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# **Analysis of Customer Mindset Change and Accounting Practice of Garbage Bank as Medium of Edupreneurship a Study on Garbage Bank of Badegan, Indonesia**

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## **ABSTRACT**

This study aims to (1) determine whether there is a change in the individual mindset associated with garbage bank existence and (2) determine the accounting practices in Garbage Bank of Badegan (GBB). Garbage bank is the manifestation of public awareness to actively address the issue of garbage management today. Thus, garbage bank is medium for communal education and entrepreneurship. Its concept basically adopts bank concept. It is not the money which is saved but garbage. Garbage bank also requires professional management, including the application of good accounting system so that accountability and transparency can be run. This research was conducted at the *Gemah Ripah* GBB in Bantul, Yogyakarta, Indonesia by distributing questionnaires to customers to determine customer mindset change before and after joining the bank. Change of mindset is viewed from environment and the economy standpoint. Having passed the instrument validity test with Pearson bivariate method and reliability test with Cronbach's Alpha Scale method, the questionnaires were distributed. Data processing employed the pair sample t test. The results showed that there was a change in the public mindset before and after they join GBB. Garbage is no longer burned or thrown into the river, but managed into value added products.

Keywords: Garbage bank, Information system, Accounting system, Education and Entrepreneurship (*Edupreneurship*)

## **1.1. INTRODUCTION**

Garbage is a big issue in Indonesia because it causes disease and flood. Accumulation of garbage in the final disposal also leaves problems related to limited

landfill areas and odor effects. It is often difficult for the Department of Public Works to acquire land for final disposal (landfill). Meanwhile, the amount of garbage grows bigger. Today, Indonesian population reaches 250 millions. If on average each family has 3 children, the total numbers of households reaches 50 millions. If every household produces 2 kg of garbage per day, the entire households will produce 100 million kilograms (100 thousand tons) of garbage. How broad are the areas prepared for the landfill?

Therefore, the researcher argues that garbage management based on landfill, which is so far done, is not sufficient to solve the problem. The management should be based on building public awareness to manage garbage so that public education on this matter should be initiated. Thus, garbage is not the government's responsibility, but every individual citizen's.

Garbage can be reused and recycled so that garbage has added value and its volume is reduced. A group of people pioneered by Bambang Suwerda in Badegan Village, Bantul have managed their garbage. On 23 February 2008, they set up a bank of garbage named 'Gemah Ripah' Garbage Bank of Badegan (GBB), claimed to be the first garbage bank in Indonesia.

GBB has been running approximately six years. Its purpose is to educate the the local community of Badegan to maintain a healthy environment. Its activities include reducing, sorting, reusing, recycling, and saving garbage. Instead of saving unit, GBB also has a recycling business unit.

When GBB receiving garbage from customers, GBB weights and records it in a saving account. The account records its weight and cash. The recording process and administration is done in place. The process still runs manual. It is not computerized yet. The accounting system is often not run through a proper process.

The Customers of GBB has reached 453 individual customers and 12 customers groups (social communities and schools), with service every day. Customers are no longer only from Badegan but also from other villages, even from outside the sub-district of Bantul. With increasing numbers of customers, of course, the management is increasingly complex. Accuracy and speed of information are also highly required. Therefore, GBB plans to transform itself from a manual to a computerized system, especially in financial management, so that the error in the calculation can be avoided. Therefore, GBB needs proper accounting practices and proper accounting system.

In addition, this study also aims to see whether there is a change in the mindset of the individuals before and after becoming a member of GBB. If the change in mindset has occurred, it means that the educational process has

been successful. Change of mindset associated with garbage management would be more complete if it is accompanied by an entrepreneurial spirit. Entrepreneurial spirit will encourage individuals to create opportunities (opportunity creating), not just to look for opportunities (opportunity-seeking), to produce innovation (innovation), and to take measured risk (calculated risk taking) (Ciputra, 2009). With those three things, turning waste and garbage into gold is not impossible.

Thus, the research problems can be formulated as follows: (1) How does GBB work on accounting practices; and (2) Is there any change in the mindset of the individuals about environmental health, economics, and accounting practices before and after joining GBB?

## **2. THEORETICAL AND HYPOTHESES DEVELOPMENT**

### **2.1. Education and Entrepreneurship**

The process of educating individuals about health and environmental hygiene is necessary, especially in garbage management. Public education is needed so that the individuals have knowledge and awareness about the importance of garbage management. This is very important, since the government alone may not be able to cope with thousands tons of garbage a day.

