Relationship of Community Behavior Factors in Waste Management to the Quality of Residential Environment in Medan Belawan District

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ABSTRACT

An individual's health condition can be affected by their residential environment. Poor environmental quality is the cause of various health problems. According to the garbage community is something that is not used or that is not important. Efforts to supervise various environmental factors need to be applied in accordance with the principles of sanitation that focus on environmental hygiene. This research method is descriptive analytics with Crosss Sectional design with a research sample of 112 people. Data analysis using univariate analysis and bivariate analysis with Chi square statistic test. The results showed a relationship between predisposing factors such as education with a value of p = 0.000 (p<0.05), work with a value of p = 0.013 (p<0.0 05), income with a value of p = 0.024 (p<0.05) and supporting factors with waste management behavior with a value of p = 0.020 (p<0.05). In conclusion there is a relationship such as education, employment and income, there is a relationship between the supporting factors of inadequate facilities and infrastructure 89 (79%) with waste management behavior. It is recommended to the community to be able to manage waste so as not to pollute the environment that has an impact on health.

Keywords: education, income, facilities and infrastructure, waste management.

INTRODUCTION

The problem of waste in Indonesia is very complicated because of the lack of public attention to the consequences of waste, the lack of attention of the government in finding waste disposal provided by the government. Nature in solid, liquid or gas form. Garbage is an unwanted activity that is left after the end of the process. Garbage can be defined by humans based on the level of usability, in the natural process in fact there is no concept of garbage, only products produced after and during the natural process. After all, because in human life the concept of the environment is defined, garbage can be divided by type.

Indonesia is ranked as the second country to contribute plastic waste in the oceans. The fact that about 4.8 to 12.7 million tons of plastic waste entered the oceans in 2010. This equates to about 4,762,000,000 - 12,700,000,000 kg. by comparison, it weighs up to 1.3 times the weight of the Great Pyramid in Giza, Egypt.

In Medan the problem is more complex, this is due to the absence of intervention from policy makers today. If left unchecked, there may still be mountains of garbage in various corners of the city. It can certainly worsen environmental conditions, especially the aesthetics of the city of Medan (Lubis, 2016).

Behavior is the process of interaction between personality and environment containing stimuli (stimulus), then responded in the form of a response. This response is called behavior. Behavior is determined by perception and personality, while perception and personality are motivated by

experience. Behavior is a mental state (thinking of arguing, behaving and so on) to respond to situations outside of a particular subject. This response can be positive (without action) and active (with action) (Purwana & Hanafi, 2014; Narethong, 2020).

Its location bordering the sea makes the garbage in the area endless so it is very vulnerable to the development of diseases such as diarrhea, thypus, vomiting and so on. Although there is a waste bank, people do not necessarily turn into customers. There are still many people in the area who are not interested and leave their trash strewn. Recently, customers of waste banks have also decreased. Made me more interested in doing research in the area.

METHODS

This study uses an analytical survey approach with cross sectional design, as well as observational to see the picture of waste management, namely research conducted at the same time, to find out the relationship between free variables and bound variables. The research was conducted in Bagan Deli subdistrict of Medan Belawan in 2017. The timing of the completion of this study, starting from the initial survey to the final trial. The population in this study is all households located in the neighborhood of Bagan Deli Subdistrict Medan Belawan, sampling as many as 112 households by simple random sampling.

RESULTS

The description of the implementation of waste management by conducting an initial survey. The findings still use a simple concept that is still primitive. Garbage is more often considered a useless item by society and even industry. This is actually the wrong view if people understand and realize how much garbage has a price and can damage the environment.

