

Analysis of customer mindset change and accounting practice of *garbage bank* as medium of *edupreneurship*

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Abstract: This study aims to determine: (1) whether there is a change in individuals' mindset associated with the existence of garbage bank and (2) 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. Thus, garbage bank is a medium for communal education and entrepreneurship. Its concept basically adopts the banking concept. It is not the money which is saved but garbage. This research was conducted at the *Gemah Ripah* GBB in Bantul, Indonesia by distributing questionnaires to customers. Change of mindset is viewed from environmental and the economic standpoint. Data processing employed the pair sample *t*-test. The results showed that there was a change in the public mindset before and after joining GBB. Garbage is no longer burned or thrown into the river, but it is managed into value added products.

Keywords: garbage bank; information system; accounting system; *edupreneurship*; customer mindset.

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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 odour 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 three 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 tonnes) 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 it 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), which was claimed to be the first garbage bank in Indonesia.

GBB has been running approximately for six years. Its purpose is to educate 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 receives garbage from customers, GBB measures the garbage's weight and then records it in a saving account. The account records garbage's weight and the amount of cash. The recording of process and administration is done on spot. The process is run manually and is not computerised yet. The accounting system often does not run through a proper process.

The number of customers of GBB has reached 453 in 12 customers groups (social communities and schools) with everyday service. Customers are no longer only from Badegan but also from other villages. They even come from outside the subdistrict 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 computerised system, especially in financial management, so that the error in the calculation can be avoided. Hence, 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:

- How does GBB work on accounting practices
- 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 1000 tonnes of garbage every 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 types, namely business entrepreneur, government entrepreneur, social entrepreneur and academic entrepreneur (Ciputra, 2009). Business entrepreneur can be divided into two types, 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 realise 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 organisation 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 is those who have always worked hard and creatively to create business opportunities, have utilised the opportunities gained and have manipulated the creation of alternatives as new excellent business opportunities. Thus, the entrepreneurial spirits will mobilise 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 organisation to perform a variety of innovations. Innovation is created owing to the high entrepreneurial practices within the individual who is in the organisation.

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 organisation's business units. GBB is an example of a business unit established with innovation and creativity.

2.2 Garbage bank

The Indonesia government has set up garbage management by issuing Law No. 18 of 2008 on Garbage Management (Republik Indonesia, 2008) and Regulation of the Minister of Home Affairs No. 33 of 2010 on Guidelines for Garbage Management (Republik Indonesia, 2010). Thus, the legal framework has been created. However, garbage management is still inadequate. Garbage still remains a problem everywhere, both in cities and towns. Piles of garbage become the source of diseases, lead to clogged drains and flooding, and make the place look shabby and dirty.

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

Garbage bank operates like a bank in general. It accepts customer deposits and withdrawals. The customer saves garbage, not cash, in a garbage bank. Garbage will be recorded and subsequently converted into cash. Thus, customers will have cash savings. Savings account can be taken in a similar way 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 reduce the risk of any price difference between the garbage bank and partners who purchase the garbage (<http://www.forplid.net>).

When receiving garbage from customers, GBB weights and records it in a saving account. The account records garbage's weight and the amount of cash. The recording process and administration are done in place. The process still runs manually because it is not computerised yet. The accounting system is often not run through a proper process.

The number of customers of GBB has reached 453 individual customers in 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. Some of them even come from outside the sub-district of Bantul. As the number of customers grows, the management becomes increasingly complex. Demand for 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 calculation can be 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).

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.

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 income statement 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.

Figure 1 The examples of garbage Handycraf (reduce, reuse, recycle) (see online version for colours)



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 (Republik Indonesia, 2008, 2010). 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. They usually discard or burn garbage, but now they collect and sell it to GBB. 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, to Strongly Disagree. Before the questionnaires were circulated, the researchers tested the validity and reliability of the question items. Validity indicates the extent to which the precision and accuracy of a measuring instrument performs its measuring functions (Azwar, 2000). The reliability of a measure indicates the stability and consistency with which the instrument is measuring the concept and helps to assess the 'goodness' of a measure (Sekaran, 2003). Thus, the reliability and accuracy of the measurements show accuracy and consistency of measurement, while the validity indicates the accuracy of measuring instruments (Hartono, 2014).

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 were distributed to all respondents (Hall, 2010). The survey 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

<i>The answers</i>	<i>Weight value</i>
Strongly agree	4
Agree	3
Disagree	2
Strongly Disagree	1

Source: Hall (2010)

4 Result 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 by bank. The customers receive the amount of cash without any description of the type of garbage. Cash recorded in the book of savings is based on a predetermined list price for each type of garbage. This bears the risk of loss if the purchasing price list for garbage is not frequently updated. The process of saving the garbage can be seen in Figure 2.