In addition to education on garbage management, individuals also need to be given knowledge about entrepreneurship. If people have the spirit of entrepreneurship then the individuals will be able to appreciate added value of garbage. For example, they reduce, reuse, recondition, and recycle household garbage.

Entrepreneurship can be grouped into four, namely business entrepreneur, government entrepreneur, social entrepreneur, and academic entrepreneur (Ciputra, 2009). Business entrepreneur can be divided into two, namely owner entrepreneur and professional entrepreneur. Owner entrepreneur is the creator and owner of the business, while the professional entrepreneur is an individual who has an entrepreneurial power but practices in the company of others. Government entrepreneurship is a leader who has a spirit and entrepreneur skills and who is able to realize the entrepreneurial government. The example of entrepreneurial government is the Prime Minister of Singapore, Lee Kuan Yew (Ciputra, 2009).

Furthermore, a social entrepreneur is the founder of the social organization which raises public funds to carry out social tasks, such as Mother Theresa of Calcutta. The latter category is the academic entrepreneur, namely academics who teach and

administer educational institutions with entrepreneurial patterns and styles yet maintain the lofty goals of education.

Entrepreneur are those who have always worked hard and creatively to create business opportunities, have utilized the opportunities gained and then have manipulated the creation of alternatives as new excellent business opportunities. Thus, the entrepreneurial spirit will mobilize the community to create added value over existing garbage with creativity.

Excellence is largely determined by creativity. Creativity in turn creates good innovations related to product / service, science and technology, processes, management systems, strategy and marketing policies, and strategies and policies in making alliances and business expansion. Innovation is needed to win the competition. In other words, competition has driven an individual or organization to perform a variety of innovations. Innovation is created due to the high entrepreneurial practices within the individual who is in the organization.

Business innovation conceived by entrepreneurs is often associated with the creation of small businesses. This is true, but it is not limited to small businesses. It also can include a larger scale, the so-called intermediate scale. Whatever the shape and scale of its business are, the same thing in entrepreneurship is to encourage the creation of business activities in the organization's business units. GBB is an example of a business unit established with innovation and creativity.

## **2.2. Garbage Bank**

Indonesia government has set up garbage management issued Law No. 18 of 2008 on Garbage Management (Indonesia, 2008) and Regulation of the Minister of Home Affairs No. 33 of 2010 on Guidelines for Garbage Management (Indonesia, 2010). Thus, the legal framework has been created, but it is still inadequate garbage management. Garbage still stays as a problem everywhere, both in cities and towns. Piles of garbage become the source of the disease, leading to clogged drains and flooding; and, make the place look shabby and dirty.

In Act 18 of 2008, the government will provide incentives for institutions, agencies or individuals who innovate in garbage management. Incentives can be rewards and/or giving subsidies. Thus, the government is encouraging anyone to participate actively in garbage management.

Garbage bank operates like banks in general, and accepts customer deposits and withdrawals. But, the customer saves garbage, not cash in the bank. Garbage will be recorded and subsequently converted into cash. Thus, customers will have cash savings. Savings account can be taken as well as transactions in commercial banks.

However, in practice, there is garbage bank that accepts

garbage and keeps it in a particular room. After a lot of garbage is collected, the bank calls partners to estimate the price of the garbage. After the price agreement, then the bank converse garbage into cash. This will certainly reduces the risk of any price difference between the garbage bank and partners who purchase the garbage (<http://www.forplid.net>, accessed 21 April 2009).

When receiving garbage from customers, GBB weights and records it in a saving account. The account records its weight and cash. The recording process and administration are done in place. The process still runs manually. It is not computerized yet. The accounting system is often not run through a proper process.

Customer of GBB has reached 453 individual customers and 12 customer groups (social community and schools). Garbage bank service is performed every day. Customers do not only come from Badegan but also from other villages, even from outside the sub-district of Bantul. Customers grow, and, of course, the management increasingly becomes complex. Demand on accuracy and speed of information is also higher. Therefore, the GBB want to transforms itself from manual system to a computer system, especially in financial management, so that the error in the calculate avoided.