Based on the development of the population

Calculation of the number of inhabitants after n years ahead of the population in the initial year (P_0). Population Growth Figures (r) with the formula:

$$P_n = P_0 (1 + r.n)$$

Therefore, the number of residents in Bagan Deli Medan Belawan district can currently be seen in the table below:

Table 1. Number of Household Population in medan belawan district

No	Environment	KK	Sex		Number of People	%
			Male	Female		
1	Environment I	244	519	431	950	7,33 %
2	Environment II	215	404	400	804	6,20 %
3	Environment III	276	545	534	1079	1,39 %
4	Environment IV	420	727	677	1404	10,8 %
5	Environment V	434	837	892	1729	13,3 %
6	Environment VI	212	537	408	945	7,29 %
7	Environment VII	395	934	839	1773	13,6 %
8	Environment VIII.	96	159	126	285	2,20 %
9	Environment IX	78	120	85	205	1,58 %
10	Environment X	192	490	467	957	7,39 %
11	Environment XI	20	40	30	70	0,54 %
12	Environment XII	226	604	599	1203	9,29 %

13	Environment XIII	325	685	715	14	0,10 %
14	Environment XIV	266	687	513	12	0,09 %
15	Environment XV	342	796	723	1519	11,7 %
	Total	3741	8084	7439	12949	100

Univariate test

Based on tests that have been conducted by conducting an analysis describing the frequency distribution of respondents between free and bound variables

Table 1. Characteristics of respondents according to education, occupation, income, knowledge, attitude, facilities, facilities and infrastructure in waste management

NO	Level of Education	f	%
1	Elementary School	25	22,3
2	Junior School	30	26,8
3	High School	53	47,3
4	Undergraduate	4	3,6
	Total	112	100

No	Employment	f	%
1	Civil Servant	2	1,8
2	Entrepreneur	3	2,7
3	Labor	44	39,5
4	Fishing	24	21,4
5	House Wife	39	34,8
	Total	112	100

No	Income	f	%
1	> Minimum Wage 2.529.000,-	24	21,4
2	< Minimum Wage 2.529.000,-	88	78,6
3	Total	112	100
	> Minimum Wage 2.529.000,-	24	21,4

No	Level of Knowledge	f	%
1	Good	71	63,4
2	Enough	31	27,7
3	Less	10	8,9
	Total	112	100

No	Attitude	f	%
1	Good	70	62,5
2	Enough	42	37,5
	Total	112	100

No	Facilities	f	%
1	Adequate	23	20,5
2	Inadequate	89	79,5
		112	100

No	Waste Bank Support	f	%
1	Good	86	76,6
2	Less	26	23,2
	Total	112	100

No	Waste Management Behavior	f	%
1	Good	23	20,5
2	Less	89	79,5
	Total	112	100

Based on table 1 above, it can be concluded that of the 112 respondents the most high school education level is 53 people (47.3%), while the least is the level of undergraduate education which is 4 people (3.6%). Seen from 112 respondents who worked the most as workers were 44 people (39.5%), while the least worked as civil servants as many as 2 people (1.8%). Seen from the 112 respondents, the largest income was below MSEs 2,529,000 which is 88 people (78.6%), while the lowest income was above MSEs 2,529,000 which is 24 people (21.4%).

Bivariate Analysis
Bivariate analysis is used to analyze the influence between independent variables on dependent variables with the following results:

Table 2. The relationship between education and waste management behavior.

No	Education	Waste management behavior				Total		p-value
		Good		Not Good				
		f	%	f	%	f	%	
1	Elementary School	1	4	24	96	25	100	
2	Junior School	1	3,3	29	96.7	30	100	,000
3	High School	17	32,1	36	67,9	53	100	
4	Undergraduate	4	100	0	0	4	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above, between the level of education and waste management behavior, it can be found that the most respondents with high school education level is 36 (67.9%) and the lowest is S1 with not bad behavior in waste management. Based on the results of the chi square test shows that the value p = 0.000 (<0.05), this shows that there is a relationship between the level of education of respondents and waste management behavior in Medan Belawan District 2017.

