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PUBLIC RECEPTION ON THE USE OF RECYCLED ABLUTION WATER

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Abstract

This study aims to determine the perception/opinion of the community against the use of recycled ablution water. The study consisted of five stages: (1) identification of water use patterns, barriers to using recycled water, and factors that may interest respondents using recycled water; (2) Preparation of questionnaires based on identification results; (3) Distribution of questionnaires, interviews and socialization at Masjid and Pesantren Daarut Tauhid; (4) Distribution of questionnaires and interviews at Istiqlal Mosque; (5) Data analysis consisting of validation, reliability, and significance test with SPSS and descriptive analysis. There are 200 respondents who participated in this research. The highest average score of acceptance is 3.47 in the Moral obligation question group. It can be concluded that the community's acceptance of using recycled ablution water depends on a sense of moral responsibility to the environment; the greatest influence to accept the recycled ablution water comes from the family; even though respondents' effort to recycle ablution water is less than 50%, but the willingness to use recycled ablution water is high (89%); even the respondents are willing to use recycled ablution water, but the use is limited for specific activity such as watering the plants and the willingness of to use recycled ablution water for ablution is low (only 4.26%).

Keywords: Ablution Water; Water Recycling; Water Quality; Public Reception, Willingness To Accept, Recycled Ablution Water

Abstrak

Penelitian ini bertujuan untuk mengetahui persepsi/pendapat masyarakat terhadap penggunaan air wudhu daur ulang. Penelitian ini terdiri dari lima tahap: (1) identifikasi pola penggunaan air, hambatan untuk menggunakan air daur ulang, dan faktor-faktor yang mungkin menarik responden menggunakan air daur ulang; (2) Persiapan kuesioner berdasarkan hasil identifikasi; (3) Distribusi kuesioner, wawancara dan sosialisasi di Masjid dan Pesantren Daarut Tauhid; (4) Distribusi kuesioner dan wawancara di Masjid Istiqlal; (5) Analisis data terdiri dari uji validasi, reliabilitas, dan signifikansi dengan SPSS dan analisis deskriptif. Ada 200 responden yang berpartisipasi dalam penelitian ini. Dapat disimpulkan bahwa penerimaan masyarakat terhadap penggunaan air wudhu daur ulang tergantung pada rasa tanggung jawab moral terhadap lingkungan; pengaruh terbesar untuk menerima air wudhu yang didaur ulang berasal dari keluarga; Meskipun upaya responden untuk mendaur ulang air wudhu kurang dari 50%, tetapi kesediaan untuk menggunakan air wudhu yang didaur ulang adalah tinggi (89%); bahkan responden bersedia menggunakan air wudhu daur ulang, tetapi penggunaannya terbatas untuk kegiatan tertentu seperti menyiram tanaman dan kesediaan untuk menggunakan air wudhu daur ulang untuk berwudhu rendah (hanya 4,26%).

Kata Kunci: Air Wudhu; Daur Ulang Air; Kualitas Air; Penerimaan Publik, Kesediaan Untuk Menerima, Air Wudhu Yang Didaur Ulang

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A. Introduction

The use of recycled ablution water is one of the efforts in conserving water resources whose existence is limited. Wastewater or used water including wasted/wash water is often thrown away without processing first, while the quantity of water used in ablution in the mosque is large enough to be recycled and reused. The Fatwa of *Indonesian Ulama Council* (MUI) explains that what is meant by recycled water is processed water (engineering technology) from water that has been used (*musta'mal*), exposed to unclean (*mutanajjis*) or which has changed one of its properties, namely taste, color, and odor (*mutaghayyir*) so that it can be reused. The recycled water may be used for ablution, bathing, cleaning, drinking, used for cooking and for other purposes, as long as it does not endanger health [1]. Madonna et. al. [2] states that the former ablution water can still be recycled and reused after going through the processing first. According to Al Mamun et. al. [3] that the ablution water is not so contaminated and can be easily recycled and reused for general cleaning purposes and watering the plants after passing the sand filter.

Doubt of some people to use water recycled ablution for washing or ritual ablution again become obstacle in the usage of recycled ablution water. To dispel these doubts people need to be informed of the quality of recycled water. People also need to understand the meaning of "holy and sanctified" so as to be able to know that the quality of recycled water has fallen into the "holy and purifying" category. Previous research conducted by the Research Team of Environmental Engineering Department of Bakrie University on Ablution Water Management has been able to find out some water quality of used ablution water from shallow wells and ablution water from government water supply.

