

# Would Demarketing Strategies Rationalize Household Food Waste Consumption?

M. Z. Salem<sup>1,\*</sup> and S. Al Najdawi<sup>2</sup>

<sup>1</sup>Department of Business, University College of Applied Sciences, Remal, Gaza, Palestine

<sup>2</sup>College of Administrative Sciences, Applied Science University (ASU), Kingdom of Bahrain

Received: 1 Jun. 2022, Revised: 13 Jun. 2022, Accepted: 30 Jul. 2022.

Published online: 1 Jan. 2023.

**Abstract:** The objective of this research was to explore the influence of demarketing strategies on rationalization of household food waste “HFW” in the Gaza Strip “GS”, Palestine. More specifically, this paper concentrated on better understanding of the nature and meaning of demarketing, as well as identifying the factors that drive demarketing and develop a HFW demarketing model. To gather primary data, an empirical research was conducted with 326 questionnaires from the Palestinian citizens in the GS. The findings indicate that there is a relationship between independent variables (product, price, place, and promotion) and the dependent variable (the customer’s behavioral intention towards rationalization of HFW) for a number of reasons that were investigated during the research. The paper then concluded with recommendations for future academic studies and policymakers in Palestine.

**Keywords:** Demarketing; Gaza Strip; Household food waste; Palestine.

## 1 Introduction

Food waste is currently seen as an environmental, social, and ethical concern. The 2030 Agenda for Sustainable Development demonstrates a growing worldwide understanding of the issue. The Sustainable Development Goals target 12.3 aims for decreasing global per capita food waste at retail and consumer levels by 2030, as well as minimizing food losses along the production and supply chains. It is the outcome of Western civilizations' transition from scarcity to affluence [1,2]. According to the Food and Agriculture Organization of the United Nations [3], over 1.3 billion tons of food produced for human use each year is lost or squandered. Food waste costs the world \$1 trillion each year. Meanwhile, out of 7.5 billion people on the earth, 795 million are hungry, implying that one out of every nine individuals suffers from chronic malnutrition [4].

The Gaza Strip (GS) is experiencing an environmental and human health dilemma as a result of inadequate waste management in general and home organic content in particular [5]. Because organic material accounts for roughly 52 percent of the total waste stream, it is prioritized. In the GS, HFW makes about 31.84 percent of total municipal solid garbage. The second form of garbage is not dealt with in a sustainable manner and is treated as a component of the overall municipal solid waste generated in the GS. It is obvious that if HFW is not effectively managed, it will have negative social, economic, and environmental consequences. According to previous studies, consumer behavior and perception have a considerable impact on the quantity of HFW created [6,7,8].

Although marketing is a common business approach, 'demarketing' is a less well-known concept for discouraging people from using or purchasing particular products, either because they are harmful or because demand exceeds supply [9]. While the latter is critical, demarketing's aim is to strengthen society's well-being and safety by reducing demand for a product owing to its harmful characteristics. Demarketing, which is at the heart of social marketing [10], is becoming increasingly vital in a rapidly changing context. Prior demarketing studies [11,12] found links between consumers' affective, cognitive, and behavioral responses in a range of situations, including not only potential harmful consumption like smoking and illegal drug use (for example, [13,14,15], but also HFW consumption [8,16].

The remaining sections of the paper are structured as follows. The conceptual framework as well as the hypotheses are

\*Corresponding author e-mail: [mrdd\\_salem@hotmail.com](mailto:mrdd_salem@hotmail.com)

described in Section 2. Section 3 goes into the methodology. The study's findings are presented in Section 4, followed by a discussion in Section 5.

## 2 Theoretical framework

### 2.1 Behavioral intention

Because it is one of the driving components that encourages one individual to take an action, intention is a criterion for judging the likelihood of future behavior [17]. According to Akbar et al. [18], customers' intention is a specific goal they have in mind while assessing one or more behaviors. As a result, customers may have a variety of reasons, including the desire to buy [19]. A customer's behavioral intention is a form of cognitive activity that reveals how they want to buy a specific brand. In the theories of reasoned action [20] and planned behavior [21], intention plays a key role in purchasing decisions.

