03	0.03	0.02	0.03	0.03	0.03	0.01	0.01	0.03	0.01	0.02	0.02
V27	0.10	0.10	0.42	0.10	0.31	0.10	0.31	0.10	0.10	0.10	0.10	0.10
V28	0.17	0.17	0.06	0.17	0.17	0.06	0.23	0.17	0.17	0.17	0.17	0.06
V29	0.38	0.38	0.38	0.13	0.38	0.38	0.38	0.38	0.38	0.13	0.38	0.13
V30	0.40	0.51	0.30	0.10	0.10	0.40	0.40	0.30	0.51	0.30	0.30	0.40
V31	0.38	0.38	0.23	0.38	0.38	0.38	0.30	0.38	0.30	0.30	0.30	0.30
V32	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.14	0.09	0.09	0.05	0.09
V33	0.07	0.02	0.05	0.02	0.07	0.02	0.07	0.02	0.07	0.07	0.02	0.02
V34	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
V35	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Total Score	**2.76**	**2.73**	**3.24**	**1.91**	**2.54**	**2.36**	**3.28**	**2.73**	**2.52**	**2.26**	**2.04**	**2.10**

TABLE 4
MEAN OF WEIGHTED VALUE OF EACH CRITICAL FACTOR

Critical factors	Average
Organizational readiness	0.69
Industry readiness	0.36
National readiness	0.97
Environmental pressure	0.52
Mean of Total Score	2.54

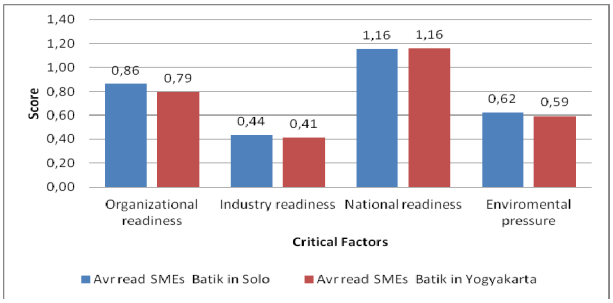

Fig. 2. The SNI implementation readiness comparison between SMEs Batik in Solo and Yogyakarta

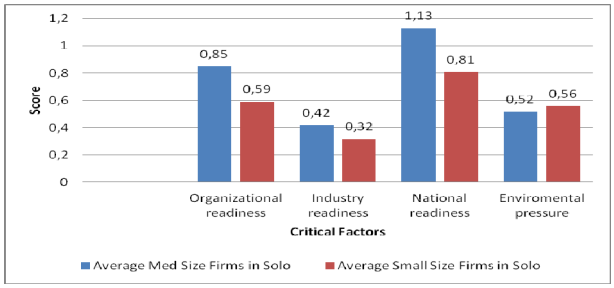

Fig. 3. The SNI implementation readiness comparison between Medium Size Firms and Small Size Firms in Solo

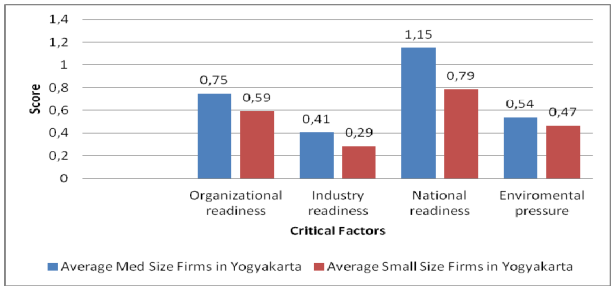

Fig. 4. The SNI implementation readiness comparison between Medium Size Firms and Small Size in Yogyakarta

V. CONCLUSION

This study proposed framework for assessing the SMEs Batik readiness on SNI adoption. This framework originally proposed by Alzougool and Kurnia (2008) for E-commerce technology adoption but, in this study, this framework will be proposed to assess the SMEs Batik readiness on SNI adoption. It is because, within this framework, we can see the readiness from a comprehensive point of view. The readiness of SMEs on SNI adoption not only depend on the organizational factor. The readiness of SMEs on SNI adoption also depends on some factors belongs to outside of the organization. Beside more comprehensive, the proposed framework also has included the 10 CSFs for quality initiative implementation from Yusof and Aspinwall (1999) which were thought to be applicable to SMEs. In this framework, there were four critical factors that proposed to be considered for assessing of the SMEs Batik readiness on SNI adoption, i.e. perceived national readiness (macro level), perceived industry readiness (meso level), organizational readiness (micro level), and perceived environmental pressure.

Based on the framework that proposed in this study, the level of readiness among several SMEs Batik in Solo and Yogyakarta have clearly been defined. Although these results are not directly comparable to each other, nevertheless it helps to provide some indication of the extent of achievement for Indonesia SMEs in the journey towards excellence. In terms of organizational context, the SMEs Batik has different readiness for SNI adoption.

