

Consumer perceptions of sustainability labels for alternative food networks

Sustainability
labels for food
networks

493

Birgit Teufer and Martin K.J. Waiguny

*Department of Business, IMC Krems University of Applied Sciences,
Krems, Austria, and*

Sonja Grabner-Kräuter

*Department of Marketing and International Management, University of Klagenfurt,
Klagenfurt, Austria*

Received 14 October 2022
Revised 8 March 2023
18 June 2023
4 July 2023
Accepted 7 July 2023

Abstract

Purpose – Sustainability labels play a crucial role in providing consumers with quick and easily accessible information to assess the environmental, social and economic impacts of products. This research examines how different sustainability labels influence consumer perceptions and assessments of alternative food networks (AFNs).

Design/methodology/approach – The authors conducted three cross-sectional studies to explore consumer perceptions of sustainability labels for AFNs. The authors tested labels representing the three sustainability dimensions, labels of different graphical quality and different awarding bodies.

Findings – Consumers did not differentiate between sustainability dimensions but assessed labels in a holistic manner. The overall rating of a label positively influenced perceived sustainability. Self-designed and professionally designed labels had a positive effect on the intention to buy from an AFN. Professionally designed labels also enhanced the perceived authenticity of the networks. Notably, the source of the label, whether self-awarded or awarded by an official body, did not significantly impact consumer perceptions. However, interaction effects revealed professionally designed labels had a stronger positive effect on purchase intention when they were self-awarded.

Practical implications – AFNs can derive benefits from using labels. Self-organized, non-profit AFNs are well advised to have labels professionally designed.

Originality/value – This research contributes to the understanding of the effects of sustainability labels for community-based AFNs, diverging from the traditional focus on individual products.

Keywords Sustainability labels, Eco-labels, FoodCoop, Alternative food networks, Non-profit marketing, Consumer perception

Paper type Doctoral paper

© Birgit Teufer, Martin K.J. Waiguny and Sonja Grabner-Kräuter. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

Erratum: It has come to the attention of the publisher that the article, Teufer, B., Waiguny, M.K.J. and Grabner-Kräuter, S. (2023), “Consumer perceptions of sustainability labels for alternative food networks”, *Baltic Journal of Management*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/BJM-10-2022-0380> incorrectly listed the short title of the article as “Sustainability labels for alternative food”. This error was introduced during the production process and has now been corrected in the online version. The publisher sincerely apologises for this error and any inconvenience caused.

Research funding: This work is part of a doctoral thesis and was supported by a dissertation grant of the Society for Research Promotion Lower Austria (Gesellschaft für Forschungsförderung Niederösterreich m.b.H.).

Conflict of interest: All authors declare that they do not have any conflict of interest in conducting or reporting on the research.



1. Introduction

In order to achieve the goals of the Paris Climate Agreement and the 17 Sustainable Development Goals outlined in the Agenda 2030, there is an urgent need to transition to more sustainable food production and consumption (United Nations, 2015). Moreover, there is a growing consumer demand for relocalized supply chains, regional products, and alternative sourcing channels, indicating a shift in consumer preferences (e.g. Sheng *et al.*, 2019). In this context, alternative food networks (AFNs) have become increasingly important in the last decades (e.g. Kump and Fikar, 2021). AFNs, such as food cooperatives (FoodCoops) or community supported agriculture, can be distinguished from the conventional agri-food system by short food supply chains, close producer–consumer relationships and sustainable production practices (Renting *et al.*, 2003). Values like health, social responsibility and ethics are becoming increasingly important in the food sector as consumers seek closer connections with their food and shorter supply chains (European Commission, 2020). Consequently, there is an increased need for information regarding the social and ecological impacts of these products (Annunziata *et al.*, 2019).

Labels can serve as effective tools to support consumers with limited knowledge and time in their decision-making process (Thøgersen *et al.*, 2012). Unlike brand logos, labels provide compact information about products, services or companies. Sustainability labels, also known as eco-labels, offer consumers an easy way to assess products in terms of their environmental, social and economic impact and are increasingly used by producers (e.g. Janßen and Langen, 2017). Companies also use labels to position themselves as considerate employers with labels for sustainability or corporate social responsibility (e.g. Kleiss and Waiguny, 2021).

However, while the impact of sustainability labels for individual products on consumer behavior has been extensively studied (overviews can be found in various systematic reviews, e.g. Potter *et al.*, 2021; Ihemezie *et al.*, 2018), the use of labels for AFNs, particularly for FoodCoops, has not yet been explored. Unlike traditional businesses, FoodCoops aim to attract new members rather than directly selling products or recruiting employees. It is important to investigate the potential use of sustainability labels by FoodCoops in attracting prospective members. Consumers are likely to have different preferences for sustainability labels, not only depending on the type of information these labels convey but also depending on the graphic design of the label (Potter *et al.*, 2021) and the awarding institution, as there is inconclusive evidence if governmental, non-governmental or even fictional labels work better (Majer *et al.*, 2022).

This research aims to contribute to a better understanding of the importance of sustainability labels for AFNs, in particular FoodCoops. The primary research purpose of this paper is to explore how the display of different sustainability labels influences the perception and assessment of AFNs. The following section gives an overview of existing knowledge and theories and specifies our research questions.

2. Literature review and research questions

2.1 Perception of AFNs

AFNs comprise a wide variety of phenomena explored in the literature, ranging from production practices such as organic farming, to distribution arrangements such as community supported agriculture and farm stores, to self-organized networks between consumers and producers such as food cooperatives, so-called FoodCoops (Renting *et al.*, 2003). FoodCoops are networks in which consumers unite to purchase and then distribute food from local or regional farmers or food producers and have high transformative potential, given that their members report a strong connection between producers and consumers (Zoll *et al.*, 2021). Motives for participation in FoodCoops include not only self-oriented motives such as the quality of the product or trust in the producer but also strongly community-oriented motives such as social interaction and support of the farmer, as well as socio-political motives such as environmental reasons (Zoll *et al.*, 2017). Although many people are

interested in AFNs in general, consumer disbelief in their sustainability is an important barrier to membership (Diekmann and Theuvsen, 2019). Further, limited consumer awareness can hinder participation, and marketing efforts to increase consumer demand still pose challenges for AFNs (Poças Ribeiro *et al.*, 2021).