### 2.2 Demarketing mix

In the context of demarketing, the product is linked to marketing operations in order to reduce its sales volume. According to Kern [22], businesses use the demarketing technique to induce customers to buy their products by reducing supply lines, reducing service, and reducing productive activities. Furthermore, satisfied customers are proven to have a positive impact on profitability since they prefer to buy more of the product and repurchase it over time [23]. On the other side, dissatisfied consumers reduce income by lowering purchases and product consumption [23]. In addition, their dissatisfaction usually results in complaints [24] and unfavorable word of mouth [25]. As a result, if customer satisfaction encourages consumption while dissatisfaction discourages it, a dissatisfied customer is more likely to develop de-consumption intentions. The demarketing approach also includes facilitating and encouraging the use of alternative products [26]. Based on the foregoing, we suggest the following hypothesis:

*H1: Product has a positive influence on the customer's behavioral intention towards rationalization of HFW.*

Price determination might be a simple but effective technique to cut down on HFW. The purpose of the demarketing pricing strategy is to raise prices in order to diminish current demand [10]. Consumer perceptions and behavior are influenced by pricing [27]. In simply economic terms, raising prices will diminish demand (e.g., [28]). On the other hand, price determination in demarketing is one of the most complex operations for decision-makers [29]. As a consequence, the following hypothesis was introduced:

*H2: Price has a positive influence on the customer's behavioral intention towards rationalization of HFW.*

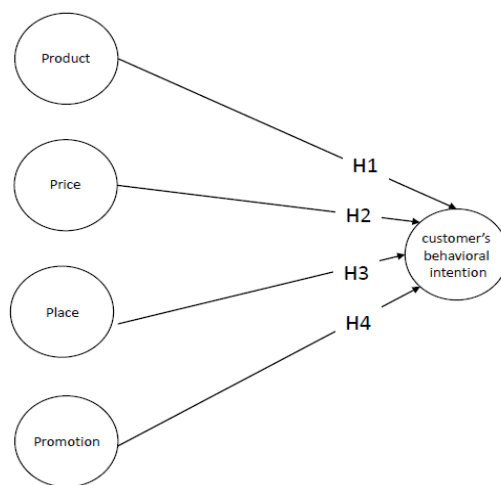
One of the most essential aspects in demarketing is place/location. Both the place of consumption and the place of purchasing may be changed, and both variables have the potential to demarket [9]. According to Ajzen [17], limiting the locations where a behavior may be conducted may function as a barrier to promoting the activity and have a substantial impact on intentions. Purchase limits would have the same impact, lowering the relevance of opportunity costs (e.g., [30]). In terms of demarketing, this implies that if we spend more time and effort looking for a product, we'll have less time for other activities such as leisure, housekeeping, and self-care [31]. As a consequence, the following hypothesis is proposed:

*H3: Place has a positive influence on the customer's behavioral intention towards rationalization of HFW.*

The demarketing technique includes promotions to induce people to acquire products they don't need and anti-promotion activities to justify consumption [32]. One of the main goals of environmental marketing, according to Kern [22], is to educate the public about the importance of environmental behavior and the necessity to protect the environment and natural resources. Consumer promotion is vital in demarketing [13] because it has a direct negative impact on intentions. As a consequence, the following hypothesis is predicted:

*H4: Promotion has a positive influence on the customer's behavioral intention towards rationalization of HFW.*

The original structure of Kotler and Levy [33] as well as the work of many other researchers (such as [9,13] were found to be helpful in the development of our model (see Figure 1: a diagram of demarketing model).



**Fig. 1.** The research framework

### 3 Methodology

#### 3.1 Participants

326 people completed and submitted the survey. The findings of the demographic variables were displayed in the table 1.