Table 3. Work relationships with waste management behavior

No	Employment	Waste management behavior				Total		p-value
		Good		Not Good				
		f	%	f	%	f	%	
1	Civil Servant	2	100	0	0	2	100	
2	Entrepreneur	2	66,7	1	33,3	3	100	
3	Labor	8	18,2	36	81,8	44	100	**0,013**
4	Fisheries	3	12,5	21	87,5	24	100	
5	House Wife	8	20,5	31	79,5	39	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above, between work and waste management behavior, it was found that respondents with their jobs as fishermen and local workers, 31 people (79.5%) had more bad behavior in processing waste than respondents who worked as civil servants (0%). Based on the results of the chi square test with a value of p = 0.013 (<0.05), this indicates that there is a

relationship between the respondent's work and waste management behavior.

Table 4. Income relationship with waste management behavior

No	Income	Waste management behavior				Total		p-value
		Good		Not Good				
		f	%	f	%	f	%	
1	< Minimum Wage	13	15,1	73	84,9	86	100	**0,024**
2	> Minimum Wage	10	38,5	16	61,5	26	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above between revenue and waste management behavior, it is known that respondents who have income under MSEs and good waste management behavior are 13 people (15.1%), respondents who have income under MSEs and bad waste management behavior that is 10 people (38.5%), respondents who have income above MSEs and their waste management behavior is not good which is 26 people (61.5%).

Table 5. The relationship between knowledge and waste management behavior

No	Knowledge	Waste management behavior				Total		p-value
		Good		Not Good				
		f	%	f	%	f	%	
1	Good	14	19,7	57	80,3	71	100	
2	Enough	9	29,0	22	71,0	31	100	**0,136**
3	Less	0	0	10	100	10	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above, between knowledge and behavior of waste management is known that there are 57 reponden with good knowledge and bad waste management behavior (80.3%), 22 respondents who have less knowledge and bad waste management behavior (71.0%), respondents with good knowledge and good waste management behavior that is 14 people (19.7%), respondents with less knowledge and poor waste management behavior that is 10 0rang (100%).

Table 6. The relationship between attitudes and waste management behavior

No	Attitude	Waste management behavior				Total		p-value
		Good		Not Good				
		f	%	f	%	f	%	
1	Good	16	22,9	54	77,1	70	100	**0,479**
2	Enough	7	16,7	35	83,3	42	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above, between waste management attitudes and behaviors, it is known that there are 16 respondents (22.9%) with good attitude and good waste management behavior, 54 people (77.1%) who have a good attitude and good waste management behavior. There were 7 respondents (16.7%) with adequate attitude and good waste management behavior, 35 respondents (83.3%) with adequate attitude and poor waste management behavior. Based on the results of the chi square test showing that the value p = 0.479 (> α = 0.05), this indicates that there is a relationship between the attitude of respondents and waste management behavior in Kecamatan Medan Belawan 2017.

Table 7. Relationship of facilities and infrastructure with waste management behavior

No	Facilities and infrastructure	Waste management behavior				Total		p-value
		Good		Not Good				
		f	%	f	%	f	%	
1	Adequate	9	39,1	14	60,9	23	100	0,020
2	Inadequate	14	15,7	75	84,3	89	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above, it is known that respondents who have inadequate facilities and infrastructure and good waste management behavior are 14 people (15.7%), respondents who have inadequate facilities and infrastructure and bad waste management behavior of 75 people (84 .3%), respondents with adequate facilities and infrastructure and good waste management behavior of 9 people (39.1%), respondents with adequate facilities and infrastructure and poor waste management behavior of 14 people (15.7%). Based on the results of chi square shows that the value of p = 0.020 (> α = 0.05), this indicates that there is a relationship between the facilities and infrastructure of the reIDRonden and waste management behavior in Medan Belawan district 2017.