2.2 Sustainable consumption and the role of labels

Various terms have been used in the literature for describing sustainable consumer behavior. Some focus on specific aspects of sustainability, such as protecting the environment (e.g. “green consumption” in Peattie, 2010) or individual behaviors such as consuming less (e.g. “voluntary simplicity” in Iwata, 2006), while others aim to incorporate ecological, social and economic dimensions – known as the triple bottom line approach (Purvis *et al.*, 2019). Concepts like “conscious consumption” (Balderjahn *et al.*, 2013), “mindful consumption” (Sheth *et al.*, 2011) and “responsible consumption” (Webb *et al.*, 2008) reflect the integration of these three dimensions.

Many consumers would like to have more information regarding the social and environmental impact of the products they buy (e.g. Annunziata *et al.*, 2019). A recent overview of the literature identified information and knowledge barriers as one main obstacle to the adoption of responsible consumption (Falcão and Roseira, 2022). In this context, labels have become one of the preferred sources of information for food products (Howard, 2006). While existing labels often convey certain associations (Ellison *et al.*, 2016), they are more prevalent in product contexts. Individuals may be accustomed to ecological sustainability labels for products (Janßen and Langen, 2017; Schäufele and Hamm, 2017), as well as to corporate social responsibility labels from companies (e.g. Kleiss and Waiguny, 2021), but not to holistic labels for AFNs.

While most labels focus on ecological issues, it would be desirable for sustainability labels to encompass all three pillars of sustainability and their interrelationships (Torma and Thøgersen, 2021). This perspective is supported by Howard’s (2006) research, which found that many people find it difficult to identify the most important characteristics related to food production (e.g. animal welfare, local production, fair income for farmers, etc.) and express a preference for food that meets all of these standards. However, developing a comprehensive meta-sustainability label is considered challenging due to the broad and occasionally ambiguous nature of sustainability (Eberle *et al.*, 2011).

Our research design is based on well-established theories that can be broadly encompassed under the general label of dual-process theories (Chaiken and Trope, 1999; Kahneman and Frederick, 2002). Dual-process theories assume deliberate or reduced processing based on the ability and motivation to process (Petty *et al.*, 1986). The Heuristic-Systematic Model, for example, posits that individuals with limited capacity or motivation to systematically process information evaluate it independently of its content by employing simple schemas or decision rules (Chaiken, 1980). Heuristics, defined as the substitution of a target attribute with a more accessible property, play a significant role in this process (Kahneman and Frederick, 2002).

Following this line of reasoning, our studies build on the basic assumption that sustainability labels serve as heuristics for consumers to make inferences about the AFN. Consumers with relatively high levels of knowledge and experience of a specific AFN can evaluate this AFN on a fairly objective level based on its attributes. Consumers who do not have such knowledge or the motivation for a more intensive information search are likely to rely on a heuristic, such as a label, for assessing the AFN. Therefore, it can be argued that consumers tend to project the perceptual features (e.g. the graphical quality or the awarding body) and the meanings (e.g. sustainability) of the label onto the (unknown) AFN itself (for a similar argumentation in the context of packaging colors see Marozzo *et al.* (2020)).

Among sustainability labels, organic labels are the most widely recognized, primarily emphasizing environmental aspects and sparingly considering the social or economic dimension (Schäufele and Hamm, 2017). However, existing research indicates that even with well-known labels such as “organic”, consumers often struggle to comprehend their actual meaning. Moreover, consumers may prefer these labels for reasons unrelated to the label itself, such as supporting local sustainable food systems (Conner and Christy, 2004). This raises questions regarding whether individuals even differentiate between sustainability dimensions and if the presentation of different sustainability dimensions influences consumers’ perception of sustainability labels, leading to the following research question.

- RQ1.* Does it make a difference for perception and assessment of the sustainability label which sustainability dimension (ecological, social, economic) the label addresses?

2.3 Design of labels

Research on the visual complexity of eco-labels is limited (Donato and Adigüzel, 2022). A study by Rihn *et al.* (2019) shows that logos attract more visual attention compared to text-based labels, whereas Tang *et al.* (2004) have found the same effects of verbal and visual eco-labels without a significant interaction effect. Donato and Adigüzel (2022) have demonstrated that design complexity and feature complexity enhance consumers’ product evaluations, but labels should be visually appealing and easy to understand. In addition to the text, the shape, size and language of labels can also influence consumers (Proi *et al.*, 2023), although it remains unclear whether logo only, text only or a combination of both is more effective (Potter *et al.*, 2021).

FoodCoops are primarily consumer-driven and often adopt an amateur or do-it-yourself (DIY) approach, as their primary focus is not commercial. This can reflect on the visual appearance of labels, as overly professional-looking labels may contradict the authenticity of the AFN. Perceived authenticity has been found to influence consumers’ behavioral intentions (e.g. Fritz *et al.*, 2017). The question arises whether simple, self-designed labels increase the perceived authenticity of the network and thus have the same or even a better effect than professionally designed labels. Therefore, we address the following research question.

- RQ2.* Does the professionalism of the label design make a difference to attitudes and perceived authenticity of AFNs and behavioral intentions?

2.4 Awarding institutions

Various studies have shown that perceived support from public institutions can encourage individuals to engage in more sustainable behavior (e.g. Persada *et al.*, 2015), with public institutions generally being perceived as the most trustworthy (Thøgersen, 2010). However, consumers’ limited knowledge about certification processes may undermine the effectiveness of independent certification in reducing skepticism about labels (Howard, 2006). Moreover, there is an increasing trend of self-declared labels awarded by manufacturers or retailers themselves (Carrero and Valor, 2012), which is comparable to an AFN awarding itself a label.