### **2.3. Accounting Practices of GBB**

The growing customers of GBB require a more professional management in order not to harm the client. A big number of customers results more numerous and complex transactions. Moreover, GBB also has to diversify its business, namely innovating garbage into handicraft (can be seen in Figure 1)



**Figure 1. The Examples of Garbage Handycraf (Reduce, Reuse, Recycle)**

Finance potentially causes problems. Therefore, transparency and the ability to manage financing are very important. Bookkeeping activities cover all expenses and revenue transactions which occur in the operational activities. Recording or orderly bookkeeping is very useful for the followings (1) assisting in decision making both in short and long term; (2) building relationships with third parties, such as investors and banks; and (3) assisting the planning of activities, particularly planning activities that will have an impact on cash.

Garbage bank does not need a complicated bookkeeping. The bookkeeping includes cash book, passbook to customers, as well as the financial reporting process of balance sheet, and statement of income each period. In addition, accounting system can record how much garbage every period is. By proper financial reporting, the management performance can be monitored easily.

## **2.4. Changes in Society Mindset**

Garbage management in Indonesia is conducted by the government. However, the garbage problem is never been overcome. So far, the government has made additional garbage disposal sites in line with the rise in the garbage volume. However, it turns out that the solution is not the most appropriate solution. Additional land for the

final disposal (landfill) is only temporary solution. Over time, the landfill will not be able to accommodate the tons of garbage. Therefore, garbage management should be done by all citizens. It is not just the responsibility of the government. The government must change the mindset of the individual citizen.

Garbage should be managed from upstream to downstream. Garbage must be managed from the management activities producing garbage up to the landfill management. It is only possible if people are actively involved in their own household garbage management. If each household manages their own waste, the government work will be lessened and garbage problem will be solved.

## **2.5. Hypothesis Development**

The government has issued laws and regulations relating to the management of garbage bank, namely Law No. 18 of 2008 on Garbage Management and Regulation of the Minister of Home Affairs No. 33 of 2010 on Guidelines for Garbage Management (Indonesia, 2008). In addition, based on Law No. 18 of 2008, the government will provide incentives for institutions, agencies or individuals who are creative in garbage management. Incentives can be rewards and or subsidies. Thus, the government is encouraging everyone to participate actively in garbage management.

Currently garbage bank is popular in Indonesia. GBB is one form of community participation in garbage management through innovation and creativity. Willingly, individuals come by themselves to GBB to be customers. Therefore, the formulation of the hypothesis is as follows:

**Ha: There is a change in the mindset of the individual before and after becoming customer of GBB**

## **3. RESEARCH METHODS**

This research was carried out through direct observation and interviews with GBB managers to determine the extent to which accounting system is required in the bank. In addition, researcher also searches for data by distributing questionnaires. Questionnaires were used to obtain data related to the presence or absence of individuals' mindset change before and after becoming customers of GBB. The respondents were the customers of GBB.

Questionnaire consisted of 10 questions, which were grouped in two indicators, namely the environment and the economy indicator. There were six items of questions for environmental indicators and four questions for economic indicators.

The questionnaire was measured using a Likert scale, ranging from the Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. Before the entire questionnaire was circulated, the researchers tested the

validity and reliability of the above items question. Validity testing was done by using bivariate Pearson, while the reliability test used Cronbach's Alpha (Rizkiyani, 2013). After all instruments were valid and reliable, questionnaires distributed to all respondents (Hall, 2010). The number covered 60 respondents (13% of GBB customers). Meanwhile, the weighting of each respondent's answer in the scale is as follows (Table 1):

