

Business Process and Organizational Characteristics on SMEs (Case Study: A Digital SME's Community in Bandung)

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Abstract. High competition on businesses forces small and medium enterprises (SMEs) to manage process efficiently. This study aims to analyse the influence of organizational characteristics (including firm age, firm size, and business sector) on the business process in SMEs. Data collected using a questionnaire to the leaders of 18 SMEs in digital SME community at Bandung regency. Mann-Whitney U test, Kruskal Wallis test, and cross tabulation were used to test the relationship. The results showed that there were significant differences in the management intensity of external relations process based on firm age (p 0.04) and firm size (p 0.05). While based on business process importance, there is a significant difference in the market and sell products and services process (p 0.05). These results can be used as input in determining the focus of business process management in accordance with the organizational characteristics of SMEs.

Keywords: business process; organization characteristics; firm size; firm age; business sector; SME

1 Introduction

Emerging of creative economy sector in Indonesia has a significant contribution to increase state revenues. Statistically, the creative economy sector grew by 4.38% and contributed to 7.38% of the total national economy by 2015 [1]. Creative economy has an important role in employment and human resources empowerment [2]. Creative economy is known as a new economic concept that relies on ideas, ideas, or creativity from Human Resources (HR) as the main production factor in its economic activities [3]. Almost 98% of creative economic enterprises are micro, small, and medium enterprises (MSMEs) based on its business scale and the number of workers [1]. The existence of MSMEs had proven to improve the national economy. Therefore, it becomes important to develop and empower MSMEs. Some of the strategic issues faced in developing SMEs in the creative economy include the availability of creative professional resources, the competitiveness of the creative economy, market expansion, access to enterprise finance, availability of infrastructure and technology, and supporting institutions [2]. Based on survey results, one of the regions that had contribute to

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the value of creative economic exports is in West Java (33.56%) [3]. The very significant number of creative economic actors in West Java and a strong industry value chain with other regions supported the result [2]. This shows that there is still a great potential for developing MSMEs in West Java. Business actors are required to face competitive market competition and diversity of customer demand, so they have flexibility in managing their company. One of the keys to success in managing change is through the management of business processes in the company [4]. Process oriented organizations can produce high efficiency because they can focus on managing value-added processes [5].

Successful management of business processes can affect the performance of the company has been proven in large companies [6]. However, research business process in MSMEs's scope is still limited. In the MSMEs, business management are still informal and not yet standardized, especially when the business is in its initial phase could be reason for this [7]. This study aims to map business processes based on organizational characteristics of MSMEs. The results of this study are expected to provide an overview of the management of business processes on MSMEs, so that it can be drafted improvements in the management of processes in MSMEs. The structure of paper writing is divided into several sections as follows. Problems description and objectives of the study described in the introduction. The second section discusses the literature studies related to business processes and organizational characteristics. The third section describes the research methodology. The fourth section discusses the results of collecting and processing data on business process mapping. The fifth section discusses research conclusions and further research opportunities.

2 Literature Study

2.1 Business Process

Business processes are a set of logically interrelated activities in resource management to deliver value to customers [8]. According to [9] business processes can be understood as a series of activities undertaken within the business context to produce products and services. Business processes have an important role in the organization because it supports the achievement of organizational goals [10]. Effective and efficient business process management becomes the key to success for the organization [4]. The process consists of several levels of interrelated hierarchy in the business process approach [8]. Macro processes can be derived into subprocesses, activities and tasks [8, 11]. It is necessary to have a business process framework, to map business processes within a company [12]. The business process framework includes representations of business processes based on best practices. This framework can be used to describe of how the business processes should run in the company [9]. There are three types of business process framework, generic enterprise model, industryspecific model, and domain-specific model. Generic models represent business processes that can be used in all types of organizations. Industry-specific industry models show in place and emerging that aim to describe an industry in a whole. Domain specific model developed surrounding particular functions within the organization and the processes within them [13]. One of the business process frameworks commonly used in research is the generic business process framework issued by the American Productivity and Quality Center (APQC). In the APQC process classification framework there are 13 macro processes consisting of seven operational core processes and six managerial and support processes [6]. This framework was developed from Porter's value chain adapted to the conditions of application at various companies [12, 14]. This framework is widely used in research because it is considered comprehensive, encompassing not only core processes but also an explanation of how business process management processes are related [13]. The APQC PCF

framework enables benchmarking of inter-enterprise processes management regardless of industry sector, size or business location [9]. Some previous studies have used the PCF APQC framework to study business processes according to their respective research contexts [7, 11, 12, 15]. Study [11] developed a business process framework for implementing TQM. Research by [12] examines the application of IT to support business processes within the scope of SMEs. In the research [15] identified the needs of business processes based on the scale of SMEs to determine the requirements of the ERP module. While [7] examines the maturity level of business process management in fashion SMEs in accordance with the growth stage of the organization.