Table 8. The relationship of waste banks to waste management behavior

No	Waste Bank	Waste management behavior				Total		p-value
		Good		Not Good				
		F	%	f	%	f	%	
1	Less	4	15,4	22	84,6	26	100	0,585
2	Good	19	22,1	67	77,9	86	100	
	Total	23	20,5	89	79,5	112	100	

Based on the table above shows supporting waste banks with waste management behavior, it is known that respondents who are less supported by waste banks and good waste management are 4 people (3.6%). Respondents who are not supported by waste banks and bad waste management behavior are 22 people (19.6%), respondents supported by good waste banks and good waste management behavior is 19 people (17%), respondents supported by good waste banks and their bad waste management behavior is 67 people (15.7).

Based on the quality of the type of waste processing use
Waste processing from the results of household activities can be processed and useful so that it does not become a public health disorder and can be worth selling by improving the community economy.

Table 9. Quality description of the type of waste processing use

No	Processing Type	f	%
1	Planted	42	37,5
2	Burnt	62	55,3
3	Recycled	8	7,14
	Total	112	100

Table 10. Based on the utilization of waste with environmental quality

No	Utilization	Environment Quality		Total	p-value
		Good	Bad		

		F	%	f	%	f	%	
1	Less	6	28,5	22	24,1	29	100	**0,385**
2	Good	15	71,4	69	75,8	86	100	
	Total	21	18,7	91	79,9	112	100	

Based on the table above shows that the relationship of waste utilization with environmental quality, it is known that respondents who underutilize with a good category of 4 people (15.4 %) while respondents who lack utilization with poor environmental quality are 22 people (84.6%), respondents who supported good waste utilization and good waste management behavior is 19 people (22.1 %), respondents who use well with the quality of their environment is not good namely 67 people (77.9 %). Based on the results of chi square indicating that the value p = 0.385 (> α = 0.05), this indicates that there is a relationship between waste utilization and quality of the environment to waste management in Medan Belawan District 2017.

Table.11. Retribution by residence

Based on the Cost of Waste Services denounced Medan Belawan

Quality	Size	Downtown			Midtown			Suburbs		
		Street			Jalan			Jalan		
		Main (IDR)	Kol (IDR)	Link (IDR)	Main (IDR)	Kol (IDR)	Link (IDR)	Main (IDR)	Kol (IDR)	Link (IDR)
LUX	Greater Than 250^{m2}	38.500	27.500	19.250	27.500	19.250	13.750	19.250	13.750	11.000
	101 s.d 250 m^2	27.500	19.250	13.750	19.250	13.750	11.000	13.750	11.000	8.250
	Smaller Than 100 m^2	19.250	13.750	11.000	13.750	11.000	8.250	11.000	8.250	5.500
PERMANENT	Greater Than 250^{m2}	27.500	19.250	13.750	19.250	13.750	11.000	13.750	11.000	8.250
	101 s.d 250 m^2	19.250	13.750	11.000	13.750	11.000	8.250	11.000	8.250	5.500
	Smaller Than 100 m^2	13.750	11.000	8.250	11.000	5.500	5.500	8.250	5.500	4.400
SEMI PERMANENT	Greater Than 250^{m2}	19.250	13.750	11.000	13.750	8.250	8.250	11.000	8.250	5.500
	101 s.d 250 m^2	13.750	11.000	8.250	8.250	5.500	5.500	8.250	5.500	4.400
	Smaller Than 100 m^2	11.000	8.250	5.500	5.500	4.400	4.400	5.500	4.400	3.300