**Table 1. The weighting of Item Question**

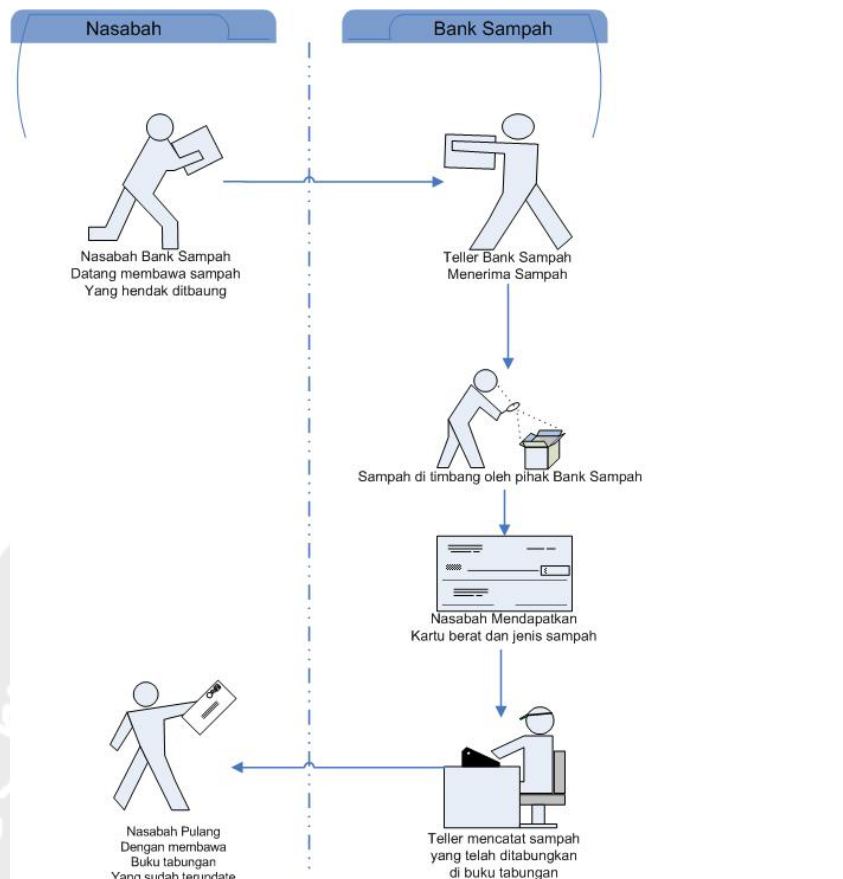
| The Answers       | Weight Value |
|-------------------|--------------|
| Strongly agree    | 4            |
| Agree             | 3            |
| Disagree          | 2            |
| Strongly Disagree | 1            |

Source: Hall (2010)

## **4. RESULTS AND DISCUSSION**

### **4.1. GBB Accounting Practice**

Researcher conducted interviews related directly to the manager of the accounting practices employed by GBB. The results shows that GBB has recorded each transaction, but has not used the correct accounting system. When garbage is deposited, its weight is recorded in the bank's book, but not in customers'. The customers receive the amount of cash only without any description of the type of garbage. The cash recorded in the book of savings is based on the predetermined list price of each type of garbage. This bears the risk of loss if the purchasing price list garbage is not always updated. The process of saving the garbage can be seen in the following figure 2.

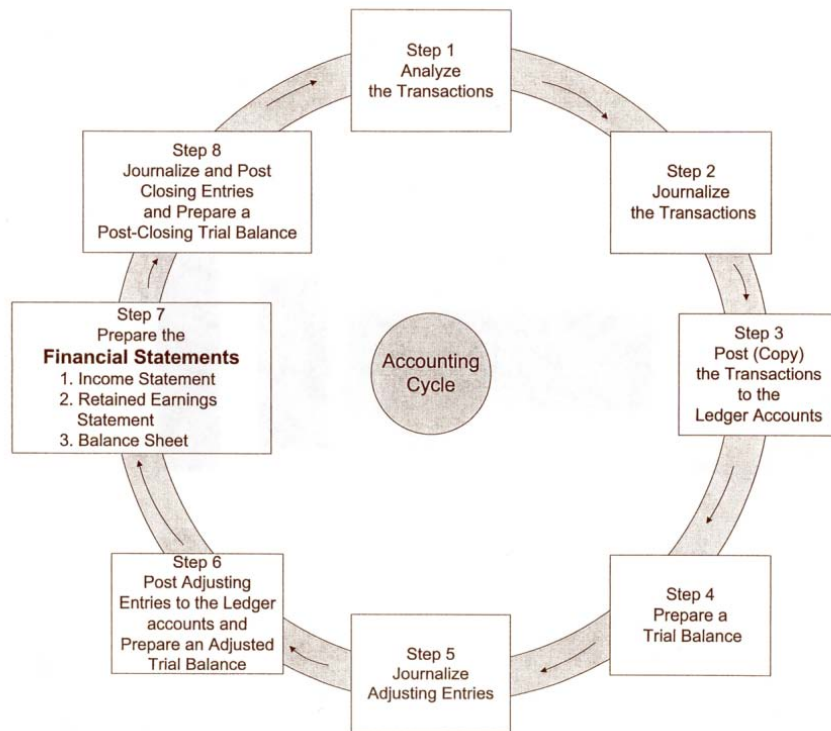


**Figure 2. Saving/Depositing Process**

Thus, the recording process is only related to data recording. Journal entry on transactions and posting to the general ledger has not been done. The accounting process which is not carried out systematically brings difficulties for GBB to prepare a monthly garbage report and annually financial statements. GBB also faces difficulty to calculate garbage inventory in the bank. Moreover, GBB also cannot reliably determine the profit margin before all the garbage sold to partner (recycling company).