**Table 1:** Profiles of the respondents (n = 326)

| Variables       | Groupings            | No. of respondents | %    |
|-----------------|----------------------|--------------------|------|
| Age             | 30 years or less     | 176                | 54.0 |
|                 | 31–40 years          | 72                 | 22.1 |
|                 | 41–50 years          | 57                 | 17.5 |
|                 | 51–60 years          | 18                 | 5.5  |
|                 | 61 years and above   | 3                  | 0.9  |
| Gender          | Male                 | 184                | 56.4 |
|                 | Female               | 142                | 43.6 |
| Education Level | High school or lower | 104                | 31.8 |
|                 | Diploma              | 39                 | 12.0 |
|                 | Bachelor             | 148                | 45.4 |
|                 | Master               | 26                 | 8.0  |
|                 | PhD                  | 9                  | 2.8  |
| Marital status  | Married              | 174                | 53.4 |
|                 | Single               | 112                | 34.3 |
|                 | Widowed              | 24                 | 7.4  |
|                 | Divorced             | 16                 | 4.9  |

#### 3.2 Procedure

The descriptive technique was used to identify the existing situation and respond to the primary challenges of HFW demarketing in the GS, Palestine. As a result, the survey, which was conducted utilizing a Google form, functioned as the study's primary data gathering approach. The Google form's URL was widely disseminated on social media (Facebook, WhatsApp, and emails). The original questionnaire was correctly translated into Arabic to comply with local language constraints. It was then evaluated, and pilot tested by two fluent Arabic speakers for accuracy. For statistical analysis, IBM SPSS software version 23 was employed.

### 3.3 Measures

A 5-point Likert scale was used in the questionnaire, with 1 denoting strong disagreement, 2 denoting disagreement, 3 denoting no opinion/neutral, 4 denoting agreement, and 5 denoting strong agreement. The questionnaire was divided into five parts. In the first part, the product is evaluated using four questions based on Raab et al., [13], and Salem et al., [9]. In the second part, four items based on Xia et al., [34] were used to estimate pricing. The third part uses four items from Shiu et al., [31] to cover place. In the fourth part, four questions based on Siegel and Biener [35] are utilized to assess promotion. The last part uses five questions from Salem [36] to assess the customer’s behavioral intention towards rationalization of HFW.

## 4 Results

### 4.1 Factor analysis

The KMO and Bartlett's tests were used to evaluate if the factor analysis was appropriate for the study. A score of at least 0.7 on the reliability test is required. In most circumstances, the Bartlett's Sphericity test values should be less than 0.05. The KMO value of 0.725 is greater than the acceptable threshold of 0.000, suggesting that this analysis is sufficient for the study.

To construct the factor, score coefficient matrix created by principal components analysis, one principle factor is rotated using the varimax normalization, as shown in Table 2. There are a total of 21 items in the factor. Table 2 reveals that all of the loadings are more than 0.30, implying that the scales' construct validity has been preserved.

**Table 2:** Reliability and factor loading of the constructs

| Construct                               | Item | MV    | SD   | FL   | Cronbach’s α |
|---|------|-------|------|------|--------------|
| <b>Product</b>                          | 1    | 3.51  | 0.84 | .754 | .734         |
|   | 2    | 3.46  | 0.87 | .748 |              |
|   | 3    | 3.27  | 0.79 | .739 |              |
|   | 4    | 3.63  | 0.81 | .744 |              |
| <b>Price</b>                            | 1    | 3.25  | 0.78 | .743 | .756         |
|   | 2    | 3.66  | 0.76 | .755 |              |
|   | 3    | 3.51  | 0.94 | .729 |              |
|   | 4    | 3.48  | 0.86 | .722 |              |
| <b>Place</b>                            | 1    | 3.43  | 0.88 | .747 | .743         |
|   | 2    | 3.44  | 0.82 | .758 |              |
|   | 3    | 3.371 | 0.92 | .739 |              |
|   | 4    | 3.59  | 0.78 | .721 |              |
| <b>Promotion</b>                        | 1    | 3.26  | 0.81 | .718 | 0.745        |
|   | 2    | 3.42  | 0.88 | .746 |              |
|   | 3    | 3.33  | 0.86 | .738 |              |
|   | 4    | 3.38  | 0.76 | .764 |              |
| <b>Demarketing of cigarette smoking</b> | 1    | 3.28  | 0.85 | .728 | .762         |
|   | 2    | 3.53  | 0.82 | .752 |              |
|   | 3    | 3.37  | 0.91 | .731 |              |
|   | 4    | 3.28  | 0.78 | .740 |              |
|   | 5    | 3.58  | 0.83 | .758 |              |