Although previous research has shown that governmental labels can have a greater influence than non-governmental labels (e.g. Drichoutis *et al.*, 2017), contradictory findings exist where fictional labels outperform well-known labels from public institutions (e.g. Bradu *et al.*, 2014). A comprehensive literature review on this topic can be found in Majer *et al.* (2022). The question remains whether each sustainability label has the same effect or whether it depends on the body awarding the label to the network. Furthermore, it is unclear whether overly professional-looking labels might be perceived as inauthentic in the context of consumer-driven AFNs. Therefore, we pose the following research questions.

-
- RQ3. Does it make a difference to attitudes and perceived authenticity of AFNs and behavioral intentions, which agency awards the label (self-awarded vs awarded by an official body)?
- RQ4. Is there an interaction effect of awarding agency and graphic quality?

3. Study 1 (pilot study)

To answer [research question 1](#), we employed a simple within subject online experiment to investigate if different statements on the three sustainability dimensions (ecological, economic, social) on labels are recognized and if participants perceive any differences.

3.1 Methodology

Considering that self-organized networks typically lack the budget for professional graphics, we designed the labels on our own with a simplistic design to reflect real-world conditions. We designed two labels for each sustainability dimension: ecological sustainability (“short transport distances”), regional economical sustainability (“maintaining food production in the region”) and social sustainability (“support of our farmers through fair prices”). One of the two labels was designed with simple clipart (different for each dimension) and the other with a colorful background matching all dimensions. This gave us the opportunity to attribute possible differences in the evaluation either to the different inscriptions or to different designs of the labels.

After a brief welcome to the participants, three out of the six labels (one from each pair) were randomly shown. We collected ad hoc free-text associations for each individual label and assessments of 17 different characteristics (e.g. “Sustainable”, “Interesting”, “Appealing”, etc.). The single word items were derived from attitude measurements (e.g. [MacKenzie and Lutz, 1989](#); [Koshy and Manohar, 2016](#)) and the three dimensions of conscious consumption ([Balderjahn et al., 2013](#)) to encompass ecological, economic and social aspects. Participants rated the extent to which the characteristics apply to the respective label on a six-point scale (from 1 “not at all true” to 6 “completely true”). We conducted a one-factor analysis of variance (ANOVA) with Bonferroni post hoc tests to examine the differences between the labels for each investigated characteristic. Additionally, we calculated Pearson’s correlation coefficients to analyze the relationships between variables. A factor analysis was conducted to determine if the three dimensions of conscious consumption as well as the attitude toward the labels emerged.

For all studies, we recruited participants through a microworking platform for a small payment. In February 2021, Austrians in the age range of 30–70 were recruited, as they are typically the target members of AFNs (e.g. [Hennchen and Schäfer, 2022](#)). A total of 76 people responded. This sample size is considered sufficient for pilot studies ([Hertzog, 2008](#)), as our first aim was to test for observable effects. We did not collect socio-demographic data from the participants of this study.

3.2 Results

Participants did not differentiate between the three sustainability dimensions. The ANOVA revealed some statistically significant differences in the evaluation of the individual labels. However, these differences were neither due to the sustainability dimension used (inscription on the label) nor to the background used within the same inscription on the labels (clipart vs uniformly colorful). A correlation matrix confirmed our assumption that the assessment of the labels depends more on the perceived quality of the labels or the general perception of the

labels rather than on the inscription or the background used. With a few exceptions, all recorded items showed a significant positive correlation with each other ($p < 0.01$, two-sided).

To investigate whether participants differentiated between the different sustainability messages in the labels, we performed a factor analysis (principal component, varimax), which resulted in the extraction of only two components: one related to sustainability characteristics and the other associated with a more general attitude (see Table 1). Overall, the correlations indicated that the assessment of labels was done in a holistic way, with similar assessments for almost all items, regardless of the inscription or background. Therefore, in response to research question 1, the perception and assessment of sustainability labels do not differ based on the sustainability dimension (ecological, social, economic) addressed by the label.

4. Study 2

Building on the results of our first study, which suggest that labels are processed holistically and that general perception is more important than the specific information on the label, we tested the influence of the graphic quality of labels in a second study to answer research question 2.

4.1 Methodology

We employed a three-conditional, single factorial online experiment investigating the main effect of the presence of a professionally designed label (“PROF”) in comparison to the presence of an amateurishly designed label (“DIY”) and a description of a fictitious AFN with no label (no label control group CG). We took the best rated label from study 1 and had a professional label designed with similar visual elements and the same inscription to avoid noise coming from different elements that could also influence consumers’ perceptions (Proiet al., 2023). In a pre-test with 17 students, all students correctly identified the self-made version and the professionally designed version. The labels are shown in Figure 1 in the description of study 3. Furthermore, we created a fictitious FoodCoop called “LoKaKau” (“Lokal-Kaufen”, which means “buy regionally”) and provided a corresponding German-language description to attract potential members. The respective labels were displayed in the top right corner of the description. Austrian participants aged between 18 and 70 were recruited in April 2021 and were randomly assigned to one of the conditional groups.

Item	Factor sustainability	Factor Attitude
Eco-friendly	0.883	
Regional	0.856	
Sustainable	0.845	
Good for me	0.833	
Fair	0.811	
Social(ly)	0.766	
Trustworthy	0.728	0.499
Strengthen economy	0.724	0.365
Appealing	0.495	0.768
Modern	0.363	0.761
Realistic	0.323	0.712
Boring		-0.711
Interesting	0.595	0.646
Expensive		0.371

Table 1. Factor analysis study 1 **Note(s):** Smaller loadings than 0.300 are not displayed for visibility reasons **Source(s):** Table created by author

After an introduction, participants were shown the information about the AFN followed by a range of questions. For all composite measures, an exploratory factor analysis was computed, and AVE and CR are reported. To check for discriminant validity, the Fornell–Larcker criterion was calculated, confirming that all constructs are distinct from each other.

