

# Analysis of information quality attribute for SME towards adoption of research result

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**Abstract.** Small and Medium Enterprises (SME) holds significant role in fostering Indonesian economy. However, the research that is supposed to support the development of SMEs business has not yet fully adopted or utilized. Information attributes may be used as the benchmark to find the intention of SMEs from a research result and develop the strategy of quality information for all organizations both SMEs and the researcher. Therefore, because of the importance of information quality attribute required by SMEs, the research aims to analyse the information quality required by SMEs to clarify the information quality into the dimension of information quality. The research was started by distributing online questionnaire to SMEs. The questionnaire result showed that the content dimension is the most aspect required by SMEs, followed by time and form dimension, respectively. Quality information attribute required by SMEs from a research is that the result may be applied to the business.

**Keywords:** SMEs, quality information, dimension of information quality

## 1. Introduction

Small Medium Enterprises (SMEs) is an individual business or business with legal entity that runs the activity in economy and operated in a simple manner with the purpose to gain profit with certain limitations [1]. In developed countries, the number of employees working in one enterprise or establishment tends to be one of the main criteria used in size categorization of SMEs [2]. SMEs as one of the alternatives of new job opportunity also contributes in fostering the economic growth during post-monetary crisis in 1997 when the large enterprises experienced difficulties in developing their business. Additionally, SMEs also has significant contribution to the regional income and state income of Indonesia.

However currently, the adoption or absorption of research result (both from Universities and research agencies) has unfortunately not yet fully utilized by the community, especially the SMEs. SMEs especially in the manufacturing sector make a significant contribution to economic growth, yet most of the research sector has focused on large organizations [3]. Therefore, it is necessary to have a link or media to facilitate the SME and researchers so that the requirements of SMEs may be fulfilled and the research result may be fully utilized. In order to realize this matter, it is necessary to understand what information attributes are required by SMEs from a researcher. Information attributes may be used as the benchmark to improve the effectiveness of information system and to develop the strategy of quality information for all organizations both SMEs and the researcher [4].

Quality information shows that information is presented according to the expectation and requirements of the users based on the dimensions of information quality. Useful information must be supported by three pillars of (1) people-targeted (accurate); (2) relevant, that is the information must



confirm the data and target of the data or information so that the information will be beneficial to the users; and (3) on time [5].

Quality dimension is important to see the condition of quality information, which may be considered from several aspects. According to James A. O'Brien [6], three dimensions of information quality are time, content and form. The time dimension describes the time period that the information deals with and the frequency at which the information is received, content dimension describes the scope and contents of the information, and the form dimension describes how the information is presented to the recipient.

By understanding what kind of information is required and desired by SME, it is expected that in the future, the research result may be fully adopted by SMEs. Therefore, because of the importance of information quality attribute required by SMEs, the research aims to analyze the information quality required by SME to clarify the information quality into the dimension of information quality.

## 2. Methods

The method used in this research is descriptive analysis method. Descriptive analysis is a method that aims to describe or provide an overview of a research object under study through samples or data that have been collected and make conclusions generally accepted [7]. This research is included into descriptive research to give clear and detailed description on the information quality required by SME so that they may adopt the research result.

Data collection was conducted using interview, questionnaire distribution, and observation. The selected respondents were the owner of SMEs in Jakarta, Bogor, Depok, Tangerang and Bekasi from various business types. The number of respondents is 124 respondents.

Data collection was assisted by online. Questionnaire is a research instrument consisting of a series of questions (or other types of prompts) for the purpose of gathering information from respondents. The questions in the questionnaire were related to the facts and opinion of the respondents, and the questionnaire is closed type where respondents were requested to answer the questions by choosing the provided alternatives. Characteristics questionnaire of SME actors were multiple choices which aimed to find out the characteristics of markets and target customers. Attribute questionnaire was used to find the factors that mostly influenced the customers (SME) in terms of research to support the business.

