The Impact of Environmental Consciousness and Health Awareness on the Brand-relationship quality – An examination of Community of Package-Free Stores in Hungary

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Abstract

The aim of this research was to examine the influence of environmental awareness and health consciousness among package-free shoppers. The data was collected through an online questionnaire survey, using a convenience sampling method, from 227 consumers who actively shop at package-free stores in Hungary. The study model was based on prior research and the analysis was conducted using the PLS-SEM method. The reliability of the scales was assessed using Cronbach's alpha coefficient and composite reliability, discriminant and convergence validity was evaluated using the Fornell-Larcker criterion, and average variance extracted (AVE). Our findings indicate that environmental awareness influences health consciousness, and both have direct effect on brand relationship quality, but environmental consciousness has an indirect impact through trust and loyalty.

Keywords: package-free store, environmental and health consciousness, brand relationship quality

1. Introduction

In recent decades, there has been an increasing focus on sustainable consumption, which aims to improve the environmental performance of products throughout their life cycle, raise consumer awareness and stimulate demand for sustainable goods and production technologies (European Parliament, 2022). Trade of packaging-free products and packaging-free shopping are one form of sustainable consumption, whereby consumers buy products in their own containers. The importance of this model extends beyond the reduction of single-use packaging and waste generation, furthermore, it can contribute to the prevention of food waste. Bulk-free shops are typically small, privately owned, grocery stores with 300-1500 mainly cooking material units (Beitzen-Heineke, Balta-Ozkan, and Reefke 2017) and are popular in West-European countries. Sales are growing steadily year on year but there are large variations between countries; former socialist countries have a lower uptake of packaging-free shopping (Zerowaste Europe, 2020).

While unpackaged products represent an environmentally friendly consumption alternative for those making conscious lifestyle choices (National agricultural chamber, 2022), in Hungary, compared to the initial enthusiasm, the number of shops has decreased dramatically. Who survived the COVID-19 and the inflationary environment, became stronger, with packaging-free brand communities on their social media sites. To get closer to the reasons for the lower turnover characteristic of the eastern region and to understand the behavior of consumers, further investigations are necessary.

The interrelationship between food consumption, health and the environment are well established (Kiss, Dombi, and Szakály, 2019), however, the relative influence of these factors on shopping behaviour and the dominant factor between them remain subjects of debate. This study aimed to investigate the impact of environmental and health consciousness on the brand relationship quality of stores among packaging-free communities in Hungary and increase knowledge about this form of shopping. To the best of our knowledge, no research has yet been carried out to investigate the brand relationship quality displayed in packaging-free stores.

2. Literature review, deducing hypotheses and the conceptual model

This chapter presents the packaging-free concept, with a focus on the relationship between environmental and health consciousness, and the brand relationship quality between the store and the customer through the factors of trust and loyalty.

2.1 Environmental and health awareness

In comparison to other types of grocery stores, the defining characteristic of packaging-free grocery stores is environmentalism (Beitzen-Heineke et al., 2017). Packaging-free trade is a specific form of in-store retailing, defined as a distribution method that sells food and household goods by weight or volume, and can be measured and purchased in containers carried by the customer or purchased on site (Louis, Lombart, and Durif, 2021). Environmental awareness is the individual's desire to protect and preserve the environment (De Silva, Wang, and Kuah, 2021). Consequently, the individual will choose the "green option" if they can. The concept of green consumption is inextricably linked to the notion of consumer responsibility, whereby individuals contribute to the resolution of environmental issues by purchasing environmentally friendly products and by supporting companies with minimal or no negative environmental impact (Testa et al., 2021).