We measured attitude toward the AFN ($ATT = 6.16$, $sd = 1.053$, $\alpha = 0.896$, $AVE = 0.735$; $CR = 0.917$) using four semantic differential items (e.g. good-bad) on a 7-point scale based on [MacKenzie and Lutz \(1989\)](#). Perceived authenticity ($AUTH = 5.43$, $sd = 0.982$, $\alpha = 0.778$, $AVE = 0.515$, $CR = 0.805$) of the AFN was assessed using the “Relational authenticity scale” of [Ilicic and Webster \(2014\)](#). We applied two single item measures to assess intentions to buy ($IBUY = 5.49$, $sd = 1.210$) in such a network as well as joining as a member ($IJOIN = 4.13$, $sd = 1.641$) on a 7-point agreement scale. To control for the influence of general environmental, social and economic consciousness on evaluation and buying behavior, we assessed these factors using the five-factor Conscious Consumption Scale ([Balderjahn et al., 2013](#)) in its German updated version developed by [Ziesemer et al. \(2019\)](#). All items were measured on a 7-point agreement scale. The means, standard deviations (sd), α , AVE and CR for these covariates are reported in [Table 3](#) in the description of study 3. Current shopping behavior served as additional covariate. The last question aimed at whether participants recognized a label in the description. The majority of the control group reported that they had not seen one (94.9%), while 77.1% in the DIY group and 76.9% in the PROF group could remember a label. A Harman’s common variance test revealed a variance extraction of 29.41% for all items, indicating a low risk of a common method bias.

138 participants completed the whole questionnaire. We conducted the instruction manipulation check suggested by [Oppenheimer et al. \(2009\)](#) and checked the relative speed as suggested by [Leiner \(2019\)](#), which led to discarding 33 participants. The final sample for study 2 comprised 105 (41% male, 58.1% female, 1% non-binary) participants aged 19 to 68 (mean 33.11 years). There were no significant differences in age or gender between the groups.

4.2 Results

We employed a MANCOVA with ATT , $AUTH$, $IBUY$ and $IJOIN$ as dependent variables and the conscious consumption as well as current reported shopping behavior (how much is local and organic) as covariates. While there were no significant differences between the groups for ATT , we found a marginal significant effect for $AUTH$ and $IBUY$, as displayed in [Table 2](#).

Correlation analysis showed that ATT , $AUTH$, $IBUY$ and $IJOIN$ are all significantly positively correlated with coefficients above 0.200. The answer to [research question 2](#) is that the professionalism of the label design does not make a difference to attitudes or behavioral intentions. However, similar to study 1, study 2 provides support for the notion that displaying labels can be beneficial for networks. In particular, the presence of a label has a positive effect on $IBUY$, regardless of the design’s professionalism. Regarding $AUTH$, the professionalism of the label design does have an effect, as the professional logo enhances the perceived authenticity of the network, whereas the DIY logo has a slight negative effect (albeit not statistically significant in comparison to CG and PROF).

5. Study 3

Further building on the results of our studies, we tested the influence of the label awarding body in combination with labels of different visual quality (PROF vs DIY) to answer [research questions 3](#) and [4](#).

Figure 1.
Newspaper articles
with PROF label
awarded by official
body and with DIY
label awarded by the
network

District-News

Issue 02
2022

FoodCoop "LoKaKau" awards itself quality label

A happy day for the FoodCoop "LoKaKau"
The regional association "LoKaKau" has developed a new quality label: "Maintenance of food production in the region" to make the success of the association visible

Marianne Huber, chairwoman of the association "LoKaKau" is very pleased: "We as FoodCoop have set ourselves the goal to strengthen relationships between producers and consumers and to promote small-scale farming structures. A survey among our producers shows that we are succeeding in this. That's why we developed this quality label, which can now be used on our information materials"



District-News

Issue 02
2022

Austrian sustainability platform awards FoodCoop "LoKaKau" with quality label

A happy day for the FoodCoop "LoKaKau"
Last Monday, the regional association "LoKaKau" was awarded the quality label "Maintenance of food production in the region" by the Austrian Sustainability Platform.

Marianne Huber, chairwoman of the association "LoKaKau" is very pleased: "We as FoodCoop have set ourselves the goal to strengthen relationships between producers and consumers and to promote small-scale farming structures. This great award shows that we have succeeded in doing so, and from now on it can be used on our information materials"



Source(s): Figure created by authors; credits for Label PROF: Yeqingcreationz (permission for usage acquired)

Dependent	Group	Estimated marginal mean	F(1,105)	<i>p</i>
ATT	CG	6.115	0.710	0.494
	DIY	6.047		
	PROF	6.373		
AUTH	CG	5.450	2.806	0.066
	DIY	5.153		
	PROF	5.717		
IBUY	CG	5.123	3.128	0.048
	DIY	5.748		
	PROF	5.657		
IJOIN	CG	3.765	1.990	0.142
	DIY	4.204		
	PROF	4.567		

Note(s): ATT, Attitude toward the consumer network; AUTH, Authenticity of the Network; IBUY, Intention to buy; IJOIN, Intention to join the network; CG, Control group; DIY, study group with self-drawn label; PROF, study group with professionally designed label

Source(s): Table created by author

Table 2.
Results of study 2

Covariate	n items	Mean	Sd	Study 2			Study 3				
				Alpha	AVE	CCR	Mean	Sd	Alpha	AVE	CCR
Ecological consciousness	6	5.43	1.223	0.941	0.671	0.924	5.36	1.144	0.931	0.639	0.914
Social consciousness	5	6.05	1.183	0.948	0.732	0.932	6.05	1.116	0.949	0.717	0.927
Collaborative consumption	3	3.68	1.550	0.827	0.690	0.870	4.02	1.461	0.786	0.646	0.845
Voluntary simplicity	4	5.30	1.110	0.805	0.544	0.823	5.51	1.112	0.822	0.544	0.825
Debt-free consumption	5	5.98	0.975	0.894	0.616	0.889	5.93	1.002	0.902	0.665	0.908
Shopping behavior regional	1	4.16	2.024				4.52	2.084			
Shopping behavior organic	1	4.22	2.370				4.53	2.485			

Source(s): Table created by author

Table 3.
Reliability and internal validity measures of the covariates for studies 2 and 3

5.1 Methodology

We applied a 2-label design (label professionally designed PROF vs a DIY label) by 2-awarding body (official body vs self-awarded) full factorial online experiment. We used our fictitious FoodCoop “LoKaKau” and the same labels as in study 2 and created newspaper articles about the awarding of the label. We varied the displayed labels and manipulated the text according to the awarding body, leading to four test groups: awarded by official body with PROF label, self-awarded by the network with PROF label, awarded by official body with DIY label and awarded by the network with DIY label. The translated newspaper articles for two conditions are shown in [Figure 1](#), the original research was done in German (labels were not translated).