### 4.2 Hypotheses testing

The connection between the independent factors (product, price, place, and promotion) and the dependent variable (the customer’s behavioral intention towards rationalization of HFW) was investigated using multiple regression analysis. By using a multiple regression approach, the researchers aimed to determine how independent factors affected HFW demarketing.

Independent variables account for 53.8 percent of the variance in HFW demarketing (adjusted R2= 0.538). The model's

quality was validated since the F value was significant at 0.000. As indicated in Table 3, product ( $t = 2.326, p < 0.000$ ), price ( $t = 2.245, p < 0.000$ ), place ( $t = 2.487, p < 0.000$ ), and promotion ( $t = 2.673, p < 0.000$ ) are all positively related to the customer’s behavioral intention towards rationalization of HFW. Therefore, the results supported H1, H2, H3, and H4, respectively

**Table 3:** Results of multiple regression analysis

| Model   | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig.  |       |
|---|-----------------------------|------------|---------------------------|-------|-------|-------|
|   | B                           | Std. Error | Beta                      |       |       |       |
| 1   | (Constant)                  | 0.176      | 0.058                     |       | 2.537 | 0.000 |
|   | Product                     | 0.181      | 0.064                     | 0.164 | 2.326 | 0.000 |
|   | Price                       | 0.147      | 0.068                     | 0.136 | 2.245 | 0.000 |
|   | Place                       | 0.154      | 0.057                     | 0.142 | 2.487 | 0.000 |
|   | Promotion                   | 0.163      | 0.065                     | 0.154 | 2.673 | 0.000 |
| <i>Notes:</i> Dependent variable: the customer’s behavioral intention towards rationalization of HFW; adjusted R2= .538, F= 117.486, and sig.= 0.000. |                             |            |                           |       |       |       |

## 5 Discussion

### 5.1 Discussion of findings

The objective of this paper is to investigate the correlation between independent variables (product, price, place, and promotion) and the dependent variable (the customer’s behavioral intention towards rationalization of HFW). Product has an impact on the customer’s behavioral intention towards rationalization of HFW by decreasing the amount of products that the customer buys. The product strategy in terms of the demarketing mix, according to Shiu et al. [31], comprises identifying a substitute product for the hazardous product in issue, as well as services and programs to aid the consumer in giving up the harmful product.

Furthermore, the findings reveal a link between price and the customer’s behavioral intention towards rationalization of HFW. According to Innes et al. [37], the most prominent demarketing pricing technique is taxing on products, which raises the final price that the customer pays for these products. The purpose of imposing taxes, according to Meier and Licari [38], is to raise revenue and/or discourage consumers from continuing their habit.

The findings also show that place has an impact on the customer’s behavioral intention towards rationalization of HFW. The demarketing of HFW is aided by the reduction of consumption locations, the reduction of distribution regions, and the increased difficulty of purchasing large amounts of products [9].

In addition, the findings show that promotion has an impact on the customer’s behavioral intention towards rationalization of HFW by preventing products-related promotional programs, increasing and expanding anti-promotion campaigns (such as pamphlets highlighting the dangers of HFW), and developing promotional strategies (prizes and valuable gifts) for people who quit HFW by the government and related organizations [13].

### 5.2 Limitations and Future Research Directions

Contextual and application limitations were among the study’s empirical results. Our findings are based on replies from GS citizen point of view. As a result, it’s impossible to make broad generalizations about Palestine. Despite the fact that the findings apply to rising economies with comparable cultural roots, such as Palestine, they may not be suitable for places with different cultural situations.