In preparing the questionnaire, the research utilized Likert scale. Likert scale is used to measure the attitude, opinion, and perception of individual or a group of individuals regarding the social phenomenon. Data measurement used in this research was Likert scale to measure the research variables such as the attitude, opinion, and perception of individual or a group of individuals [7].

## 3. Result and discussion

### 3.1. Description of respondents

The questionnaire result (Figure 1) shows that the respondents who run a business or have a business were dominated by male of 57% and female of 43%. The questionnaire result did not represent the overall SME actors in because Indonesia is home by millions of businesswomen.

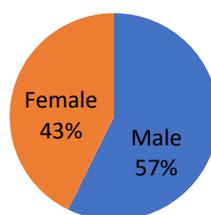
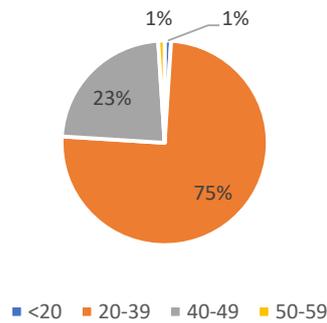


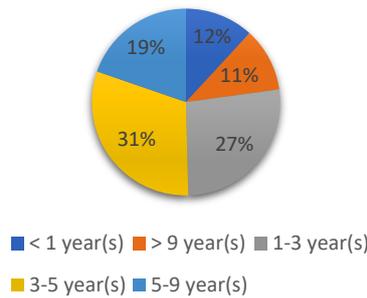
Figure 1. Sex of respondents

From the questionnaire result in figure 2, it shows 75% of the respondents were 20-39 years old, 23% of 40-40 years old, 1% of 50-59 years old, and 1% of < 20 years old. The result shows that many business persons were between 20-29 years old. Majority of SME actors were in the productive age range, with the population of 57.5%.



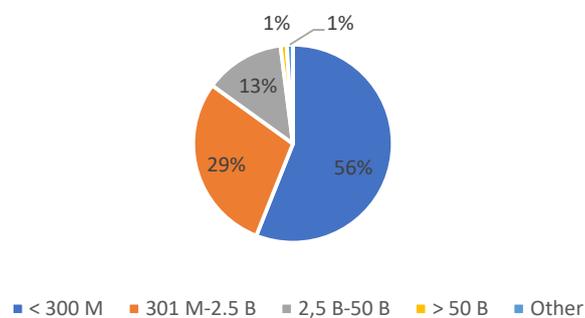
**Figure 2.** Age of respondents

In figure 3, there are 31% respondents who has been in the business for 3-5 years. Then 27% respondents have been in the business for 1-3 years, and 12% were less than one year and 11% has been in the business for more than 9 years. The percentage of length of business above 5 years is decreasing because many businesses fails in the first years. Many factors have caused the business failed to survive such as the competition, low commitment in doing the business as well as financial problems. Not only in Indonesia, about 20% of small businesses fail in their first year, and 50% of small businesses fail in their fifth year in the US [8]. Lu and Beamish [9] observed similar failure rates in Australia, the United Kingdom, Japan, Taiwan, and Hong Kong. Wheelen and Hunger [10] found the high failure rate to be largely due to informal strategic planning processes and a lack of systems to keep track of the SMEs' performance.



**Figure 3.** Length of respondents' SME business

The questionnaire results on the turnover or income (Figure 4) of the respondents shows that mostly less than 300 million IDR, which accounts for 56%. Then 29% respondents have the turnover of 301 million to 2.5 billion and 13% respondents have annual profit of 2.5 billion to 50 billion. This shows that the majority types of business are micro business.

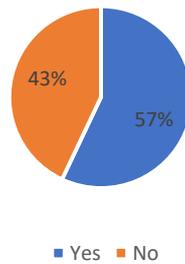


**Figure 4.** Average annual business income of the respondents

Micro business in Indonesia emerged largely due to the limited formal business opportunities, that may people switched to other business filed and started small business. This development shows the

growth of low quality economy during post-monetary crisis in 1998 where mostly developed sectors were informal sectors

In Figure 5., about 57% respondents said to unable to do their own research for the business and 43% of the respondents said to have their own research. This shows that the actors of SME indeed required other parties to do the research, especially in devising strategy and decision making for the business in the future.