In the online experiments we checked for the manipulations success by asking respondents whether they can remember who awarded the label. A chi-square test yielded significant differences, with the majority of participants in both groups remembering the source correctly.

Austrian participants were recruited in June 2022. After an introduction they were randomly assigned to one of the experimental groups. After showing the short newspaper article, we asked the same questions to measure the dependent variables as in study 2: attitude toward the AFN (ATT = 5.80, sd = 0.988, alpha = 0.947, AVE = 0.657, CR = 0.883), perceived authenticity (AUTH = 5.02, sd = 0.968, alpha = 0.835, AVE = 0.592, CR = 0.852), intentions to buy (IBUY = 5.02, sd = 1.367) and intentions to join the network as a member (IJOIN = 3.70, sd = 1.467). Consciousness for sustainable consumption and current shopping behavior regional and organic measured on a 10-point scale served again as covariates (see Table 3). A common variance Harman's test showed an extracted variance of 28.57% indicating a low risk of common method bias.

175 participants completed the whole questionnaire. Instruction manipulation check and speed test led to discarding 43 participants. The final sample comprised 132 (38.6% male, 59.8% female, 1.5% not specified) participants, aged 18 to 66 (mean 32.67 years). There were no significant differences in age or gender between the groups.

5.2 Results

To address RQ3 and RQ4 a MANCOVA analysis was conducted with ATT, AUTH, IBUY and IJOIN as dependent variables. The awarding body of the label (source: agency vs self) and the professionalism of the label (professionalism: DIY vs professional) were entered in a full factorial design.

The overall MANCOVA yielded a significant effect for the interaction of the two factors (Source \times professionalism, $p = 0.046$). Looking into the single test statistics, another marginally significant main effect of the source on IBUY ($p = 0.085$) was found. No other main effects reached statistical significance. Surprisingly, participants indicated that they would consider buying at the network to a higher extent ($F_{(132,1)} = 3.022$, $p = 0.085$) in the self-awarded conditions (IBUY_{self} = 5.21) compared to the agency awarded conditions (IBUY_{agency} = 4.84). This finding addresses research question 3, demonstrating that the awarding agency does influence IBUY, favoring the self-awarded conditions, but does not impact ATT and AUTH.

The interaction effect (source \times professionalism) for IBUY was significant too ($F_{(132,1)} = 8.425$, $p = 0.004$). To answer research question 4, contrast analysis revealed that, surprisingly, in the self-awarded condition the PROF label outperformed the DIY label (IBUY_{professional} = 5.62 vs IBUY_{DIY} = 4.81, $p = 0.007$). However, this effect was not observed in the agency-awarded condition, and contrasts indicated that it was not statistically significant. Single comparisons of all conditions furthermore showed a significant difference for the professional conditions, where the self-awarded condition led to higher levels of IBUY compared to the agency condition (IBUY_{self} = 5.62 vs IBUY_{agency} = 4.63, $p = 0.002$).

6. Discussion

More and more manufacturers are using labels to help consumers evaluate products in terms of their sustainability (e.g. Janßen and Langen, 2017). However, in the context of AFNs, labeling goes beyond individual products and encompasses the sustainability of the network itself as potential participants consider the broader sustainability impact of joining the network. Our first study shows that consumers evaluate sustainability labels holistically and do not distinguish between various sustainability dimensions – the better the overall

assessment of a label, the more sustainable it was regarded as. The findings are also in line with [Bradu et al. \(2014\)](#), who showed that eco-labels for products influenced decision-making on an affective, holistic basis, rather than by enhancing the consumer's knowledge to trigger a more qualified reasoning process.

This led us to investigate whether the quality and professional design of the label, in addition to its information content, could have an impact on sustainability assessments. Our findings of study 1 suggest that a more professional overall impression ("nicer label") could possibly also have an impact on the sustainability assessment, as another decision relevant cue ([Chaiken and Trope, 1999](#)) is added for a quick evaluation. Study 2 supports these findings, as basically any label, whether homemade or professionally designed, has a positive effect on the intention to buy from an AFN. However, when it comes to the perceived authenticity of the networks, professional labels seem to have a better impact. Although neither label had an impact on attitudes, it appears that self-organized, non-profit AFNs could benefit from a professionally designed sustainability label. This aligns with research of [Donato and Adigüzel \(2022\)](#), who showed that while labels should be visually eye-catching and easy to understand, design complexity and feature complexity increase consumers' product evaluations.

As perceived authenticity seemed to play a role, we further tested whether "too professional" looking labels conflict with the authenticity of the AFN, as these networks are community-based and often adopt a DIY approach. According to previous research, the perceived authenticity of labels and brands can be an important determinant influencing consumer behavior (e.g. [Fritz et al., 2017](#)). We were also interested in whether it makes a difference if the label was awarded by the network itself or by an official body, and whether there was an interaction effect with the graphical quality of the label. Surprisingly, the graphical quality of the label had no effect on the perceived authenticity of the network.

We observed a significant main effect of the source from which the label was awarded, indicating that the self-awarded condition resulted in higher levels of buying intention compared to the agency-awarded condition. This finding was unexpected, as we initially anticipated that labels awarded by public institutions would be perceived as more trustworthy ([Thøgersen, 2010](#)). One possible explanation for this surprising result is that the NGO that awarded the label in our intervention was a fictitious and thus unknown institution, which may have influenced its perceived trustworthiness. Interestingly, our findings align with previous studies suggesting that fictional labels can outperform well-known labels from public institutions (e.g. [Bradu et al., 2014](#)).