Future studies might re-examine the concept in different contexts or cultures. Additionally, to increase knowledge of the links and mechanisms underlying the situation at hand, moderating and/or mediating elements might be included to the model.

## References

- [1] R. A. González-Santana, J. Blesa, A. Frigola, and M. J. Esteve, Dimensions of household food waste focused on family and consumers, *Critical Reviews in Food Science and Nutrition*, **62(9)**, 2342-2354 (2022).
- [2] P. Morone, P. Falcone, and A. Lopolito, How to promote a new and sustainable food consumption model: A fuzzy cognitive map study, *Journal of Cleaner Production*, **208**,563-574 (2019).
- [3] Food and Agriculture Organization of the United Nations (FAO), *Global Food Losses and Food Waste—Extent, Causes and Prevention*; Food and Agriculture Organization of the United Nations: Rome, Italy (2011).
- [4] V. Evans, and T. Wall, Entrepreneurial resilience, *Good Health and Well-Being*, 162-171 (2020).
- [5] I. Al-Khatib, S. Kontogianni, H. Abu Naba, N. Alshami, and M. Al-Sari, Public perception of hazardousness caused by current trends of municipal solid waste management, *Waste Management*, **36**, 323-330 (2015).
- [6] S. Li, Z. Kallas, and D. Rahmani, Did the COVID-19 lockdown affect consumers' sustainable behaviour in food purchasing and consumption in China? *Food Control*, **132**, 108352 (2022).
- [7] Q. Liu, Q. Xu, X. Shen, B. Chen, and S. S. Esfahani, The mechanism of household waste sorting behaviour—A study of Jiaying, China, *International Journal of Environmental Research and Public Health*, **19(4)**, 2447 (2022).
- [8] C. Ferro, G. Ares, J. Aschemann-Witzel, M. R. Curutchet, and A. Giménez, I don't throw away food, unless I see that it's not fit for consumption”: An in-depth exploration of household food waste in Uruguay, *Food Research International*, **151**, 110861 (2022).
- [9] M. Z. Salem, M. Ertz, and E. Sarigöllü, Demarketing strategies to rationalize electricity consumption in the Gaza Strip-Palestine, *Renewable and Sustainable Energy Reviews*, **143**, 110956 (2021).
- [10] M. Z. Salem, S. Baidoun, and R. F. Almuzaini, Water Consumption Demarketing Strategies with Reference to the Gaza Strip, Palestine, *Polish Journal of Environmental Studies*, **27(1)**, 297-304 (2018).
- [11] S. Ahmed, Scope of Social Marketing in De-Marketing Smoking Habits: An Exploratory Study, *Malaysian Management Journal*, **22**, 125-138 (2019).
- [12] S. Kim, E. Ko, and S. J. Kim, Fashion brand green demarketing: Effects on customer attitudes and behavior intentions, *Journal of Global Fashion Marketing*, **9(4)**, 364-378 (2018).
- [13] K. Raab, R. Wagner, M. Ertz, and M. Salem, When marketing discourages consumption: demarketing of single-use plastics for city tourism in Ottawa, Canada, *Journal of Ecotourism*, 1-31 (2022).
- [14] J. E. Crawford, Who is winning the war on drugs? A case in marketing and demarketing, *Atlantic Marketing Journal*, **3(1)**, 35-47 (2014).
- [15] M. Z. Y. Salem, Factors Affecting the Demarketing of Breastmilk Substitutes in Palestine, *Breastfeeding Medicine*, **8(3)**, 302-311 (2013).
- [16] L. Bravi, B. Francioni, F. Murmura, and E. Savelli, Factors affecting household food waste among young consumers and actions to prevent it. A comparison among UK, Spain and Italy, *Resources, Conservation and Recycling*, **153**, 104586 (2020).
- [17] I. Ajzen, The theory of planned behavior, *Organizational Behavior and Human Decision Processes* **50**, 179-211 (1991).
- [18] W. Akbar, S. Hassan, S. Khurshid, M. Niaz, and M. Rizwan, Antecedents Affecting Customer's Purchase Intentions towards Green Products, *Journal of Sociological Research*, **5(1)**, 273-289 (2014).
- [19] D. L. Kasilingam, Understanding the attitude and intention to use smartphone chatbots for shopping, *Technology in Society*, **62**, 101280 (2020).
- [20] M. Fishbein, and I. Ajzen, *Belief, Attitude Intention, and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA (1975).
- [21] I. Ajzen, From intentions to actions: a theory of planned behavior', in Kuhl, J. and Beckman, J. (Eds.): *Action Control: From Cognition to Behavior*, Springer-Verlag, New York (1985).
- [22] C. Kern, Demarketing as a tool for managing visitor demand in national parks – An Australian case study. Master