Table .12. Retribution based on place of business activities

Business Type	Class	Building Area	Building Location			Special Tariff/m^2 (Tariff Above Basic Tariff Waste Volume) (IDR)
			City Center Basic Tariff Vol Trash up to 10 m^3 (IDR)	City Center Basic Tariff Vol Trash up to 10 m^3 (IDR)	City Center Basic Tariff Vol Trash up to 10 m^3 (IDR)	
1	2	3	4	5	6	7
A. Stores	1	Above 200 m^2	49.500	38.500	38.500	38.500/m^3
	2	101 to 200 m^2	38.500	27.500	22.000	Idem
	3	to 100 m^2	27.500	22.000	16.500	Idem
B. Restaurant	1	Above 300 m^2	66.000	49.500	38.500	Idem
	2	201 to 300 m^2	49.500	38.500	27.500	Idem
	3	101 to 200 m^2	38.500	27.500	22.000	Idem
	4	to 100 m^2	27.500	22.000	16.500	Idem
C. Office	1	Above 3000 m^2	495.000	440.000	385.000	Idem
	2	2001 to 3000 m^2	330.000	275.000	220.000	Idem
	3	1001 to 2000 m^2	220.000	192.500	165.000	Idem
	4	751 to 1000 m^2	165.000	148.500	137.500	Idem
	5	501 to 750 m^2	110.000	93.500	82.500	Idem
	6	251 to 500 m^2	66.000	49.500	38.500	Idem
	7	151 to 250 m^2	44.000	33.000	27.500	Idem
	8	to 150 m^2	27.500	22.000	16.500	Idem

D.	Workshop / Show Room / Doorsmeer	1	Above 3000 m²	495.000	440.000	385.000	Idem
		2	2001 to 3000 m²	330.000	275.000	220.000	Idem
		3	1001 to 2000 m²	220.000	192.500	165.000	Idem
		4	751 to 1000 m²	165.000	148.500	137.500	Idem
		5	501 to 750 m²	110.000	93.500	82.500	Idem
		6	251 to 500 m²	66.000	49.500	38.500	Idem
		7	151 to 250 m²	44.000	33.000	27.500	Idem
		8	to 150 m²	27.500	22.000	16.500	Idem
E.	Entertainment Services / Massage Parlors / Trim / Salon / Steam Bath	1	Above 3000 m²	495.000	440.000	385.000	Idem
		2	2001 to 3000 m²	330.000	275.000	220.000	Idem
		3	1001 to 2000 m²	220.000	192.500	165.000	Idem
		4	751 to 1000 m²	165.000	148.500	137.500	Idem
		5	501 to 750 m²	110.000	93.500	82.500	Idem
		6	251 to 500 m²	66.000	49.500	38.500	Idem
		7	151 to 250 m²	44.000	33.000	27.500	Idem
		8	to 150 m²	27.500	22.000	16.500	Idem
F.	Land Transport Pool / Mop. Air/ Sea and Warehousing	1	Above 3000 m²	495.000	275.000	220.000	Idem
		2	2001 to 3000 m²	330.000	192.500	165.000	Idem
		3	1001 to 2000 m²	220.000	148.500	137.500	Idem
		4	501 to 1000 m²	165.000	93.500	82.500	Idem
		5	to 100 m²	110.000	49.500	38.500	Idem
G.	Hotel/ Inn	1	Above 3000 m²	495.000	440.000	385.000	Idem
		2	2001 to 3000 m²	330.000	275.000	220.000	Idem
		3	1001 to 2000 m²	220.000	192.500	165.000	Idem
		4	501 to 1000 m²	165.000	148.500	137.500	Idem
		5	251 to 500 m²	110.000	93.500	82.500	Idem
		6	101 to 250 m²	66.000	49.500	38.500	Idem
		7	to 100 m²	27.500	22.000	16.500	Idem
H.	Shopping Center	1	Above 3000 m²	495.000	440.000	385.000	Idem
		2	2001 to 3000 m²	330.000	275.000	220.000	Idem
		3	1001 to 2000 m²	220.000	192.500	165.000	Idem
		4	to 1000 m²	165.000	148.500	137.500	
I.	Industry / Factory / Convection	1	Above 3000 m²	550.000	500.000	450.000	Idem
		2	2001 to 3000 m²	400.000	350.000	300.000	Idem
		3	1001 to 2000 m²	300.000	250.000	200.000	Idem
		4	501 to 1000 m²	200.000	175.000	150.000	Idem
		5	to 500 m²	150.000	135.000	100.000	Idem