Encouraged by these conditions, the researcher offers solution in the form of a systematic application of accounting and an accounting which is in accordance with generally accepted accounting standards in the manufacture of computerized accounting systems ranging from the transaction, recording, up to financial reporting.

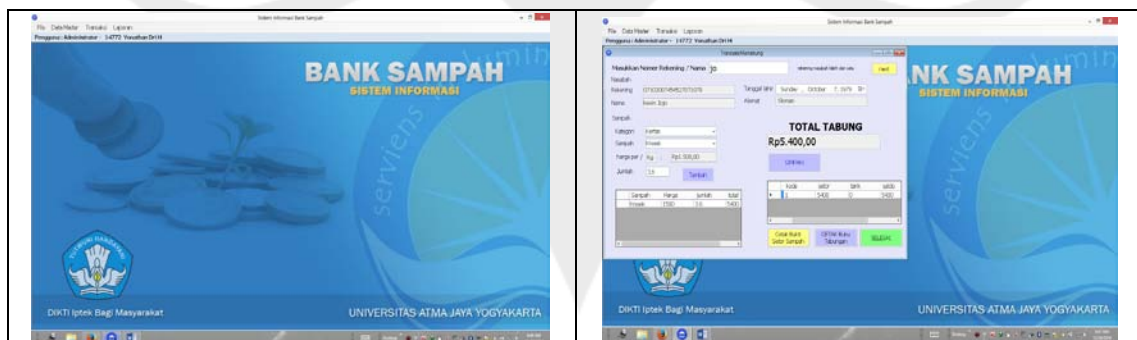
Accounting process that should be applied is appropriate accounting cycle, in accordance with generally acceptable accounting standards (see Figure 2). Accounting standards for garbage bank as part of small and medium enterprises (SMEs) should refer to the SAK ETAP rules (IAI, 2010).

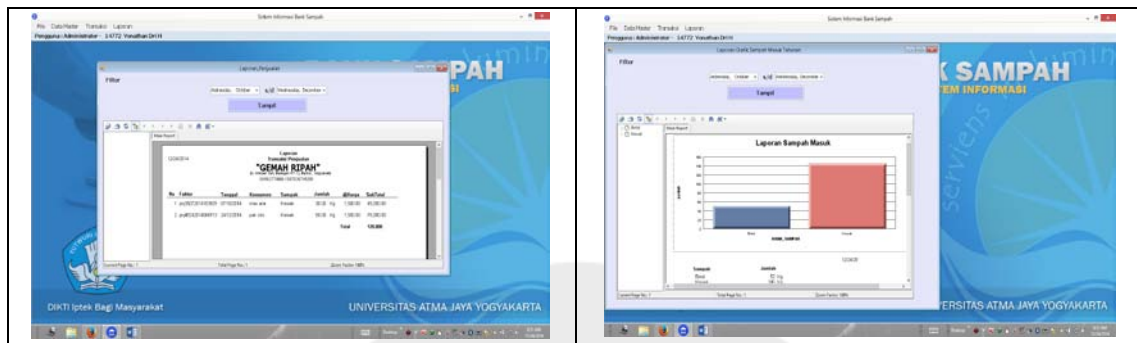


**Figure 2. Accounting Cycle**

(Source: [www.google.com](http://www.google.com), accessed 12 April 2013)

Furthermore, to facilitate the practice of accounting, computer-based accounting system that is built can be seen in Figure 3. SMEs in Indonesia began to make ICT as one part of a strategic plan for the development of SMEs in the future (Govindaraju, 2011). However, the utilization of information technology computer will not have a positive impact if not accompanied by appropriate support strategies and synergies SMEs are adopting these technologies (Ghobakhloo *et al.*, 2012).