In their examination of the health-environment linkages in food consumption, Barna, Szakály, Nagy-Pető, and Bauerné (2020) found that sustainable foods are most likely to reduce

environmental pressures and concluded that plant-based and less processed foods meet the criteria for health and environmental consciousness. As demonstrated by Beitzen-Heineke et al. (2017), the range of products available in shops contributes to health and environmental consciousness in several ways. Firstly, the shops do not tempt consumers to consume more through various marketing campaigns. Secondly, the controllability of the portions purchased reduces consumer expenditure, in contrast to the more favourable price incentive of larger packaging in traditional retailing. Furthermore, the lack of different brands of the same product and the absence of labels and brands reduces the confusion that can arise from an overabundance of food products. The absence of processed foods improves consumers' nutritional knowledge and reduces the consumption of foods containing saturated fat, salt, sugar, and preservatives. Some pack-free shops also place a strong emphasis on organic products. Shops provide customers with the opportunity to improve their cooking skills through workshops and presentations. These factors can influence attitudes towards nutrition and contribute to the development of habits and behaviours that support the maintenance and improvement of health, which the WHO (1993) considers to be main components of healthconscious behaviour. According to Gloud (1990), health consciousness is an individual's attention to their health, a psychological characteristic that measures the extent to which an individual pays attention to their internal state and how much this is reflected in their thinking and feelings (Gloud, 1990).

2.2 Brand relationship quality

The brand relationship is an indicator of the strength of the relationship between the brand and its consumer. The concept of brand relationship quality has emerged from empirical research on the relationship between products/services and firms and refers to situations where buyers and sellers are active partners. Brand-consumer relationships based on the analogy of human relationships, with the brand being a kind of persona, and as a result an active partnership with the customer can develop (Smit, Bronner. and Tolboom, 2007). Brand relationship quality is often assessed in relation to factors such as perceived value, trust, satisfaction, and loyalty (Athanasopoulou, 2009) and its six dimensions that influence depth and strength of the relationship: partner quality, intimacy, behavioural reciprocity, personal commitment, self-identity relationship and love/passion (Fournier, 1998). As there is a lack of manufacturer brand, relationship with different degrees of strength can be examined among merchandise assortment, packaging-free shops, and consumers. In the present study brand was defined as a store brand of packaging-free shops and consumer as brand community of packaging-free shops.

2.3 Customer trust

The absence of packaging can give rise to mistrust. In the case of unpackaged products, there is a focus on trust and food safety, such as the cleaning of dispensers, the implementation of measures to prevent food safety risks, or the storage of unpackaged products, about which the consumer desires information (Louis et al., 2021; Beitzen-Heineke et al., 2017).

Trust is defined as consumer attitudes that contribute to the perception of reliability at the time of purchase (Lee, Fu, and Chen, 2019). Food trust factors include healthiness, organic certification, origin, branding, production methods and environmental awareness, as well as the description of food ingredients (Fernqvist and Ekelind, 2014). The brand image encompasses the manufacturer's promise, which exerts a positive influence on brand trust (Muslim, Mubarok, and Wijaya, 2020). Since the manufacturer's brand is absent from packaging-free products, it is of paramount importance for the retailer to cultivate it. Consumers exhibit greater trust in green products and green brands that can produce and market their products in a sustainable manner. Those consumers who exhibit a higher level of trust in green products and brands are

more likely to become loyal consumers (Pahlevi, and Suhartanto, 2020). A weak positive effect of health consciousness on trust for products that provide full information about their composition and the risk of overconsumption is observed (Amelia et al., 2022). Similarly, this positive and strong relationship is assumed for environmental consciousness. Theoretical and empirical research indicates that trust has a positive impact on the quality of the consumerbrand relationship in a multitude of contexts. Primarily, trust is a precursor to the brand relationship, as it is a prerequisite for its development. However, trust also plays an important role in deepening and maintaining the relationship at a later stage (Gwin, 2009). Furthermore, Gwin (2009) discovered that trust has an indirect effect on brand relationship quality through perceived value. As companies enhance consumers' perception that they care about their interests, stronger relationships can develop. This is because greater trust leads to a higher perceived product quality. From these statements, we can make the following hypothesis:

H1: Environmental awareness has a positive effect on brand relationship quality.

H2: Environmental awareness has a positive effect on trust.

H3: Environmental awareness has a positive effect on health awareness.

H4: Health awareness has a positive impact on brand relationship quality.