7. Conclusions

7.1 Purpose and main findings

This paper aimed to contribute to a better understanding of the importance of sustainability labels for AFNs. The primary research purpose was to find out how the display of different sustainability labels affects the perception and assessment of AFNs. Through three studies, we explored how consumers perceive labels of AFNs that address the same sustainability aspects but are designed differently, examined the effect of the graphic quality of the labels and explored the impact of the label's awarding agency.

Our findings indicate that consumers do not distinguish between different sustainability dimensions displayed on AFN labels, but rather evaluate labels in a holistic manner. Given the results of all the studies conducted, non-profit AFNs could even benefit from self-awarded labels, but they should still be professional in their public presentation to better reach the everyday customer. Our results suggest that a professionally designed label is beneficial for non-profit AFNs, especially if the label is self-awarded. When the label is awarded by an official body, consumers appear to be more accepting of less professionally designed labels.

Comparing the awarding source of the label, the self-awarded condition led to higher levels of buying intention compared to the agency-awarded condition. Our results suggest that an unknown official body awarding the label to a community-based AFN offers no advantage and may even lead to lower buying intention.

7.2 Theoretical implications

Our findings on the holistic processing of sustainability labels challenge the argument that meta-labels would confuse consumers (Eberle *et al.*, 2011). Instead, our results support the idea of a meta-sustainability label that integrates all three dimensions of sustainability (Torma and Thøgersen, 2021). We propose that such a meta-label could be processed by consumers through two different routes as suggested in dual-processing models (Petty *et al.*, 1986; Chaiken, 1980). This implies that highly involved (systematic processing) consumers with background knowledge would derive more detailed and nuanced information from a meta-label, which could help them in their decision-making process. For consumers with low ability or motivation to process information systematically (heuristically processing), the type of label displayed may have little impact, as these would only be processed peripherally anyway, largely independently of the content. Nevertheless – even if only in the short term – these heuristic cues can positively influence attitudes toward sustainable consumption and subsequent purchase decisions.

Regarding the graphical quality of the label, we contribute to the literature about visual complexity of eco-labels, which is relatively scarce (Donato and Adgüzel, 2022). Whereas other researchers have concentrated on differences between logo only, text only or a combination of both (Potter *et al.*, 2021; Rihn *et al.*, 2019; Tang *et al.*, 2004) or on the influence of the text on the label, shape, size and language (Proi *et al.*, 2023), we introduced the aspect of “professionalism” to the debate. We investigated whether non-profit AFNs would benefit from professionally designed labels or if minimal graphic skills would suffice, allowing them to create their own labels. Given the limited existing research in this area, further studies are recommended to explore this aspect more comprehensively.

Although our results regarding the awarding institution were initially surprising, they add valuable insights to the discussion on the effectiveness of labels from public institutions. While some studies have shown the superiority of governmental labels over non-governmental labels (e.g. Drichoutis *et al.*, 2017), others, like our study, have found that even fictional labels worked better than labels from public institutions (e.g. Bradu *et al.*, 2014). This raises the question whether Thøgersen’s (2010) findings that public institutions are perceived to be the most trustworthy, are also valid for (sustainability) labels. We suggest that contextual factors, individual state differences and trust in the specific regulatory bodies may play crucial roles. Future research should investigate these variables and may use real labels instead of fictitious ones and exercise caution when making generalizations based on the results.

7.3 Practical implications

AFNs can benefit from using labels, similar to individual products. While self-designed labels also positively influence the perception and assessment of the networks, professionally designed labels perform better, especially when the label is self-awarded. This implies that self-organized, non-profit AFNs are advised to invest in professionally designed labels. However, if resources are limited, even a self-designed label is better than having no label at all.

Furthermore, to our knowledge, there is currently no sustainability label specifically awarded to AFNs by an official body. Although our results suggest that self-awarded labels perform even better than labels awarded by a fictional NGO, this result must be interpreted cautiously.

As mentioned above, the fictitious NGO may be perceived as less trustworthy than the AFN itself. Therefore, we recommend that well-known NGOs dedicated to sustainability support AFNs by creating and awarding professionally designed eco-labels specifically tailored for such networks. This would relieve the networks of the burden and cost of designing their own labels. However, this process should be accompanied by appropriate research to ensure its effectiveness.

7.4 Limitations and future research

Our studies are not without limitations. First, it is important to acknowledge the relatively small sample sizes used. However, despite the small sample sizes in our experiments we found some interesting effects of sustainability labels for AFNs that could be examined in further studies with larger samples. Second, although our pretest showed that respondents could clearly distinguish between DIY and professionally designed labels, this distinction may have been more apparent due to the direct comparison. Further studies should also explicitly control for the perceived quality of the labels. Third, our study was conducted with German-speaking participants in Austria, which may limit the generalizability of our results. However, considering that AFNs are becoming increasingly important in German-speaking countries while still remaining a niche phenomenon (Zoll *et al.*, 2021), our study may contribute to the promotion of these social innovations. Further research could explore sustainability labels for AFNs in different countries and languages, as cultural differences may influence the perception of AFNs (De Bernardi *et al.*, 2020).

We assume that people compare AFNs to “conventional retail” where they are used to professional labels. In this respect, AFNs must probably compete with retailers in the perception of consumers. This could be further investigated in future research as well as the levels of trust placed in the awarding institutions and whether this affects the perception of the labels. This question was outside of the scope of our studies as we were concerned with how perceived authenticity is influenced and how it affects perceptions of the labels, but not trust in institutions.

Despite these limitations, we believe that the results of our studies can help us better understand the impact of sustainability labels that refer to community-based AFNs, not just individual products.