**Figure 3. Computer-Based Accounting System**

Source: Handarkha *et al.* (2014)

#### 4.2. The Change of Individuals' Mindset

This study tried to see whether individuals who belong to GBB undergo mindset change associated with garbage management in their home environment or if they become customers of the bank just because they follow the trend in Indonesia. Therefore, this study attempts to measure their attitude towards garbage before and after becoming GBB customers.

Data were obtained through questionnaires. Questionnaires were distributed as many as 60 copies and 59 copies (98%) questionnaires were filled completely. 70% of the survey respondents were female and 30% were male. From the data it can be seen that the majority of bank customers are women.

Respondents' Motivation of joining GBB can be summarized as follows: 1) customers earn extra money (30%); 2) GBB is managed professionally (30%); 3) GBB is managed transparently (10%); the customers get the knowledge of garbage management (50%); and 4) the customers may be initiate garbage bank in their neighborhood (30%). The total percentage does not reach 100% because each respondent may have more than one motivation. The biggest motivation is to gain knowledge of garbage management. This proves that the awareness of the community to participate in the higher garbage management. Meanwhile, respondents' answers related to the professional management of GBB only reach 10%.

After becoming customer, respondents obtain some benefits from the existence of garbage bank, among others, added money (50%), clean and healthy home environment (70%), and pride of participation in keeping the environment (60%), and pride of following trend (10%). The total percentage does not reach 100% because each respondent can obtain a double benefit. The benefits of healthy and clean home environment reach 70%. This fact proves that individuals are starting to participate in garbage management in their home environments. If every citizen manages household garbage independently the issue of garbage management in Indonesia will be resolved.

In fact, 60% of respondents state that they feel proud because they can act in keeping the environment clean. This proves that the individuals began to realize the self-actualization of their participation.

#### 4.3. Validity and Reliability Test Results

Items totaling 10 questions are divided into two, namely six items environmental indicators and four items of economic indicators. The validity of test results using bivariate Pearson can be seen in Table 2. The test results showed the validity of one item of environment, that is, Ev\_4 does not correlate significantly to the total score so that the item (instrument) is invalid. It can be seen from the sig. (2 tailed) that Ev\_4 items (0.236) is greater than 5%. Thus, the item should be removed (not applicable).

**Table 2. The Result of Bivariate Pearson Analysis**

|      |                     | Score Total |
|------|---------------------|-------------|
| Ev_1 | Pearson Correlation | .464**      |
|      | Sig. (2-tailed)     | .000        |
|      | N                   | 59          |
| Ev_2 | Pearson Correlation | .440**      |
|      | Sig. (2-tailed)     | .000        |
|      | N                   | 59          |
| Ev_3 | Pearson Correlation | .339**      |
|      | Sig. (2-tailed)     | .009        |
|      | N                   | 59          |
| Ev_4 | Pearson Correlation | .157        |
|      | Sig. (2-tailed)     | .236        |
|      | N                   | 59          |
| Ev_5 | Pearson Correlation | .569**      |
|      | Sig. (2-tailed)     | .000        |
|      | N                   | 59          |
| Ev_6 | Pearson Correlation | .526**      |
|      | Sig. (2-tailed)     | .000        |
|      | N                   | 59          |

|            |                     | Score Total |
|------------|---------------------|-------------|
| Ec_1       | Pearson Correlation | .492**      |
|            | Sig. (2-tailed)     | .000        |
|            | N                   | 59          |
| Ec_2       | Pearson Correlation | .515**      |
|            | Sig. (2-tailed)     | .000        |
|            | N                   | 59          |
| Ec_3       | Pearson Correlation | .725**      |
|            | Sig. (2-tailed)     | .000        |
|            | N                   | 59          |
| Ec_4       | Pearson Correlation | .503**      |
|            | Sig. (2-tailed)     | .000        |
|            | N                   | 59          |
| Skor Total | Pearson Correlation | 1           |
|            | Sig. (2-tailed)     |             |
|            | N                   | 59          |

Meanwhile, the reliability test is conducted by using Cronbach's Alpha. The variabel is reliable if Croncbach's Alpha value is greater than 0.6. The result shows that the value of Cronbach's Alpha is 0685 (greater than 0.6). So, the variable is said reliable.