Table 13. Retribution based on commercial social activities

Type of Business	Class	Building Area	Building Location			Special Tariff/m² (Tariff Above Volume of Basic Tariff Waste) (IDR)
			City Center Basic Tariff Vol Trash to 10 m³(IDR)	City Center Basic Tariff Vol Trash to 10 m³ (IDR)	City Center Basic Tariff Vol Trash to 10 m³ (IDR)	
1	2	3	4	5	6	7
Hospital 1.Private Medical Center	1	Above 3000 m²	385.000	275.000	220.000	27.500/m³
	2	2001 to 3000 m²	275.000	220.000	110.000	Idem
	3	1001 to 2000 m²	220.000	110.000	55.000	Idem
	4	501 to 1000 m²	110.000	55.000	27.500	Idem
	5	to 500 m²	55.000	27.500	16.500	Idem
1.Government / BUMN / BUMD	1	Above 2000 m²	110.000	110.000	110.000	Idem
	2	1001 to 2000 m²	82.500	82.500	82.500	Idem
	3	501 to 1000 m²	55.000	55.000	55.000	Idem

Schools / Colleges / Educational Institutions Outside Schools						
1.Private	1	Above 3000 m^2	275.000	220.000	165.000	Idem
	2	2001 to 3000 m^2	220.000	165.000	110.000	Idem
	3	1001 to 2000 m^2	165.000	110.000	55.000	Idem
	4	501 to 1000 m^2	110.000	55.000	27.500	Idem
	5	to 500 m^2	55.000	27.500	16.500	Idem
1.Government	1	Above 2000 m^2	110.000	110.000	110.000	Idem
	2	1001 to 2000 m^2	55.000	55.000	55.000	Idem
	3	501 to 1000 m^2	27.500	27.500	27.500	Idem
1. Meeting Hall Private	1	Above 3000 m^2	220.000	165.000	110.000	Idem
	2	2001 to 3000 m^2	165.000	110.000	55.000	Idem
	3	1001 to 2000 m^2	110.000	55.000	27.500	Idem
1.Government	1	Above 3000 m^2	165.000	110.000	55.000	Idem
	2	2001 to 3000 m^2	110.000	55.000	27.500	Idem
	3	1001 to 2000 m^2	55.000	27.500	16.500	Idem

Based on Above data related to waste financing, there is still a discrepancy in the payment of public levy and the unconsciousness of citizens to sort the garbage collected and sort out organic and organic waste that can increase recycling.

DISCUSSION

In general, household waste in Indonesia dumps its waste directly into sewers (46.7 percent) with a distance of < from 10 meters from clean water sources and without shelter (17.2 percent). Only 15.5 percent used enclosed shelters in yards equipped with SPAL (sewerage), 13.2 percent used open shelters in the yard, and 7.4 percent of shelters were outside the yard. Access to wastewater treatment services in 2017 amounted to 62 percent. According to the residence the percentage of homes that have wastewater sewerage is higher in urban areas by 77.15 percent, compared to the percentage of households that have sewerage in rural areas by 44.74 percent but the channels created < 10 meters from the distance of clean water sources (Rahman, 2013).

The results of this study were obtained that the value of p = 0.000 (p <0.05), this shows that there is a relationship between the level of education of respondents and waste management behavior in Environment III Belawan Sicanang Village, Medan Belawan District 2017. According to *Green* in Notoatmodjo, analyzing human behavior from a health level, by realizing it through a health promotion program known as the*Precede Proceed Model.* This model examines the problem of human behavior and the factors that affect it, and how to follow up by trying to change, nurture or improve that behavior in a more positive direction. The behavior is determined or formed from predisposing factors (or factors from within this individual including knowledge, attitudes, beliefs, and values and norms embraced.), supporting factors (health facilities, affordable health facilities, health regulations and health-related skills) and driving factors (family, teachers, peers, health workers, community leaders / influential people, and decision makers).