2.4 Loyalty

Brand loyalty means consumers have a positive attitude towards a product, and they do not search for other alternatives to buy (Ene, and Özkaya, 2014). Regarding package free shops, brand was defined as a store brand. Regarding store brand customer loyalty was be defined by Food Business News as a strong relationship between the retailer and customer, and customer can feel they miss will something if they go to another shop (Huddleston, Whipple, and VanAuken, 2004). In their 2004 study, Huddleston et al. found that affective and conative antecedents were more influential than cognitive ones in determining loyalty to grocery stores. Their research demonstrated that satisfaction with various elements of the store, including product selection, shopping experience, salesperson helpfulness, service quality, store atmosphere and cleanliness, and the feeling of working for the customer, can trigger emotions that lead to loyalty. While low prices may be an important factor in attracting new customers, they have not been a central issue in the long term. Instead, service development and the establishment of trusting relationships with salespeople appear to be key factors in the development of attitudes and loyalty. We can conclude hypotheses as follows:

H5: Trust has a positive impact on loyalty.

H6: Trust has a positive impact on brand relationship quality.

H7: Loyalty has a positive impact on brand relationship quality.

The proposed conceptual framework is shown in Figure 1.

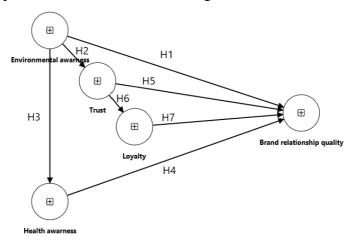


Figure 1. Hypothesis and conceptual framework

3. Research method

3.1 Research design and sample

In our quantitative research, we conducted an online questionnaire survey among shoppers in packaging-free stores, using a voluntary sampling method. The target group of the research were the customers of these shops, and we targeted them using two methods. First, we asked the owners of packaging-free shops to share the questionnaire with their visitors via their social media sites. Additionally, we distributed the questionnaire across online platforms identified as brand communities associated with packaging-free shopping. A total of 42 online platforms related to packaging-free shopping and sustainable consumption were surveyed between May 2023 and May 2024. A total of 539 responses were received over the course of the year. During the data cleaning process, 312 responses were discarded due to the lack of sufficient information provided. This is partly due to the fact that many members of the brand communities are only interested in the shops, but not actively engaged with them. Consequently, the final sample size of the survey was established at 227 valid respondents.

3.2 Operationalisation of the constructs

In our study, we drew on the international literature to examine the constructs (Table 2). The purpose of the empirical research was to test the constructs by adapting the already internationally accepted measurement scales to the circumstances of our study. The set of our brand relationship quality construct includes nine items from the scale of Kressmann et al. (2006). And the trust was measured using four items (Dam, 2020). For brand relationship quality and trust, 7-point Likert scales ranging from "1 = Strongly disagree" to "7 = Strongly agree" were used. Environmental awareness was measured using a four-item scale following De Silva et al (2021), while health awareness was measured using a nine-item scale developed by Gloud (1990) Responses to the questions on environmental awareness and health awareness were recorded on a 5-point Likert scale, where "1 = Strongly disagree" and "5 = Strongly agree". Finally, loyalty was measured using items adapted from Kressmann et al. (2006) on a 7-point Likert scale.

3.3 Data analysis

To test hypotheses on the relationships between latent variables, the Partial Least Squares (PLS) path analysis method is the most suitable (Hair, Hult, Ringle, and Sarstedt, 2017). The method can be run on small samples and variables with non-normal distributions. Our data for both Kolmogorov-Smirnov and Shapiro-Wilk tests are p<0.01 for all variables and thus cannot be considered as normally distributed. To measure the proposed research model and hypotheses, we used the Partial Least Squares Structural Equation Model (PLS-SEM) (Kazár, 2014). Using SmartPLS 4 software, we performed path analysis in two stages: (1) evaluation of the external (measurement) model and (2) evaluation of the internal (structural) model.