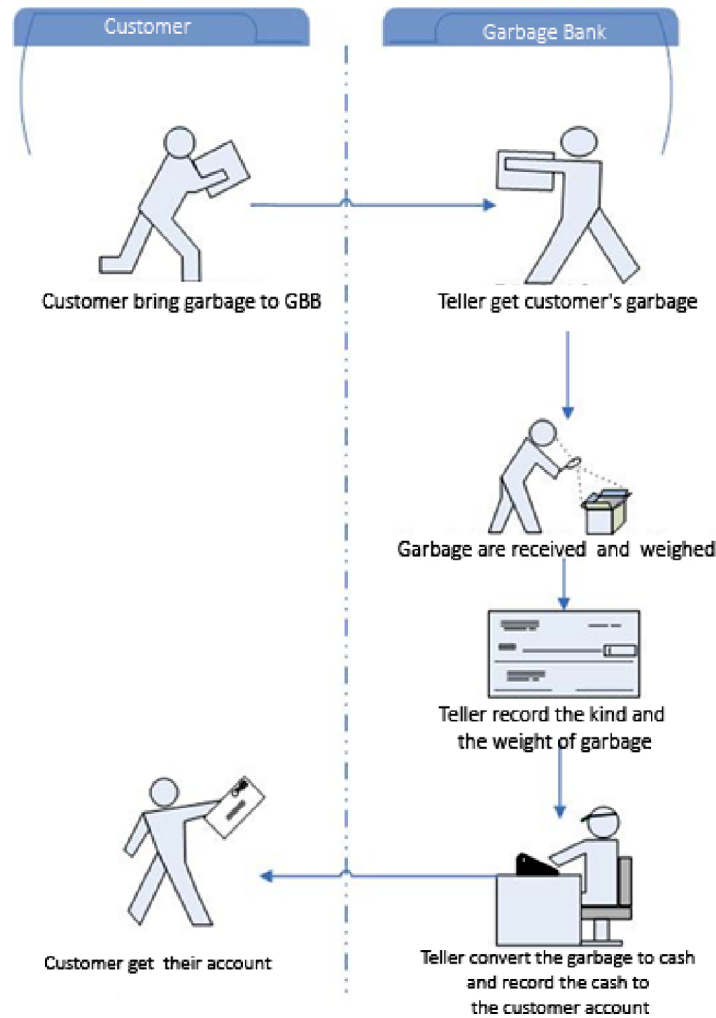
Thus, the recording process is only related to data recording. Book entry on transactions and posting to the general ledger have not been done. The accounting process which is not carried out systematically brings difficulties for GBB to prepare a monthly garbage report and annually financial statements.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

Encouraged by these conditions, researcher offers solution in the form of a systematic application of accounting which is in accordance with generally accepted accounting standards in setting up a computerised accounting system. This can range from transaction, recording and up to financial reporting.

Accounting process that should be applied is an appropriate accounting cycle in accordance with generally acceptable accounting standards (see Figure 3). Accounting standards for garbage bank as a part of small and medium enterprises (SMEs) should refer to the SAK ETAP rules (IAI, 2010).

Furthermore, to facilitate the practice of accounting, computer-based accounting system built can be seen in Figure 4. 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 utilisation of information technology and computer will not have a positive impact if these technologies are not accompanied by appropriate supporting strategies and synergies in the SMEs adopting these technologies (Ghobakhloo et al., 2012).

Figure 2 Saving/depositing process (see online version for colours)



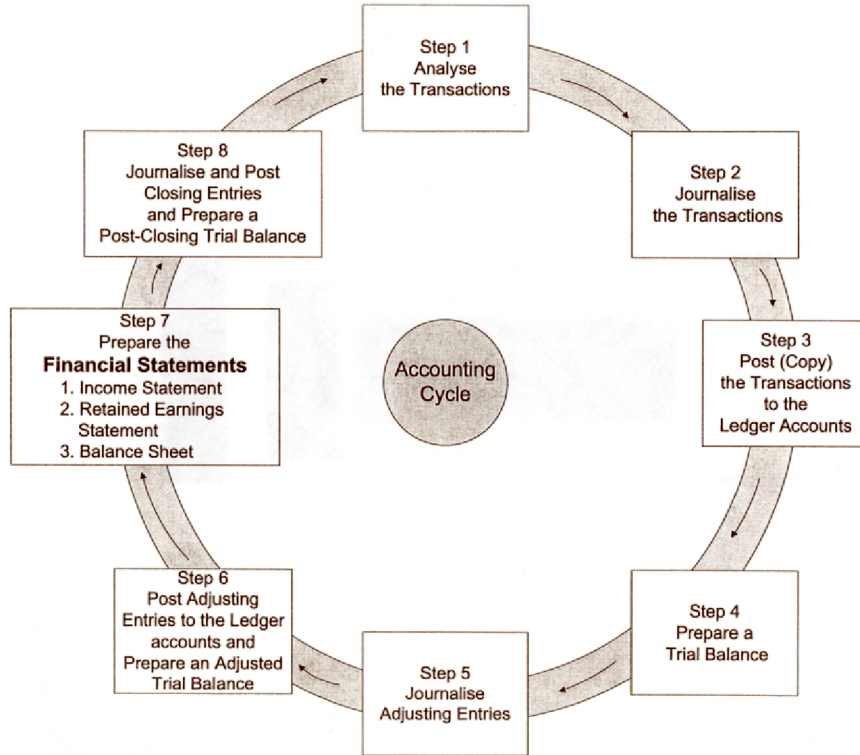
Source: Handarkho et al. (2014)

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.