The objectives of this research are: To understand the public perception about the use of recycled ablution water; To socialize the quality of the recycled ablution water and to invite the community to utilize the ablution wastewater so it is not wasted away; To know the public perception about the utilization of recycled ablution water.

B. Method

The study was conducted at Pesantren and Daarut Tauhid Serua Ciputat Mosque and Istiqlal Mosque Jakarta on August 2016 until January 2017.The tools used for this research are questionnaires. Data is processed using SPSS16.

The initial phase of this research begins by identifying the problems that exist in mosques and boarding schools of research sites. Identification is done to 3 existing problems that are: Use of water; Barriers to use recycled water; Factors that may interest respondents to use recycled water. To get input in making questionnaire, identification problem is done by survey and observation in the field and literature study.

The questionnaire was designed using eleven question categories: Environmental Attitudes, Environmental concern, Moral obligation, Pro-environmental behaviour, Active involvement in finding information, Experience in using recycled water, Experience with water restriction, Perception of being limited by water restrictions, Attitudes and behaviour towards water conservation, Extend of influence of other people on people's water-related behaviours and attitudes, and Knowledge and perception about recycled water [4]. There were 25 questions in the questionnaire to find out the perception of society for recycled ablution water.

The distribution of questionnaires was done in Pesantren and Daarut Tauhid Mosque at Serua Ciputat. A total of 100 questionnaires were distributed to students or Jemaah Da'arut Tauhid mosque. Then 100 questionnaires were also distributed in Masjid Istiqlal Jakarta. This is to know the perception and preference of society about utilization of recycled ablution water. Collected data is processed statistically to obtain conclusion of research result. The validity and reliability test was conducted using SPSS 16.Followed by descriptive analysis and test the variance of some question items using ANOVA.

C. Results and Discussion

Table 1 shows the validity test result. From the validity test, question number 2, 10 and 17 are not valid at 5% significant level and excluded from the analysis.

Tabel 1
Validity Test Of Questionaire

No. Item	r empirik	rα5%,.	Note
1	0.377	0.139	Valid
2	0.099	0.139	Not Valid
3	0.279	0.139	Valid
4	0.221	0.139	Valid
5	0.284	0.139	Valid
6	0.287	0.139	Valid
7	0.254	0.139	Valid
9	0.360	0.139	Valid
10	0.038	0.139	Not Valid
11	0.394	0.139	Valid
12	0.318	0.139	Valid
13	0.261	0.139	Valid
14	0.418	0.139	Valid
15	0.469	0.139	Valid
16	0.216	0.139	Valid
17	0.049	0.139	Not Valid
18	0.420	0.139	Valid
19	0.423	0.139	Valid
20	0.424	0.139	Valid
21	0.306	0.139	Valid
23	0.379	0.139	Valid
24	0.515	0.139	Valid

Source: Author

Table 2 shows the reliability test of questionnaire, all questions are reliable and consistent at 5% significant level. Table 3 shows the descriptive analysis of data. Descriptive analysis was conducted on 25 questions in 11 categories of question categories. The average score of public acceptance of recycled ablution water as shown in Figure 1. The highest average receiving score is found in the moral obligation group with an average score of 3.47.

Tabel 2
Reliability Test Result

Variable	$r_{empirik}$	$r_{\alpha 5\%,.(200)}$	Note
item1	.774	0.139	Reliable
item2	.780	0.139	Reliable
item3	.776	0.139	Reliable
item4	.777	0.139	Reliable
item5	.777	0.139	Reliable

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Variable	$r_{empirik}$	$r_{\alpha 5\%,.(200)}$	Note
item6	.776	0.139	Reliable
item7	.777	0.139	Reliable
item9	.773	0.139	Reliable
item10	.781	0.139	Reliable
item11	.773	0.139	Reliable
item12	.775	0.139	Reliable
item13	.781	0.139	Reliable
item14	.771	0.139	Reliable
item15	.768	0.139	Reliable
item16	.779	0.139	Reliable
item17	.794	0.139	Reliable
item18	.774	0.139	Reliable
item19	.773	0.139	Reliable
item20	.774	0.139	Reliable
item21	.777	0.139	Reliable
item22a	.771	0.139	Reliable
item22b	.766	0.139	Reliable
item22c	.774	0.139	Reliable
item22d	.783	0.139	Reliable
item22e	.767	0.139	Reliable
item23	.775	0.139	Reliable
item24	.768	0.139	Reliable
item25a	.779	0.139	Reliable
item25b	.768	0.139	Reliable
item25c	.764	0.139	Reliable
item25d	.771	0.139	Reliable
item25e	.776	0.139	Reliable
item25f	.765	0.139	Reliable
item25g	.774	0.139	Reliable
item25h	.773	0.139	Reliable
item25i	.780	0.139	Reliable
item25j	.770	0.139	Reliable

Source: Author

From the results of statistical tests using Anova (Tabel 3), there is a variance/difference in the average score of the respondent's acceptance to each item question (significant at 5%).