4. Results

4.1 Reliability and validity of constructs

Table 2 presents the measurement scales of the constructs (latent variables), to assess their reliability the Cronbach's α -coefficient and the Composite Reliability (CR) index were used. Both the Cronbach's alpha (α) and CR values of the constructs should be above 0.7 (Hair et al., 2017), which means that the internal consistency of the constructs is adequate. Table 1 shows that this criterion is met for all five constructs.

To assess convergence validity, we used factor loadings of the items and the average variance extracted (AVE) indicator. Factor loadings should be greater than 0.7 and AVE values should be greater than 0.5 (Hair et al., 2017). In our study, both values exceed the minimum criterion. Then, the convergence validity of the constructs was also found to be adequate.

Furthermore, discriminant validity was assessed using the Fornell Larcker criterion (Fornell and Larcker, 1981). According to this method, the AVE value of a given latent variable should be higher than the square of the correlation between the variable in question and the other latent variables. The criterion is met for all five constructs. Thus, the discriminant validity of the constructs is also adequate.

Construct	Item	Cross loadings
	If the shop where I buy was a person	
	he/she would play an important role in my life.	
Brand relationship quality $(\alpha=0.933, \\ AVE=0.653, \\ CR=0.948)$		0.840
	he/she would treat me well.	0.826
	I could rely on him/her.	0.819
	he/she would do his/her work well.	0.741
	I would know a great deal about him/her.	0.771
	we would be close friends.	0.856
	I would express deep and strong feelings about him/her.	0.824
	I would understand him/her and be able to understand his/her thoughts.	0.850
	I would want him/her to keep me company when I feel lonely.	0.734
Loyalty $(\alpha = 0.849, AVE = 0.869, CR = 0.930)$	If you went shopping today, would you stick to your usual packaging-free shop?	0.936
	If you could afford to shop in any store, would you stick to your usual packaging-free shop?	0.928
Trust	I trust packaging-free shops.	0.926
$(\alpha = 0.926,$ AVE = 0.819, CR = 0.948)	I feel that I can trust packaging-free shops completely.	0.864
	I can rely on a packaging-free shop.	0.933
	Shopping in packaging-free shops is safe.	0.896
Environmental awareness ($\alpha = 0.882$, AVE = 0.740, CR = 0.919)	Strict global measures must be taken immediately to halt environmental decline.	0.885
	The environment is one of the most important issues facing society today.	0.870
	Unless each of us recognizes the need to protect the environment, future generations will suffer the consequences.	0.877
	A substantial amount of money should be devoted to environmental protection.	0.806
Health awareness $(\alpha = 0.925,$ $AVE = 0.624,$ $CR = 0.937)$	I reflect about my health a lot.	0.796
	I am very self-conscious about my health.	0.818
	I am generally attentive to my inner feeling about my health.	0.842
	I am constantly examining my health.	0.731
	I am alert to changes in my health.	0.806
	I am usually aware of my health.	0.813
	I am aware of the state of my health as I go through the day.	0.781
	I notice how I feel physically as I go through the day.	0.693
	I am very involved with my health.	0.818

Table 1. The constructs and their related indicators

4.2 Evaluation of the internal (structural) model

The internal model was first analysed by testing the standardised path coefficients, i.e. the individual paths. Bootstrap sampling was performed to test for significant differences. The bootstrapping results (5000 samples) showed that the t-values for H1, H2, H3, H4, H6 and H7 exceeded 1.96. The results of the study also concluded that the independent variables have significant effect on their associated dependent variable at five percent level of significance. This finding was based on the p-values, which were all below the acceptable level. Table 2 presents the results of the hypothesis testing.