**Table 3. Reliability Analysis-Scale (Alpha)**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|----------------------------------------------|------------|
| .658             | .667                                         | 9          |

#### 4.4. Descriptive Statistics

Descriptive Statistics data show that the minimum value of each item is 1 and the maximum value of each item is 4. Mean each item is above 2 and above 3, meaning that each questionnaire response is agree and strongly agree. Table 4

presents descriptive statistics complete data.

**Tabel 4. Descriptive Statistics**

|                    | N  | Minimum | Maximum | Mean | Std. Deviation | Variance |
|--------------------|----|---------|---------|------|----------------|----------|
| Ev_1               | 59 | 1       | 4       | 3.25 | .756           | .572     |
| Ev_2               | 59 | 1       | 4       | 2.49 | .728           | .530     |
| Ev_3               | 59 | 1       | 4       | 2.58 | .700           | .490     |
| Ev_5               | 59 | 1       | 4       | 3.05 | .680           | .463     |
| Ev_6               | 59 | 1       | 4       | 3.27 | .611           | .373     |
| Ec_1               | 59 | 1       | 4       | 2.31 | .676           | .457     |
| Ec_2               | 59 | 1       | 4       | 2.92 | .624           | .389     |
| Ec_3               | 59 | 1       | 4       | 2.86 | .655           | .430     |
| Ec_4               | 59 | 1       | 4       | 2.76 | .652           | .425     |
| Valid N (listwise) | 59 |         |         |      |                |          |

#### 4.5. Paired Sample T Test Result

The results of the mean difference test using paired sample t test can be seen in Table 5. The results show that there is a significant change in the mindset of the respondents before and after joining BBG. This is indicated by the p value (sig) 0.001 which is smaller than alpha (5%). Thus, the alternative hypothesis is accepted.

**Table 5. Paired Samples Test**

|                                                      | Paired Differences |                   |                       |                                                 |       | t      | df | Sig.<br>(2-tailed) |
|------------------------------------------------------|--------------------|-------------------|-----------------------|-------------------------------------------------|-------|--------|----|--------------------|
|                                                      | Mean               | Std.<br>Deviation | Std.<br>Error<br>Mean | 95% Confidence<br>Interval of the<br>Difference |       |        |    |                    |
|                                                      |                    |                   |                       |                                                 |       |        |    |                    |
|                                                      |                    |                   |                       | Lower                                           | Upper |        |    |                    |
| Pair 1 ScoreTot<br>(Before) –<br>ScoreTot<br>(After) | -1.424             | 3.271             | .426                  | -2.276                                          | -.571 | -3.344 | 58 | .001               |

Individuals' mindset associated with habits in garbage management has changed before and after becoming garbage bank customers. Before becoming a garbage bank customers, majority of customers consider that garbage is a source of disease. Thus they always burn trash. But after becoming customer of garbage bank, they assume that the garbage is not the source of the disease but it is a source of additional income. Garbage are collected and sold to the bank. Even the garbage bank teaches them to add value to garbage, that is, by changing food, detergent, coffee wrappers and so become attractive handicrafts. The handicrafts are wallet, bag, vest, flower vases and others. In fact there are some customers who make garbage management as a new profession, namely garbage handicraft makers. They sell the handicrafts to markets or souvenir.

In this way, the entrepreneurial spirit has emerged. How individuals can create opportunities, create innovation and hone their creativity to perform value-added activities ranging from one type of craft to various kinds of handicrafts with varying price and usability. Thus, the movement of garbage bank is really a means of education for the community in managing garbage. Even, it becomes a means of disseminating the entrepreneurial spirit to individual members and the surrounding community.

## **5. CONCLUSION**

GBB does not apply appropriate accounting system with generally acceptable accounting standards. The standardized and timely financial statements need to be reported. Thus the financial statements function as a basis for decision-making. In addition, GBB now is starting to be trusted by community so that its professionalism needs improvement.

The result of data test obtained by distributing questionnaires to GBB customers, using paired sample t test showed that there is a change in the mindset of customers before and after becoming GBB. At first, they regarded garbage as a source of disease and they always burned it. Now they see garbage as additional income for the family. They can directly sell to the bank or process garbage into beautiful and precious handicrafts.

Bank garbage is proven as a way out for the problem of garbage management in Indonesia. GBB plays its role as medium of education for the community and its customers in garbage management. Even, GBB is also able to disseminate entrepreneurship spirit to its customers and neighbourhood individuals.

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