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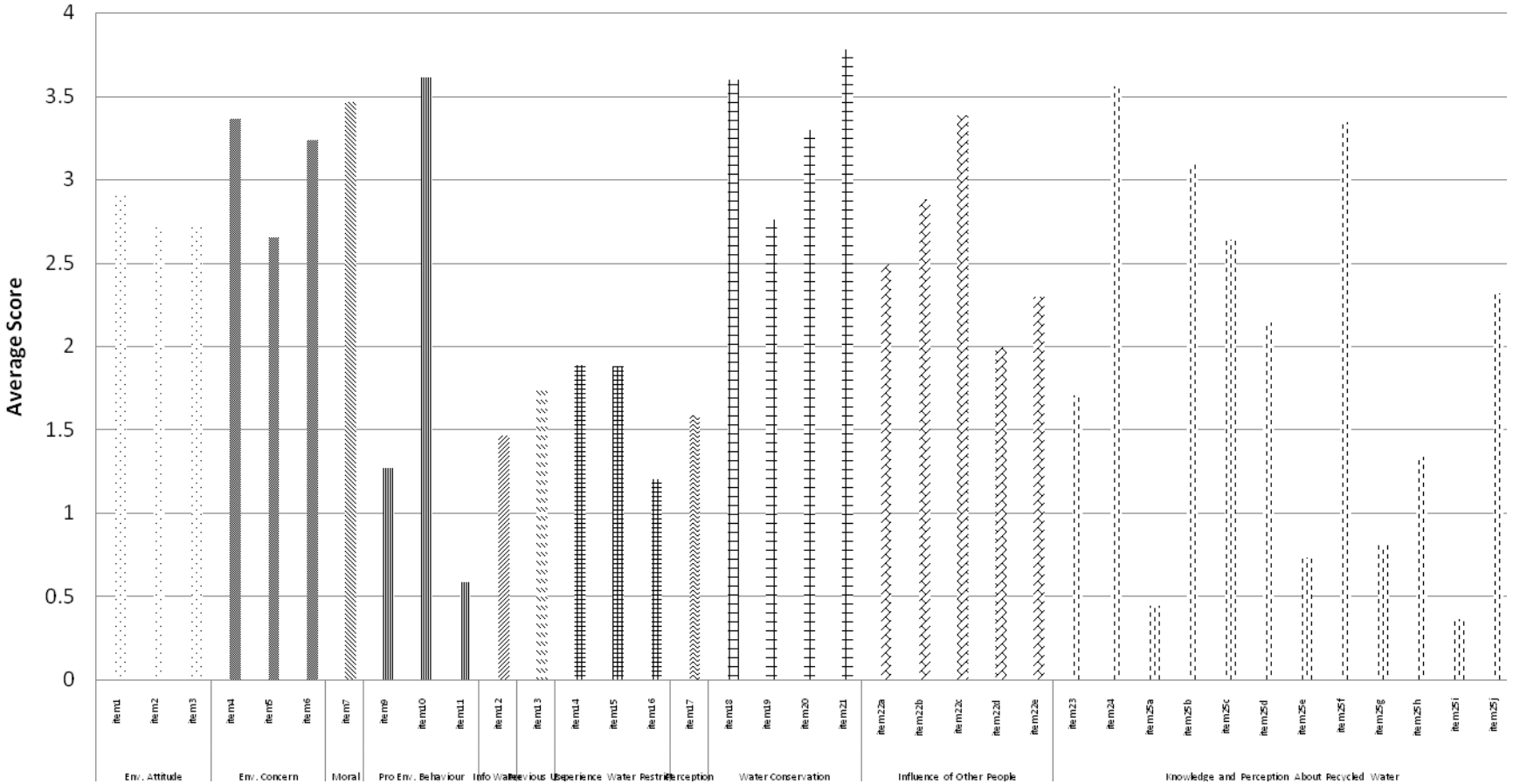
Figure 1.
The Average Score Of Public Acceptance Of Recycled Ablution Water



Tabel 3
Anova Recapitulation Of Average Respondents' Reception

Acceptance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2856.060	10	285.606	108.801	.000
Within Groups	19099.691	7276	2.625		
Total	21955.752	7286			

From the question category Extend of influence of other people on water-related behavior and attitudes, it is found that the greatest influence to receive the recycled ablution water comes from the family, with the highest weight of 3.37. These results are also supported by the results of statistical tests using Anova that there is significant variance/difference with test level α 5% (Tabel 4).