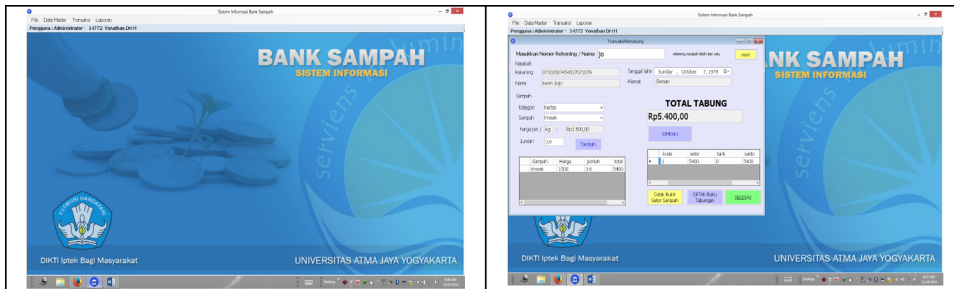
Data were obtained through questionnaires. Sixty copies of questionnaires were distributed. Fifty-nine copies (98%) questionnaires were filled completely. Seventy percent of respondents were female and 30% were male. From the data, it can be seen that the majority of bank customers were women.

Figure 3 Accounting cycle (see online version for colours)



Source: www.google.com (Accessed 12 April, 2013)

Figure 4 Computer-based accounting system (see online version for colours)



Source: Handarkho et al. (2014)

Respondents' motivation of joining GBB can be summarised as follows:

- customers earn extra money (30%)
- GBB is managed professionally (30%)
- GBB is managed transparently (10%); the customers get the knowledge of garbage management (50%)
- the customers may be initiate garbage bank in their neighbourhood (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 in terms of, among others, added money (50%), clean and healthy home environment (70%), the pride of participation in keeping the environment (60%) and the pride of following the 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 realise the self-actualisation of their participation.

4.3 Validity and reliability test results

Items totalling 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: Ev_4 does not correlate significantly with the total score so that the item (instrument) is invalid. It can be seen from the significance (2 tailed) level of Ev_4 items (0.236) that is higher than 5%. Thus, this item should be removed (not applicable).

Table 2 The result of bivariate Pearson analysis

<i>Item</i>	<i>Pearson correlation</i>	<i>Sig. (2-tailed)</i>	<i>N</i>
Ev_1	0.464**	0.000	59
Ev_2	0.440**	0.000	59
Ev_3	0.339**	0.009	59
Ev_4	0.157	0.236	59
Ev_5	0.569**	0.000	59
Ev_6	0.526**	0.000	59
Ec_1	0.492**	0.000	59
Ec_2	0.515**	0.000	59
Ec_3	0.725**	0.000	59
Ec_4	0.503**	0.000	59

Meanwhile, the reliability test is conducted by using Cronbach's Alpha. The variable is reliable if Cronbach's Alpha value is >0.6. The result shows that the value of Cronbach's Alpha is 0.658 (>0.6). So, the variable is considered to be reliable.

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. The mean each item is above 2 and 3, meaning that each questionnaire response is either 'agree' or 'strongly agree'. Table 3 presents descriptive statistics for the complete data.

4.5 Paired sample *T* test result

The results of the mean difference test using paired sample *t*-test can be seen in Table 4. 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.

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.

Table 3 Descriptive statistics

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>Variance</i>
Ev_1	59	1	4	3.25	0.756	0.572
Ev_2	59	1	4	2.49	0.728	0.530
Ev_3	59	1	4	2.58	0.700	0.490
Ev_5	59	1	4	3.05	0.680	0.463
Ev_6	59	1	4	3.27	0.611	0.373
Ec_1	59	1	4	2.31	0.676	0.457
Ec_2	59	1	4	2.92	0.624	0.389
Ec_3	59	1	4	2.86	0.655	0.430
Ec_4	59	1	4	2.76	0.652	0.425
Valid <i>N</i> (listwise)	59					

Table 4 Paired samples *T* test

		Paired differences							
		Mean	Std. deviation	Std. error mean	95% confidence interval of the difference		<i>t</i>	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Before – After	-1.424	3.271	0.426	-2.276	-0.571	-3.344	58	0.001

5 Conclusion

GBB does not apply appropriate accounting system with generally acceptable accounting standards. The standardised 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 was obtained by distributing questionnaires to GBB customers. The paired sample *t*-test showed that there is a change in the mindset of customers before and after becoming GBB customers. At first, they regarded garbage as a source of disease and they always burned it. Now they see garbage as additional incomes for the family. They can directly sell garbage to the banks or process garbage into beautiful and precious handicrafts.

Garbage bank is proved to be a way out for the problem of garbage management in Indonesia. GBB plays its role as a medium of education for the community and its customers in garbage management. GBB is also able to disseminate entrepreneurship spirit to its customers and neighbourhood individuals.

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