2.2 Organizational Characteristics

Organization characteristic is variable at the organizational level that can affect outcome of the organization. Several variables related to organizational characteristics include organizational size, organizational age, rewards and involvement in associations [16]. The characteristics of the organization can also represent the business scale of the organization. Organization size is a measurable organizational characteristic of a specific component, such as the number of employees. It can be used to measure because the organization is a social system that human resources are the main organizational entity [17]. Organization size is one of the most influential variables in various research organizations. Large companies have different characteristics compared to small firms in terms of number of departments, specialization of skills and functions, and level of formalization, centralization and bureaucracy [18]. Firm age describes how long an organization has been established. Organizations of different ages have different organizational conditions [16]. The organizational age and organizational scale affect organizational inertia in the face of change. Older organizations tend to be slow to cope with change and are reluctant to deal with changes in running a business challenge [18]. Several previous studies have examined organizational characteristics. Research conducted by [16] and [19] used organizational characteristics as moderating variables. The organizational characteristics used in both studies are firm size measured by the number of workers in the company. While in research [18] characteristics of the organization is an independent variable that can affect the application of TQM and company performance. In this study the organizational characteristics used are firm size and firm age. Research by [15] mapping business processes on micro, small and medium scale enterprises in the fashion industry sector in their research. This business process mapping becomes foundation in the development of ERP module for MSMEs. The results show that there are similarities and differences in business processes between business scales. All of the business scale implements four business processes, that are product design and development, marketing and sales, procurement and production, as well as accounting and finance. The larger the business scale the more complex the business processes run on the business. There are two business processes that distinguish between business scale, that are retail business management and human resource management.

3 Methodology

This study aims to map business processes based on organizational characteristics of MSMEs. Based on the purpose of the study, this type of research is classified as descriptive study. According to [20], descriptive study conducted to understand the characteristics of research variables in accordance with certain situations. There are two research variables discussed in this study namely business processes and organizational characteristics. To measure the business process, this study adopted the questionnaire used in [12]. There are

two questions that are structured for 12 processes at the enterprise level based on PCF APQC. The first question aims to identify the level of importance of each process, while the second question relates to the intensity of business process implementation in the company. The Likert scale with 5 points is used to measure each process, with a scale range from 1 (very low) to 5 (very high). While the variable characteristics of the organization used are of the size of the organization and the age of the company [16]. The size of the organization is determined by the number of employees in the organization, divided into three groups: micro-enterprises (1-4 people), small-scale enterprises (5-19 employees), medium enterprises (20-100 employees) [21]. While the age of the organization is grouped into three, (1) less than 5 years, (2) 5-10 years, (3) more than 10 years. Data collection was done through the sending of online questionnaires to 40 SMEs who are members of the community of digital UMKM Regency Bandung. However, the number of completed questionnaires and can be continued in the data processing as much as 18 (response rate 45%)., This study performed some data processing techniques such as descriptive statistics, Kruskal Wallis test, Mann Whitney test, and cross tabulation. Descriptive statistics aims to describe the response of all respondents and profiles of respondents involved in the study. The Kruskal Wallis test was conducted to examine the effect of firm age, while the Mann Whitney test was conducted to examine the effect on business processes at MSMEs. Based on Kruskal Wallis test result or Mann Whitney test, on business process known that there are significant differences ($p < 0.05$), then cross tabulation is done between the data of business process intensity on the related organizational characteristics. To identify whether there are significant differences between groups of data on cross tabulation, Chi Square test was done. The significant value of Chi Square test ($p < 0.05$) shows that there is a difference of business process intensity between group of organization characteristics. Data processing is done using SPSS 16.0 software. The results of the whole research can further be used to develop recommendations for business process focus according to organizational characteristics.

4 Results and Discussions

This research was conducted by involving MSMEs actors who are members of digital MSMEs community in Bandung Regency. The owners of this MSMEs have businesses in the creative economy sector. Based on Figure 1, it is seen that the fashion sub-sector is the most cultivated business by business actors in this community (39%), followed by craft (28%), culinary (17%), and others sub-sector (17%).