Tabel 4
Anova Recapitulation Of People's Influence On Respondent's Attitude And Behavior Against Water

Extend_of_Influence

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	223.456	4	55.864	16.372	.000
Within Groups	3343.919	980	3.412		
Total	3567.375	984			

To find out community acceptance of using recycled ablution water, the question is divided into 3, namely: (1) Willingness to recycle used ablution water; (2) Willingness to use recycled ablution water; and (3) The use of recycled ablution water.

As many as 57.4% declared themselves are not willing to recycle used ablution water while 42.6% respondents declared themselves willing to recycle used ablution water. 89% of people claimed that they would use the recycled ablution water, while 11% said that they would not use the recycled ablution water. This result shows that even though respondents' effort to recycle ablution water is less than 50%, but the willingness to use recycled ablution water is high.

A total of 19.41% (the highest) of the community willing to use used ablution water to water the plants, where only 4.26% of respondent are willing to use recycled ablution water for ablution. There are 10 activities listed in questionnaire for the use of recycled ablution water which are for drinking, washing car, bathing, filling the aquarium, flushing toilet, washing clothes, cleaning the floor, cooking, watering the plants and for ablution. The Anova test is shown in Table 5, the result is significant at 5%. This result shows that even the respondents are willing to use recycled ablution water, but the use is limited for specific activity and the willingness of to use recycled ablution water for ablution is low.

Tabel 5
Anova Recapitulation Of Perception Of Respondents Using Recycled Water For Daily Activities.

Perception

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2224.685	9	247.187	88.214	.000
Within Groups	5492.203	1960	2.802		
Total	7716.888	1969			

D. Conclusion

From the research, the conclusions are as follows:

1. The questionnaire is designed using eleven question categories: Environmental Attitudes, Environmental concern, Moral obligation, Pro-environmental behavior, Active involvement in finding information, Experience in using recycled water, Experience with water restriction, Perception of being limited by water restrictions, Attitudes and behavior towards water conservation, Extend of influence of other people on people's water-related behaviors and attitudes, and Knowledge and perception about recycled water. Eleven categories of questions are listed in 25 question numbers in the questionnaire.
2. The results of the validity test of the questionnaire using SPSS are that question number 2 (one of the questions in the Environmental attitudes category), 10 (one of the questions in the Pro-environmental behavior category), and 17

(question in category Perception of being limited by water restrictions) is less valid, so it is not a determinant in public acceptance of recycled ablution water.

3. Reliability test results from questionnaires using SPSS are all reliable and consistent questions so that it can be used as an instrument in research to measure public acceptance of recycled ablution water.
4. From the results of statistical tests using Anova, there is a variance/difference in the average score of the respondent's acceptance to each item question (significant at 5%). The highest average score of acceptance of 3.47 is in the Moral obligation question group. It can be concluded that the community's acceptance of the recycled ablution water depends on a sense of moral responsibility to the environment.
5. From the question category Extend of influence of other people on water-related behavior and attitudes, it is found that the greatest influence to receive the recycled ablution water comes from the family, with the highest weight of 3.37. These results are also supported by the results of statistical tests using Anova that there is significant variance/difference with test level α 5%.
6. Most people receive water recycled ablutions water for use in watering plant with a score of 3.35, which is the result of the category of questions Knowledge and perception about recycled water. These results are also supported by the results of statistical tests using Anova that there is significant variance/difference with test level α 5%.
7. 57.4% declared themselves are not willing to recycle used ablution water but 89% of people claimed that they would use the recycled ablution water. So that even though respondents' effort to recycle ablution water is less than 50%, but the willingness to use recycled ablution water is high.
8. Even the respondents are willing to use recycled ablution water, but the use is limited for specific activity such as watering the plants and the willingness of to use recycled ablution water for ablution is low.

E. Suggestions

Suggestions from the results of research are as follows:

1. It is necessary to conduct further research on the acceptance of the community to other waste recycled water so that it can be compared with the community's acceptance of the recycled ablution water.
2. Further socialization on the positive impacts of recycled water to the community is needed so that people's acceptance of recycled water, especially water recycling from ablution water, will be greater.

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