The results of this study also showed that there is a relationship between the work of respondents and waste management behavior in Medan Belawan District 2017 with a test value of p = 0.013 (p <0.05), Work is a routine activity that must be done especially to support his life and family life. More work is a way of making a living whereas work is generally a time-consuming activity. Working especially for the family will have an influence on his family life.

Income in a family will support the need for availability in waste management, based on household

income that is less still under Minimun so that the ability to meet the needs of the family will also be low. Based on the results of the study obtained more respondents who work as workers who of course the income earned is not affordable because for waste management in the environment there is a levy issued every month.

Knowledge or cognitive domain is a very important domain in shaping one's actions *(Overt Behaviour)*. If a person accepts a new behavior or adopts a behavior based on knowledge, awareness, and a positive attitude, then the behavior will last a long time. On the contrary if the behavior is not based on knowledge and awareness then it will not last long (Setyowati & Mulasari, 2013).

The results of this study indicate that the value of p = 0.136 (p <0.05), this indicates that there is a relationship between knowledge from respondents and waste management behavior in Medan Belawan District 2017. Knowledge is the result of information stimulation that is noticed, understood and remembered, the respondent's knowledge is still lacking so as to affect good waste management, where with the knowledge will provide the desire to utilize the knowledge possessed by motivating families and others so that it can implement a healthy environment (Tennant-Wood, 2003; Laurent et al., 2014; Surahma & Novita, 2017; Jufri, 2020).

Attitude is readiness to react to an object in a certain way and is an evaluative response to cognitive experience, affective reactions, wills and behaviors of the past. Attitude will affect the thought process, affection response, will and behavior next. So attitude is an evaluative response based on the process of self-evaluation, which is concluded in the form of positive or negative assessments that then crystallize as a reaction to the object (Syam, 2016).

The results of this study indicate that the value of p = 0.479 (p <0.05), this indicates that there is a relationship between the attitude of respondents and waste management behavior in Medan Belawan District 2017. This shows that respondents' attitude towards waste management is still lacking, resulting in a lack of knowledge about the importance of implementing waste management and the consequences if the environment is not healthy.

This is in accordance with Harahap opinion (2018) mentions that attitudes can be formed and changed, attitudes continue to develop or increase while gaining good influence, both internal and external factors. Generally the change in attitude is always preceded by a persuasive stimulus that can be in the form of verbal communication (Harahap et al., 2018).

The relationship between facilities and infrastructure and waste management behavior. The results of this study indicate that the value of p = 0.020 (p <0.05), this indicates that there is a relationship between facilities and infrastructure and waste management behavior in Medan Belawan District 2017. Along with population growth, the need to provide facilities and infrastructure will also increase, both through improvement and new development.

The fulfillment of the needs of facilities and infrastructure in the application of a healthy environment can not be fully provided by both the community itself and the government, so that the capacity of supporting the fulfillment of a healthy environment is still neglected so that it is not yet qualified, the unavailability of health facilities and social cultural facilities and infrastructure are adequate so that environmental slums, especially in settlements tend to be paradoxical, for people living in the environment. Tackling waste management in the community if neglected will cause an environmental pollution that will disturb the health around it.

The relationship between driving factors and waste management behavior. The relationship between supporting waste banks and waste management behavior The results of this study indicate that the value of p = 0.0585 (p<0.05), this indicates that there is a relationship between the garbage banks

supporting respondents withtn waste management behavior in Medan Belawan District 2017. Waste banks are useful to accommodate waste that comes from households before being transported and disposed of at the Final processing site or landfill.

The amount of garbage can be estimated to be between 60-70% of the total waste in the household and the rest scattered polluting the environment. Waste handling from the beginning is still minimal, resulting in all the garbage piled up in landfill. Most of the waste handling is done after the garbage appears so it is difficult to manage it (Beni et al., 2014).