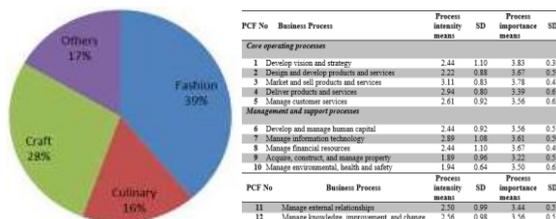


Fig. 1. Distribution of sample based on economy creative subsector and descriptive statistics for each business process, based on process intensity and process importance

This section discusses the descriptive statistics of the main research variables related to the level of intensity of business process implementation in MSMEs as well as the importance of business processes according to business actors. The result of calculation of mean value and standard deviation for two measurements related to business process intensity level and business process importance level can be seen in figure 1. Based on figure above, it is seen that the highly intense business process managed is the marketing and sales of products and

services as well as the delivery of products and services with an average rating of 3.11 and 2.94. While viewed from the level of importance, business process that is considered most important by business actors is the process of marketing and sales of products and services as well as design and development of products and services. Based on these results, it can be seen that one of the key processes in business management is marketing and selling of products and services. The process of marketing and selling of products and services becomes a critical process because it is sensitive to organizational strategy and becomes a crucial factor related to organizational income [4]. The high intensity of managing the marketing process is in line with the needs of the organization in the early stages of business establishment that focus on searching the market for selling the products and services produced [7]. There are two processes that have the lowest intensity value of property management and management of health, safety, and work environment (HSE). Aligned with the condition of MSMEs in Indonesia, where the property asset used is still in the form of personal capital (such as the location of the business residing in the residence), so that the management of infrastructure assets has not been done. In addition, awareness of HSE management aspects in business actors is also still minimal, because it is not required by the MSMEs. Except for the culinary sector, which need to give attention to the HSE aspect, since to obtain mandatory food certification such as P-IRT and halal assurance, sanitation and hygiene management is required in the production process and the good environment [22]. The next finding obtained under Table 1 is that all business value of business process has a higher value than the intensity of business process. This represents that business actors have understood that the business process is important to be managed in the business it undertakes. However, in actual conditions there are several processes that prioritized to be managed because it affects the continuity of the business run.

To explore more about the condition of business process in MSMEs, analyzed the influence of organizational characteristic to business process in MSMEs used Kruskal Wallis test. Data processing is needed to identify whether there are differences in perceptions of the level of importance and intensity of business processes in terms of business size and age of the company. The result of Kruskal Wallis test for the level of intensity and level of business process interest based on business age is shown in Table 2. Based on business age, respondents are divided into three groups: (1) less than 5 years; (2) 5-10 years; (3) more than 10 years.

Business Process	Business Process Intensity		Business Process Importance	
	Chi-Square	Sig.	Chi-Square	Sig.
Develop vision and strategy	2.57	0.28	0.68	0.71
Design and develop products and services	2.96	0.23	0.94	0.62
Business Process Intensity	Business Process Importance		Business Process Intensity	
	Chi-Square	Sig.	Chi-Square	Sig.
Market and sell products and services	0.51	0.77	5.53	0.02*
Deliver products and services	0.06	0.97	0.09	0.96
Manage customer services	3.21	0.07	2.10	0.35
Develop and manage human capital	2.85	0.24	0.30	0.86
Manage information technology	0.85	0.65	1.24	0.54
Manage financial resources	2.35	0.31	1.70	0.43
Acquire, construct, and manage property	2.52	0.28	5.02	0.08
Manage environmental, health and safety	2.94	0.23	1.17	0.56
Manage external relationships	6.50	0.04*	1.83	0.40
Manage knowledge, improvement, and change	2.43	0.30	0.30	0.86

Count	Business Age			Total
	1 (< 5 years)	2 (5-10 years)	3 (> 10 years)	
1 (very low)	2	0	0	2
2 (low)	7	1	1	9
3 (medium)	0	3	0	3
4 (high)	1	1	2	4
Total	10	5	3	18

REL_INT * YE Crosstabulation

Fig. 2. Kruskal-Wallis test for process intensity and process importance based on firm age and Cross tabulation for manage external relationships process intensity and firm age

Based on figure 2 it can be seen that there are significant differences in the intensity of the external relations management process between business age groups. To identify these differences, cross-tabulation was performed between the data of business process external relations management intensity and the company age group. The result of cross tabulation in Table 3, shows that the longer the business life, the process of external relationship management is intensively done. This suggests that in the process of external relationship management assessed more important to be managed in businesses over the age of 10 years. This response difference profile was found to have significant differences based on chisquare

test results in cross tabulation ($p = 0.023$, $p < 0.05$). At the beginning of the business establishment, MSMEs are still focused and prioritize management on other operational processes such as product development and design as well as marketing and product sales. In addition, due to the distinctive characteristics of the one-man-show in MSME entrepreneur [23], this external relationship management process is still managed by the entrepreneur directly.

