AI4 WASTE

FOSTERING AWARENESS AND INNOVATION IN ADULT EDUCATION

2023-2-PT01-KA210-ADU-000184346

TOOLKIT

Case Study #2

Investigation of Zero Waste Management Behaviour in Türkiye

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SUMMARY

Population growth, industrialization and technological advances have significantly increased waste production, waste collection, transportation and disposal induced significant costs. Waste could be considered a resource that allows nations to reduce the consumption of primary raw materials, protect natural resources and improve economic revenues by reducing environmental pressures. Zero waste approach for sustainable waste management has been approved and implemented globally. The present study aimed to investigate the basic zero waste management in Turkey. The study population included individuals living in seven regions in Turkey: Marmara, Aegean, Mediterranean, Black Sea, Central Anatolia, Eastern Anatolia and South East Anatolia. These regions were categorized into four groups. Marmara Region (the region with the highest concentration of industry and population), Aegean region, Mediterranean Region, (regions with high population density, where industry, tourism and agriculture are the main sources of income), and other regions (Central Anatolia, Eastern Anatolia, Southeastern Anatolia and Black Sea), which are mainly rural, and livelihood is based on agriculture and animal husbandry. The population of the regions was α=83,000,000. A sample is a small set selected from a certain population according to certain rules and considered to represent the population. There are certain known sampling rules. Only when these rules are followed, the sample is considered to represent the population (Karasar 2012). For global success of zero waste management behavior, each nation should identify local issues. Public awareness should be constantly raised with educational programs, waste containers that allow separation of the waste should be placed more frequently and at closer distances, constructive remedial policies and legislative infrastructure should be improved in cooperation with the government and municipalities, and sustainability should be ensured with innovative product design.

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RESULTS AND DISCUSSION

Participant demographics

The analysis of the participant demographics presented in Table 2 demonstrated that 28.8% of the participants were male and 71.2% were female. 52.8% of the participants were 25 years old or younger, 47.2% were 26 years old or older. 69.2% of the participants had undergraduate degrees, and 44.8% lived in Marmara Region, 21.2% lived in other regions, 18.8% lived in Mediterranean Region, and 15.2% lived in Aegean Region.

Table 1.
Participantdemographics

Frequency (f)		**Percentage (%)**	
Gender	Male	72	28.8%
Female		178	71.2%
Age	<25	132	52.8%
	>26	118	47.2%
Education	Primary and Secondary	34	13.6%
Undergraduate		173	69.2%
Graduate		43	17.2%
Region	Mediterran ean	47	18.8%
Marmara		112	44.8%
Aegean		38	15.2%
Others		53	21.2%

One main component of the zero waste pathway was associated with consumption behavior (Zaman *and* Lehmann 2011; Zaman 2015; Zaman *and* Newman 2021). Based on the gender variable, previous studies reported contradictory findings (Ananno *et al.* 2021). Certain studies reported that men were less likely to recycle when compared to women (Echegaray *and* Hansstein 2017). These findings were not consistent with other findings (Werner and Makela 1998; Do Valle *et al.* 2004) and certain studies reported no correlation between zero waste management and gender (Coskun 2022; Domina *and* Koch 2002). Although not all studies reported an impact of education level on ecological behavior, certain findings suggested that higher education promoted zero waste management behavior (Echegaray *and* Hansstein 2017; Do Valle *et al.* 2004; Padilla *and* Trujillo 2018).

Table 2.
Recycling behavior based on age

Category	Sub-categor y	<25		>25	
		F	**%**	**F**	**%**
Domestic waste	I donate if in working condition	63	47.7	54	45.8

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Old clothing	I donate	60 45.5		66	55.9
Used batteries	I use used battery recycling bins	66 50.0		96	81.4
Electronic waste	I get them repaired if possible.	59	44.7	48	40.7

In the study, the participants were also asked the following questions: “What do you do with the old or waste domestic items? What do you do with your old clothes? How do you dispose of used batteries? What do you do with electronic waste?” The most common answers to these questions were analyzed based on age. The analysis results are presented in Table 2. The analysis of the recycling behavior of the participants based on the age variable (Table 2) revealed that 47.7% of the 25 years old or younger participants and 45.8% of the 25 years old or older participants answered the question “What do you do with the old or waste domestic items?” by stating that they donated these if they are in working condition, 45.5% of the 25 years old or younger participants and 55.9% of the 25 years old or older participants answered the question “What do you do with your old clothes?” by stating that they donated those to people in need”. 50.0% of the 25 years old or younger participants aged and 81.4% of the 26 years old or older participants answered the question “How do you dispose of used batteries?” by stating that they employed used battery bins. 47.7% of the 25 years old or younger participants aged and 40.7% of the 26 years old or older participants answered the question “What do you do with electronic waste?” by stating that they get them repaired if possible. The chi-square value was X2=9.475 (p=0.000), demonstrating that the findings of the analysis of waste disposal methods were significant based on age.

CONCLUSION

The study has limitations due to the size of the sample, the fact that it includes only participants using social media and that it was applied to Turkish citizens. The study findings did not significantly differ based on gender variable, while they did based on the education level (especially in the case of the participants with graduate degrees), age (in the case of 26 years old or older participants), and the region of residence (in the case of the Marmara Region regions) of the participants. For global success of zero waste management behavior, each nation should identify local issues. Public awareness should be constantly raised with educational programs, waste containers that allow separation of the waste should be placed more frequently and at closer distances, constructive remedial policies and legislative infrastructure should be improved in cooperation with the government and municipalities, and sustainability should be ensured with innovative product design. Every remedial measure that aims to minimize waste would contribute to the reduction of waste; thus, greenhouse gas emissions would be reduced, resources and energy would be saved, and sustainability and new employment opportunities would be achieved with the development of green technologies.

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