The development of the concept of waste management to eliminate waste becomes one of the holistic ways out, some municipal waste handling that has been used with *zero waster* prinsif is a circular system with a flow rate of material is a circular system where the end of the product becomes the beginning of the product as well (nothing is wasted). The concept of comparing the flow rate of material between linear system and circular system as described below (Song & Zeng, 2015).
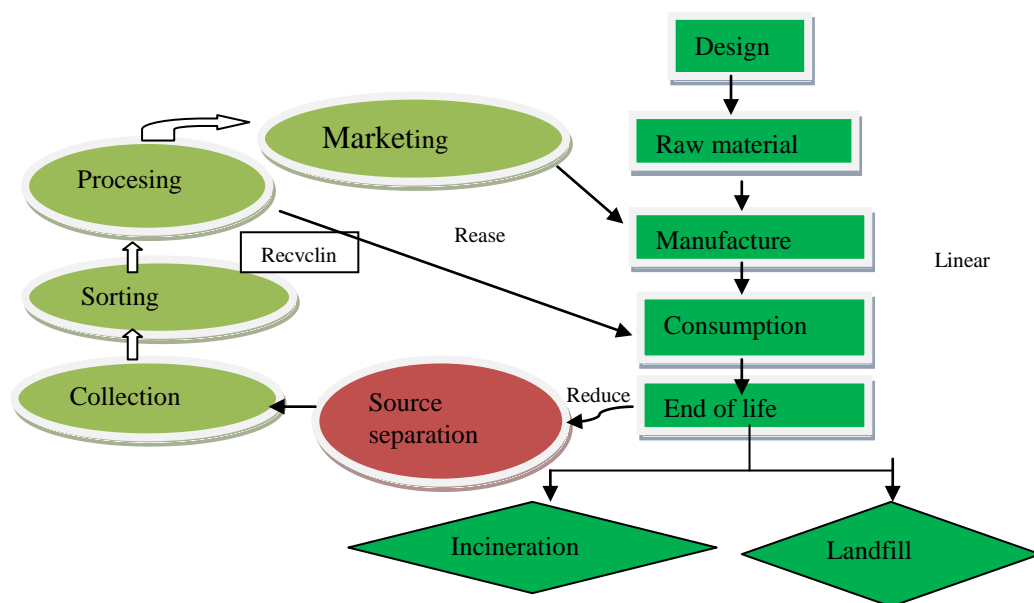

Figure 1. The flow rate of the material according to the circular concept (Zero Waste) and linear. Source: Song, Li and Zeng (2014)

The Concept of Zero Waste (ZW) was also implemented in New Zealand in 1997, supporting initiatives to minimize waste, the movement voiced an intensive system in which a product is made to be reusable, repaired and recycled, thereby eliminating waste.(14). In 2000, Del Norte County, California became the first State in the USA to comprehensively implement the ZW plan and in 2001, the California Integrated Waste Management Board adopted the ZW goal as a strategic waste management plan (Connett, 2013). Applying ZW means eliminating all disposal in land, water or air that is a threat to the planet, human health, animals or plants (ZWIA, 2004).

CONCLUSION

Based on the results of research on the relationship of community behavior factors in waste management to the quality of residential environments in Medan Belawan District 2017, it can be concluded that there is an influence on community behavior based on respondents' characteristics such as education level, employment, income, while community behavior factors related to knowledge level, attitude, facilities and infrastructure as well as waste bank support affect waste management. The need for education and

coaching and more comprehensive socialization to various parties, especially including the planning, implementation and utilization of regional funds. Zero Waste can be a new concept in waste handling in Indonesia, so there is an awareness not to create waste, because it will provide an overview as a neglected part of a healthy environment where the living conditions and livelihoods of the community are very concerning. Concrete steps are needed to empower the potential of the community through the empowerment process so that public awareness can be realized.

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