Path	Hypothesis	Path coefficient	t-value	p-value
Environmental awareness → Brand relationship quality	H1	0.171	2.510	0.012
Environmental awareness → Trust	H2	0.454	4.790	0.000
Environmental awareness → Health awareness	Н3	0.286	2.902	0.004
Health awareness → Brand relationship quality	H4	0.147	2.339	0.019
Trust → Loyalty	Н5	0.381	5.187	0.000
Trust → Brand relationship quality	Н6	0.234	2.957	0.003
Loyalty → Brand relationship quality	H7	0.147	2.208	0.027

Table 2. The result of the bootstrap process

The structural model was also analysed for the R^2 (explained variance) (Hair et al., 2017), a measure of the overall effect size (Garson, 2016). R^2 varies between 0 and 1, with higher values indicating higher predictive accuracy. The R^2 value can be categorized as weak (0.19), medium (0.33) and significant (0.67) (Chin, 1998). In the present study, the R^2 value for the overall model was 0.249, indicating a medium effect. Trust exerted the largest influence, followed by environmental awareness and loyalty.

4.2 Final model

The final model takes into account significant effects. Exogenous variables include health awareness, while endogenous variables include environmental awareness, trust, loyalty and brand relationship quality. In the analysis, we also examined the direct effects between the latent variables, which are illustrated by the arrows in Figure 2. and the standardised path coefficients assigned to them. The results indicate that all pairings show a positive effect between the latent variables. It can also be stated that environmental awareness has a stronger influence on brand relationship quality ($\beta = 0.171$) than health awareness ($\beta = 0.147$). Brand relationship quality is most strongly influenced by trust ($\beta = 0.234$), which is ahead of the effect of loyalty ($\beta = 0.147$). For trust, only the dimension of environmental awareness has a relatively large effect ($\beta = 0.454$). The relationship between trust and loyalty were examined too and found that trust conditions loyalty in the opposite direction ($\beta = 0.381$).

Trust also indirectly affects brand relationship quality. Its total effect is the sum of the direct (β = 0.234) and indirect effects (via functional fit = **0.403*0.324**) and this is larger (β = **0.394**) than the direct effect (β = **0.324**). This means that trust affects brand relationship quality not only by itself but also through other variables, so that the final effect includes a positive effect in the intermediate variable. This is also true for the relationship between environmental awareness and brand relationship quality. Environmental awareness also influences brand relationship quality through multiple pathways. Its overall effect (β = **0.409**) through trust and loyalty, which has a higher effect compared to the direct route (β = 0.171).

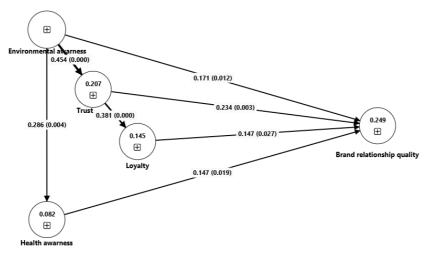


Figure 2. The final model

5. Conclusions and managerial implications

The results of the PLS study show that environmental awareness plays a more important role than health awareness in the case of packaging-free shops. Environmental consciousness has an impact on health consciousness and on brand relationship quality, while health consciousness affects directly brand relationship quality. The model also shows that environmental awareness affects brand relationship quality directly and indirectly through the latent variables of trust and loyalty. Although packaging-free shops are taking health into account when designing their product ranges, this is not yet increasing customer confidence and loyalty. However, healthy foods do increase the quality of brand relationship, so it makes sense to place more emphasis on these products and continue to make them available to their customers. Accordingly, we suggest that packaging-free shops should focus on health consciousness in their sales and marketing activities, alongside environmental issues.

6. Future research and limitations

Packaging-free shopping is a relatively new phenomenon, and its social acceptance in Europe is not yet universal or uniform. In Hungary, the number of people who shops in packaging-free stores is still low, but it is important to promote the uptake of packaging-free shopping in view of the environmental challenges of the present era. The present study is subject to several limitations, which present avenues for future research. One of the limitations of this study is the relatively small sample size. This is due to the difficulty of reaching the target group, despite our best efforts. The conceptual model relies only on the most important environmental and health related attributes, therefore future research could include other important attributes, such as perceived ease of use, convenience and role of brand image. We identify two directions for future research: it would be beneficial to conduct further studies to understand Hungarian package-free shop customers more deeply and to study them qualitatively, and directions could be to examine macro and micro environmental factors, such as legal and competitive environment for the operation of packaging-free shops within Europe.

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