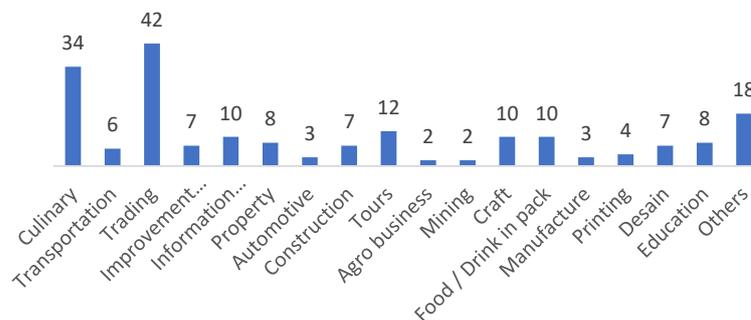
**Figure 5.** Capability of respondents to do the research

Then, in Figure 6, in terms of research costs, majority of respondents of 38% answered to be able to pay IDR. 2,000,000. The second highest of 30% respondents were able to pay research service of IDR. 5,000,000. Only few (8%) who were able to pay research above IDR. 15,000,000. These may be related to the previous questionnaire result that showed that most business of the respondents were in micro category. Therefore, capability of research was insignificant.



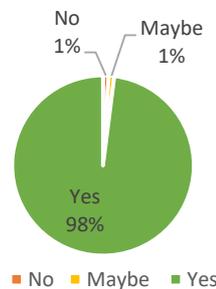
**Figure 6.** Capability of SME to fund the research

Business fields based on the respondents result in this research were mostly trading of 42 respondents as shown in Figure 7. The second highest business fields were culinary of 34 respondents. Trading business may include small trading (retailer), wholesale, agency, and also export and import. The questionnaire result gives the information related to the previous result that showed that the respondents in trading field require research as the effort to better develop their business.



**Figure 7.** Business field of the respondents

When respondents were asked the importance of research result to their business, as much 98% answered that the research is the most important matter, as shown in Figure 8. Although the market research does not guarantee 100 percent successful business, this step may reduce the business risk and expand the potential of business success.



**Figure 8.** Percentage of research interest for SME

Based on this research SMEs urgently require a research for their business. Even from a business beginner to the already doing business in a long time, they need it. SMEs need improvement as well as large organizations whatever their field business.

### 3.2. Information Quality Attribute

Research is a process of steps used to collect and analyse information to increase understanding of a topic or issue [11]. The research should be feasible for adoption by community or SMEs from the beginning to help developing their business.

To find out what kind of information is required by SMEs, the questionnaire was distributed online to the respondents (SMEs). The questionnaire is a measurement tool to find out the importance information attribute from a research result for SMEs. The followings are the Information Quality Attribute [6] which are adopted in form of questions to be distributed to the SME owners.

**Table 1.** Information quality attribute for questionnaire

No.	Attribute
1	Information from the research result must be up to date
2	Information from the research result must be available at any time necessary
3	Research result must be able to present information as frequent as necessary
4	Research result must be able to present past, present and future information
5	Information must be error-free
6	Research result must be able to present information relevant to the required information
7	Information must be complete/comprehensive
8	Research result must be applicable to the business
9	Research result must be able to present required (accurate) information
10	Information has broad or narrow scope according to the requirement
11	Information must be able to present work performance (progress, completed job, current achievement, etc.)
12	Information presentation must be easy to understood
13	Information must be presented in detail
14	Information may be adjusted for future situation
15	Information is presented in visual (graphic, info graph, etc.)
16	Information is presented in various media (paper, video, etc.)

Quality dimension is said to be the condition of quality information, which may be considered from several aspects. According to O'Brien [6], three dimensions of information quality are time, content and form. Time dimension emphasizes that the information should be provided when

needed, be up-to-date when it is provided, should be provided as often as needed and having information about the past, present, and future time periods.