There are significant differences in the marketing and sales processes of products and services between business size groups seen from the importance of business processes (see Table 2). To identify the profile of the difference, cross-tabulation is performed between the data of the importance of the business process of marketing and the sale of products and services with the business group, with the results shown in Table 4. Based on Table 4, it can be seen that in all business groups, sales of products and services is an important and crucial process for business continuity. The majority of respondents gave a high level of importance score (4) for this process.

Count	YE			Total
	1 (< 5 years)	2 (5-10 years)	3 (> 10 years)	
MKT_IMP 3 (medium)	1	3	0	4
4 (high)	9	2	3	14
Total	10	5	3	18

Fig. 3. Cross tabulation for market and sell products and services process importance and firm age

Mann-Whitney test results for the level of intensity and level of business process importance based on the size of the business as measured by the number of labor is shown in Table 5. Based on the size of the business, the research respondents are divided into two groups, namely micro (1) 1-4 workers; small businesses (2) 5-19 people. Referring to Table 5, it can be seen that there are significant differences to the intensity of managing the external relations management process based on business size. Study also found there is no significant difference between business size groups, viewed from the level of importance of business processes.

Business Process	Business Process Intensity		Business Process Importance		REL_INT * WF Crosstabulation			
	Mann-Whitney	Sig.	Mann-Whitney	Sig.	Count	WF		Total
						1 (micro)	2 (small)	
Develop vision and strategy	1.55	0.12	1.00	1.00	REL_INT	1	2	
Design and develop products and services	0.74	0.46	0.44	0.55	1			
Market and sell products and services	0.80	0.43	0.12	0.29	2	0	2	
Deliver products and services	1.44	0.15	0.40	0.49	(very low)			
Manage customer services	1.68	0.09	0.17	0.25	2			
Develop and manage human capital	1.68	0.09	0.10	0.18	(low)	7	2	9
Manage information technology	1.18	0.24	0.18	0.29	3	1	3	
Manage financial resources	1.46	0.15	0.20	0.44	(medium)	2	1	3
Acquire, construct, and manage property	1.67	0.10	0.13	0.21	4			
Manage environmental, health and safety	1.74	0.08	0.10	0.15	(high)	1	3	4
Manage external relationships	1.97	0.05*	0.19	0.29	Total	12	6	18
Manage knowledge, improvement, and change	1.19	0.25	0.10	0.18				

Fig. 4. Mann-Whitney test for process intensity and process importance based on firm size and Cross tabulation for manage external relationships process intensity and firm size

To identify the profile of the difference, cross-tabulation was performed between the data of business process external relations management intensity and business age group. The results of cross tabulation, in Table 6, show that the majority of micro enterprises have not yet implement the external relationship management process while in small businesses all have undergone a process of high-intensity external relations management. Based on this profile obtained that the greater the scale of business then the need to manage relations with external higher. In research [7] indicates that organizations in the Growth and Expansion phase, characterized by an increasingly large scale of business and longer business life, require a process of partnership with external parties to develop their owned business. To develop the business is often the actors of SMEs need access to finance [2]. Linking with a finance access provider is also included in the external relations management process.

Therefore, the intensity of managing this process will increase as the size of the organization grows.

This study resulted in two findings that contribute. The first factor of organizational characteristics in terms of business size and business age proved to have a significant effect on the intensity and level of business process interests in MSMEs. Secondly, there are two business processes that need to be considered in MSMEs management along with the growth of business size and the increasing of business age, that is the process of marketing and selling of products and services, as well as the management of external relations.

The current study still involves a limited number of MSMEs. Data should be collected additional data by involving a sample of SMEs with diverse locations and diverse business sectors, to generalize the results of research findings. In addition, further research can proceed to see the influence of other organizational characteristics such as business sector differences, location differences [17], and awards [16]. Further research need to collect samples from a group of medium-sized businesses (with a labor force of 20-100 people), so that can be identified picture of characteristics difference between business sizes.

5 Conclusions

This study aims to map business processes based on organizational characteristics of MSMEs. It showed that all MSMEs perceive that all business processes are important to manage (value of importance over 3 (medium)). Meanwhile, based on the level of intensity, there are two important processes that have been managed intensely on SMEs, namely marketing and sales of products and services, as well as design and development of products and services. Result of statistic test found that there is significant difference in management intensity of external relationship management process in terms of business size ($p < 0.05$) and business age ($p < 0.04$). In addition, based on the importance level there are significant differences in marketing and sales process of products and services in terms of business age ($p < 0.05$), whereas according to business size there is no difference in the level of importance between business processes. These findings can then be used as a support in managing business processes at UMKM in line with business development.

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