SMEs Batik in Solo more ready than SMEs Batik in Yogyakarta. Then, compare with small size firms, medium size firms tend to more ready for SNI adoption.

The scope of study is limited 12 SMEs Batik located in Solo and Yogyakarta. The limited number of SMEs engaged in this study may raise a concern on the representativeness of the sample. Further research could also investigate whether SNI adoption can make SMEs improve their financial and non-financial performances over a longer time period. Due to the costs associated with SNI adoption, it might take several years for the financial benefits of SNI adoption to be realized. Further research could also investigate whether SNI adoption is only beneficial to firms above a certain size. That is, the costs associated with SNI adoption may outweigh the benefits for firms below a certain size.

ACKNOWLEDGMENT

This work has been funded by the Directorate General of Higher Education through grants for "Hibah Bersaing". The authors wish to acknowledge the Head of Department of Industrial Engineering and Dean of Faculty Engineering for their support We also wish to acknowledge our gratitude and appreciation to all the partners in "Hibah Bersaing" for their contribution during the development of various ideas and concepts presented in this paper.

REFERENCES

[1] UNIDO, "Role of Standards : A Guide for Small and Medium-sized Enterprises," *Research Paper*, pp. 8-9, 2006.

[2] A. Bakhtiar, A. Susanty, B. Purwanggono, "The benefits assessment of standards: a cross case analysis in manufacturing industries-indonesia," in *Proc. Conf. on Information Management, Innovation Management, and Industrial Engineering*, *ICIII 2012,* Sanya, CHN, pp.356-360.

[3] Hasanudin, *Batik Pesisiran: Melacak Pengaruh Etos Dagang Santri pada Ragam Hias Batik.*. Bandung, IND: Kiblat Buku Utama, 2001.

[4] S. S. Oparinde, "Batik as a cultural identity of the Yoruba: hand colouring techniques and applications, possibility of adaptations," *Journal of Arts, Science & Commerce*, vol. 3, no. 2, pp. 31-41, 2012

[5] D. Gunaryo, Sudarman, H.B. Wibowo, and P. Ambarita, "Pengembangan ekonomi kreatif Indonesia 2025: rencana pengembangan ekonomi kreatif Indonesia 2009-2015," *Repor*t, Ministry of Trade of The Republic of Indonesia, Jakarta, Indonesia, 2008

[6] G. Budiono and A. Vincent, "Batik industry of Indonesia: the rice, fall, and prospects," *Studies in Business and Economics Studies*, vol. 5, pp.156-170, 2010

[7] Textile Industry News, http://textilesnews.blogspot.com/2011/11/indonesian-ministry-of-industry-to.html, 2010

[8] Solopos, http://www.solopos.com/2011/10/07/laweyan-rintis-standar-kualutas-batik-118846, 2011

[9] National Standardization Agency, *Genap SNI*. Jakarta, IND: BSN, 2011

[10] M. X. Lobo and J. T. Jones, "Quality initiatives and business growth in Australian manufacturing SMEs: an exploratory investigation," *Research Paper Series*, School of Commerce, Flinders University, 03-3, pp. 1- 11, 2003

[11] R. G. P. McMahon, "Deriving an empirical development taxonomy for manufacturing SMEs using data from Australia's business longitudinal survey," *Small Business Economics*, vol.17, no. 3, pp. 197-212, 2001

[12] D. Elimuti and Y. Kathawala,. "Small services firms face implementation challenges," *Quality Progress*, vol.32, no.4, pp. 67-75, 1999.

[13] T. Van der Wiele and A. Brown, "Venturing down the TQM path for SMEs," *International Small Business Journal,* vol.16, no. 2, pp.50-68, 1998

[14] S. M. Yusof and E.Aspinwall, "TQM implementation issues: review and case study," *International of Journal of Operations & Production Management*, vol. 20, no. 6, pp. 634 – 655, 2000.

[15] M. Zairi, *Benchmarking for Best Practice.* Butterworth, Heinemann: Oxford, 1996

[16] J. V. Saraph, P. G. Benson, and R. G. Schroeder, "An insturment for measuring the critical factors of quality management," *Decision Sciences*, vol.20, no. 4, pp. 810-829, 1989.

[17] J. Shea and D. Gobeli, "TQM: the experiences of ten small businesses," *Business Horizons*, vol. 38, no. 1, pp. 71-77, 1995

[18] G. L. Lee and I. Oakes, "`The `pros' and `cons' of total quality management for small firms in manufacturing: some experiences down the supply chain," Total Quality Management, vol. 6, no.4, pp. 413-426, 1995

[19] M. D. Moreno-Luzon, "Can total quality management make small firms competitive?'," *Total Quality Management*, vol. 4, no. 2, pp. 165-181, 1993

[20] B. Alzougool and S Kurnia**, "**Electronic commerce technology adoption by SMEs: a conceptual study," in. *Proc. 19th Australasian Conference on Information Systems, ACIS2008*, Christchurch, NZ, pp. 42-54