Content dimension emphasizes that information should be free from errors, should be related to the information needs of a specific recipient, all the information needed must be provided, only the needed information should be provided, information can have a broad or narrow scope, or an internal or external focus, and information can reveal performance by measuring activities accomplished and progress made. Form dimension emphasizes that that information must be attractive and easy to understand and use. [6]

Quality dimension is the respondent (SMEs) requirements to be accepted when the research is conducted to their business. Figure 9 is the result of classification of information attribute to the quality dimension. Content dimension consists of the types of information required by SMEs such as error-free information, and the research result must be able to present information relevant to the required information, present complete/comprehensive information, the research result must be applicable to the business, the research result must be able to present the required information (accurate), information has broad or narrow scope according to the requirement, and information is able to present work achievement (progress, completed job, current achievement, and so forth). Percentage of content dimension is higher than other dimensions.

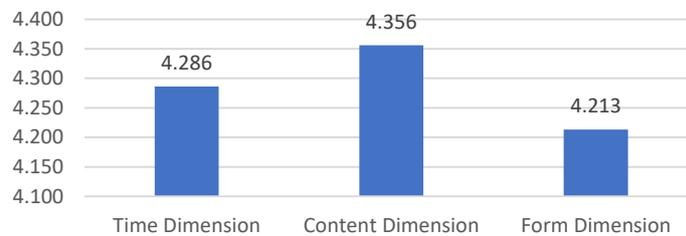


Figure 9. Quality dimension of SME information

Time dimension has the second largest percentage, that is the information from the research result must be up to date, information from the research result must be available at any time necessary, research result must be able to present information as frequent as necessary, and research result must be able to present past, present and future information. The third dimension is form dimension, which describes the what form of research result is required by SMEs such as the presentation must be easy to understood, information must be presented in detail, information may be adjusted for future situation, information must be presented in visual (graphic, info graph, etc.), and information must be presented in visual (graphic, info graph, etc.).

Based on the previous questionnaire result, it was find out that the content dimension has the highest percentage required by SMEs if the research is to be used for their business. The graphic of information quality attribute shows in detail the respondent requirement for the research result (Figure 10). The three attributes of information quality required by the respondents (SMEs) if the research is to be done then the result should be applicable to the business, the result must be able to present the required information (accurate) and information from the research result must be up to date.

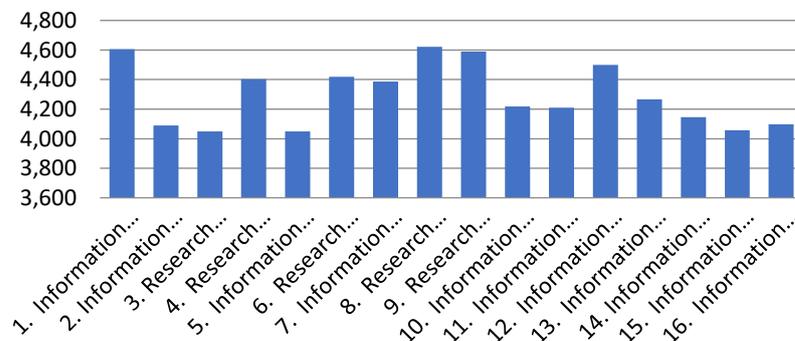


Figure 10. Information quality attribute of SME

#### 4. Conclusions

Based on the research, it was found that respondents with length of business from one year is unable to do their own research for the business. They claimed that can pay research fees according to the income they earn. Because research is important for them, information quality needed. Dimension of information quality which important based on the research is the content dimension has the highest percentage required by SMEs, then followed by time dimension and form dimension. The graphic of information quality attribute shows in detail the respondent requirement for the research result. The most important information quality attribute required by the respondents (SMEs) if the research is to be done then the result should be applicable to the business, the result must be able to present the required information (accurate) and information from the research result must be up to date. The three attributes are the most important and required by SMEs if a research is to be done to their business.

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