References

- Annunziata, A., Mariani, A. and Vecchio, R. (2019), “Effectiveness of sustainability labels in guiding food choices: analysis of visibility and understanding among young adults”, *Sustainable Production and Consumption*, Vol. 17, pp. 108-115.
- Balderjahn, I., Buerke, A., Kirchgeorg, M., Peyer, M., Seegebarth, B. and Wiedmann, K.-P. (2013), “Consciousness for sustainable consumption: scale development and new insights in the economic dimension of consumers’ sustainability”, *AMS Review*, Vol. 3 No. 4, pp. 181-192.
- Bradu, C., Orquin, J.L. and Thøgersen, J. (2014), “The mediated influence of a traceability label on consumer’s willingness to buy the labelled product”, *Journal of Business Ethics*, Vol. 124 No. 2, pp. 283-295.
- Carrero, I. and Valor, C. (2012), “CSR-labelled products in retailers’ assortment: a comparative study of British and Spanish retailers”, *International Journal of Retail and Distribution Management*, Vol. 40 No. 8, pp. 629-652.
- Chaiken, S. (1980), “Heuristic vs systematic information processing and the use of source vs message cues in persuasion”, *Journal of Personality and Social Psychology*, Vol. 39 No. 5, p. 752.
- Chaiken, S. and Trope, Y. (1999), *Dual-process Theories in Social Psychology*, Guilford Press, New York.
- Conner, D.S. and Christy, R.D. (2004), “The organic label: how to reconcile its meaning with consumer preferences”, *Journal of Food Distribution Research*, Vol. 35 Nos 856-2016-57085, pp. 40-43.

- De Bernardi, P., Bertello, A., Venuti, F. and Foscolo, E. (2020), "How to avoid the tragedy of alternative food networks (AFNs)? The impact of social capital and transparency on AFN performance", *British Food Journal*, Vol. 122 No. 7, pp. 2171-2186.
- Diekmann, M. and Theuvsen, L. (2019), "Non-participants interest in CSA – insights from Germany", *Journal of Rural Studies*, Vol. 69, pp. 1-10.
- Donato, C. and Adgüzel, F. (2022), "Visual complexity of eco-labels and product evaluations in online setting: is simple always better?", *Journal of Retailing and Consumer Services*, Vol. 67, 102961.
- Drichoutis, A.C., Vassilopoulos, A., Lusk, J.L. and Nayga, R.M. (2017), "Consumer preferences for fair labour certification", *European Review of Agricultural Economics*, Vol. 44 No. 3, pp. 455-474.
- Eberle, U., Spiller, A., Becker, T., Heissenhuber, A., Leonhäuser, I. and Sundrum, A. (2011), *Joint Statement of the Scientific Advisory Board on Consumer and Food Policy and on Agricultural Policy at the Federal Ministry of Food, Agriculture and Consumer Protection*, Political Strategy for Food-Labeling, Berlin.
- Ellison, B., Duff, B.R., Wang, Z. and White, T.B. (2016), "Putting the organic label in context: examining the interactions between the organic label, product type, and retail outlet", *Food Quality and Preference*, Vol. 49, pp. 140-150.
- European Commission (2020), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System*, European Commission, Brussels.
- Falcão, D. and Roseira, C. (2022), "Mapping the socially responsible consumption gap research: review and future research agenda", *International Journal of Consumer Studies*, Vol. 46 No. 5, pp. 1718-1760.
- Fritz, K., Schoenmueller, V. and Bruhn, M. (2017), "Authenticity in branding—exploring antecedents and consequences of brand authenticity", *European Journal of Marketing*, Vol. 51 No. 2, pp. 324-348.
- Hennchen, B. and Schäfer, M. (2022), "Do sustainable food system innovations foster inclusiveness and social cohesion? A comparative study", *Frontiers in Sustainability*, Vol. 3, p. 157.
- Hertzog, M.A. (2008), "Considerations in determining sample size for pilot studies", *Research in Nursing and Health*, Vol. 31 No. 2, pp. 180-191.
- Howard, P. (2006), "Central Coast consumers want more food-related information, from safety to ethics", *California Agriculture*, Vol. 60 No. 1, pp. 14-19.
- Ihemezie, E.J., Ukwuaba, I.C. and Nnaji, A.P. (2018), "Impact of 'green' product label standards on consumer behaviour: a systematic review analysis", *International Journal of Academic Research in Business and Social Sciences*, Vol. 8 No. 9, pp. 666-684.
- Ilicic, J. and Webster, C.M. (2014), "Investigating consumer–brand relational authenticity", *Journal of Brand Management*, Vol. 21, pp. 342-363.
- Iwata, O. (2006), "An evaluation of consumerism and lifestyle as correlates of a voluntary simplicity lifestyle", *Social Behavior and Personality: An International Journal*, Vol. 34 No. 5, pp. 557-568.
- Janßen, D. and Langen, N. (2017), "The bunch of sustainability labels—Do consumers differentiate?", *Journal of Cleaner Production*, Vol. 143, pp. 1233-1245.
- Kahneman, D. and Frederick, S. (2002), "Representativeness revisited: attribute substitution in intuitive judgment", *Heuristics and Biases: The Psychology of Intuitive Judgment*, Vol. 49 Nos 49-81, p. 74.
- Kleiss, D.F. and Waiguny, M.K. (2021), Sustainability and Diversity Labels in Job Ads and Their Effect on Employer Brands. In *Advances in Advertising Research (Vol. XI) Designing and Communicating Experience* (pp. 255-272). Wiesbaden: Springer Fachmedien Wiesbaden.
- Koshy, L. and Manohar, S.J. (2016), "Young consumers attitude towards personal care product advertising", *Asia Pacific Journal of Research*, Vol. I LVIV, pp. 258-262.