- Thesis, University of Canberra (2006).
- [23] K. Khadka, and S. Maharjan, Customer satisfaction and customer loyalty. Centria University of Applied Sciences Pietarsaari (2017).
- [24] S. Donoghue, and H. M. de Klerk, Dissatisfied consumers' complaint behaviour concerning product failure of major electrical household appliances—a conceptual framework, *Journal of Consumer Sciences*, **34**, 41-55 (2006).
- [25] M. L. Richins, Negative word-of-mouth by dissatisfied consumers: A pilot study, *Journal of marketing*, **47(1)**, 68-78 (1983).
- [26] B. Weiler, B. D. Moyle, P. Scherrer, and M. Hill, Demarketing an iconic national park experience: Receptiveness of past, current and potential visitors to selected strategies *Journal of Outdoor Recreation and Tourism*, **25**, 122-131 (2019).
- [27] J. Aschemann-Witzel, and S. Zielke, Can't buy me green? A review of consumer perceptions of and behavior toward the price of organic food, *Journal of Consumer Affairs*, **51(1)**, 211-251 (2017).
- [28] H. J. Monfared, and A. Ghasemi, Retail electricity pricing based on the value of electricity for consumers, *Sustainable Energy, Grids and Networks* **18**, 100205 (2019).
- [29] N. Niroomand, and G. P. Jenkins, Estimation of households' and businesses' willingness to pay for improved reliability of electricity supply in Nepal, *Energy for Sustainable Development* **55**, 201-209 (2020).
- [30] L. Berry, K. Seiders, and D. Grewal, Understanding service convenience, *Journal of Marketing* **66**, 1-17 (2002).
- [31] E. Shiu, L. M. Hassan, G. Walsh, Demarketing tobacco through governmental policies – the 4Ps revisited, *Journal of Business Research* **62(2)**, 269-278 (2009).
- [32] P. E. Chaudhry, L. Cesareo, and A. Pastore, Resolving the jeopardies of consumer demand: Revisiting demarketing concepts, *Business Horizons*, **62(5)**, 663-677 (2019).
- [33] P. Kotler, and S. Levy, S. Demarketing, yes, demarketing, *Harvard Business Review* **49**, 74-80 (1971).
- [34] L. Xia, K. Monroe, and J. Cox, The price is unfair! A conceptual framework of price fairness perceptions, *Journal of Marketing* **68**, 1-15 (2004).
- [35] M. Siegel, and L. Biener, The impact of an antismoking media campaign on progression to established smoking: Results of a longitudinal youth study. *American Journal of Public Health* **90**, 380–386.
- [36] M. Salem, Factors affecting consumer attitudes, intentions and behaviors toward SMS advertising in Palestine, *Indian Journal of Science and Technology*, **9(4)**, 1-14 (2016).
- [37] M. Inness, J. Barling, K. Rogers, Turner, N. De-marketing Tobacco through Price Changes and Consumer Attempts Quit Smoking. *Journal of Business Ethics*, **77(4)**, 405-416 (2008).
- [38] K. Meier, and M. Licari, The Effect of Cigarette Taxes on Cigarette Consumption, 1955 through 1994. *American Journal of Public Health*, **(87)7**, 1126–1130 (1977).