- Kump, B. and Fikar, C. (2021), "Challenges of maintaining and diffusing grassroots innovations in alternative food networks: a systems thinking approach", *Journal of Cleaner Production*, Vol. 317, 128407.
- Leiner, D.J. (2019), "Too fast, too straight, too weird: non-reactive indicators for meaningless data in internet surveys", *Survey Research Methods*, Vol. 13, pp. 229-248.
- MacKenzie, S.B. and Lutz, R.J. (1989), "An empirical examination of the structural antecedents of attitude toward the ad in an advertising pretesting context", *Journal of Marketing*, Vol. 53 No. 2, pp. 48-65.
- Majer, J.M., Henscher, H.A., Reuber, P., Fischer-Kreer, D. and Fischer, D. (2022), "The effects of visual sustainability labels on consumer perception and behavior: a systematic review of the empirical literature", *Sustainable Production and Consumption*, Vol. 33, pp. 1-14.
- Marozzo, V., Raimondo, M.A., Miceli, G.N. and Scopelliti, I. (2020), "Effects of au naturel packaging colors on willingness to pay for healthy food", *Psychology and Marketing*, Vol. 37 No. 7, pp. 913-927.
- Oppenheimer, D.M., Meyvis, T. and Davidenko, N. (2009), "Instructional manipulation checks: detecting satisficing to increase statistical power", *Journal of Experimental Social Psychology*, Vol. 45 No. 4, pp. 867-872.
- Peattie, K. (2010), "Green consumption: behavior and norms", *Annual Review of Environment and Resources*, Vol. 35, pp. 195-228.
- Persada, S., Lin, S., Nadlifatin, R. and Razif, M. (2015), "Investigating the citizens' intention level in environmental impact assessment participation through an extended theory of planned behavior model", *Global Nest Journal*, Vol. 17 No. 4, pp. 847-857.
- Petty, R.E., Cacioppo, J.T., Petty, R.E. and Cacioppo, J.T. (1986), *The Elaboration Likelihood Model of Persuasion*, Springer, New York.
- Poças Ribeiro, A., Harmsen, R., Feola, G., Rosales Carréon, J. and Worrell, E. (2021), "Organising alternative food networks (AFNs): challenges and facilitating conditions of different AFN types in three EU countries", *Sociologia Ruralis*, Vol. 61 No. 2, pp. 491-517.
- Potter, C., Bastounis, A., Hartmann-Boyce, J., Stewart, C., Frie, K., Tudor, K., Bianchi, F., Cartwright, E., Cook, B. and Rayner, M. (2021), "The effects of environmental sustainability labels on selection, purchase, and consumption of food and drink products: a systematic review", *Environment and Behavior*, Vol. 53 No. 8, pp. 891-925.
- Proi, M., Dudinskaya, E.C., Naspetti, S., Ozturk, E. and Zanolì, R. (2023), "The role of eco-labels in making environmentally friendly choices: an eye-tracking study on aquaculture products with Italian consumers", *Sustainability*, Vol. 15 No. 5, p. 4659.
- Purvis, B., Mao, Y. and Robinson, D. (2019), "Three pillars of sustainability: in search of conceptual origins", *Sustainability Science*, Vol. 14 No. 3, pp. 681-695.
- Renting, H., Marsden, T.K. and Banks, J. (2003), "Understanding alternative food networks: exploring the role of short food supply chains in rural development", *Environment and Planning A*, Vol. 35 No. 3, pp. 393-411.
- Rihn, A., Wei, X. and Khachatryan, H. (2019), "Text vs logo: does eco-label format influence consumers' visual attention and willingness-to-pay for fruit plants? An experimental auction approach", *Journal of Behavioral and Experimental Economics*, Vol. 82, 101452.
- Schäufele, I. and Hamm, U. (2017), "Consumers' perceptions, preferences and willingness-to-pay for wine with sustainability characteristics: a review", *Journal of Cleaner Production*, Vol. 147, pp. 379-394.
- Sheng, G., Xie, F., Gong, S. and Pan, H. (2019), "The role of cultural values in green purchasing intention: empirical evidence from Chinese consumers", *International Journal of Consumer Studies*, Vol. 43 No. 3, pp. 315-326.
- Sheth, J.N., Sethia, N.K. and Srinivas, S. (2011), "Mindful consumption: a customer-centric approach to sustainability", *Journal of the Academy of Marketing Science*, Vol. 39 No. 1, pp. 21-39.

-
- Tang, E., Fryxell, G.E. and Chow, C.S. (2004), "Visual and verbal communication in the design of eco-label for green consumer products", *Journal of International Consumer Marketing*, Vol. 16 No. 4, pp. 85-105.
- Thøgersen, J. (2010), "Country differences in sustainable consumption: the case of organic food", *Journal of Macromarketing*, Vol. 30 No. 2, pp. 171-185.
- Thøgersen, J., Jørgensen, A.K. and Sandager, S. (2012), "Consumer decision making regarding a 'green' everyday product", *Psychology and Marketing*, Vol. 29 No. 4, pp. 187-197.
- Torma, G. and Thøgersen, J. (2021), "A systematic literature review on meta sustainability labeling—what do we (not) know?", *Journal of Cleaner Production*, Vol. 293, 126194.
- United Nations (2015), "Resolution adopted by the general assembly on 25 September 2015. Transforming our world: the 2030 agenda for sustainable development", United Nations, New York, NY.
- Webb, D.J., Mohr, L.A. and Harris, K.E. (2008), "A re-examination of socially responsible consumption and its measurement", *Journal of Business Research*, Vol. 61 No. 2, pp. 91-98.
- Ziesemer, F., Peyer, M., Klemm, A. and Balderjahn, I. (2019), "Die Messung von nachhaltigem Konsumbewusstsein", *Ökologisches Wirtschaften-Fachzeitschrift*, Vol. 31 No. 4, pp. 24-26.
- Zoll, F., Specht, K., Opitz, I., Siebert, R., Pierr, A. and Zasada, I. (2017), "Individual choice or collective action? Exploring consumer motives for participating in alternative food networks", *International Journal of Consumer Studies*, Vol. 42 No. 1, pp. 101-110.
- Zoll, F., Specht, K. and Siebert, R. (2021), "Alternative= transformative? Investigating drivers of transformation in alternative food networks in Germany", *Sociologia Ruralis*, Vol. 61 No. 3, pp. 638-659.

Corresponding author

Birgit Teufer can be contacted at: birgit.teufer@fh-krems.ac.at