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(Article begins on next page)



**Differentiating Emotions in the Theory of Planned Behaviour:
Evidence of Improved Prediction in Relation to Sustainable Food Consumerism**

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DIFFERENTIATING EMOTIONS IN THE TPB MODEL

Differentiating Emotions in the Theory of Planned Behaviour:**Evidence of Improved Prediction in Relation to Sustainable Food Consumerism****Abstract**

Purpose: The Theory of Planned Behaviour (TPB) and its extensions are often used to explain intentions to perform sustainable behaviours. Emotions can provide the impetus for action and should be considered in high-involvement situations, such as sustainable food purchase decisions. Therefore, the aim of this research work was to investigate whether the addition of different types of emotions (self-related, social, pro-active) to TPB main constructs - attitude, subjective norm, and perceived behavioural control - improves the explanation of intention to make two sustainable food purchase choices: purchase Fairtrade (FT) products and purchase through Solidarity Purchasing Groups (SPGs).

Methodology: Stepwise regression models were run to explain the intention to purchase FT products (Study 1; $N = 240$) and the intention to purchase through SPGs (Study 2; $N = 209$).

Findings: Results show that emotions increase the predictive validity of the TPB model. The study also highlights the importance to distinguish between different types of emotions. Among those considered, in both studies only pro-active emotions play a significant role in predicting food purchasing intention. Results encourage further investigation of the role of emotions in TPB-based models for predicting sustainable food purchase choices.

Originality: Differently from previous studies that considered emotions in extension of the TPB model to explain sustainable behaviours, the present work analysed separately the role of three different kinds of emotions (self-related, social, pro-active) in explaining sustainable food behaviours.

Keywords: Fairtrade; Solidarity Purchasing Groups; Self-related emotions; Social emotions; Pro-active emotions.

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27

1. Introduction

Sustainable and ethical food consumerism can be defined as “conscious ways of consumption that incorporates sustainability, but also human rights, animal welfare, and fair working conditions” (Hain, 2017, p. 74) by considering economic, social and environmental factors (World Bank, 2003).

It encompasses a variety of consumption behaviours (Hain, 2017) that relate to multiple dimensions expressed in the 17 Sustainable Development Goals (SDGs; United Nations; <https://sdgs.un.org/goals>). These behaviors range from choosing goods produced under environmentally and animal friendly conditions as well as fair labour practises, to selecting purchasing methods that *per se* ensure a reduced environmental impact and fair compensation for producers. These goals can be pursued by choosing Fairtrade (FT) certified products or by purchasing through Solidarity Purchasing Groups (SPGs).

FT production certification aims to help producers in developing countries to achieve better trading conditions (Raynolds *et al.*, 2007; Ruggeri *et al.*, 2021). FT certification guarantees that products have been realized in compliance with rules that regulate the entire supply chain, from the production to the commercialization, including that producers receive fair payment and that they have a voice in the decision-making process of the organizations (Fairtrade International, 2011; Ruggeri *et al.*, 2021).

FT products can be purchased both in specialized shops and increasingly, in dedicated departments, in large-scale distribution.

Consumers’ ethical and sustainable behaviours can also be oriented toward local producers by choosing to purchase foods through Solidarity Purchasing Groups (SPGs). SPGs are set up by citizens who cooperate to buy food (or other commonly used goods) collectively and directly from producers at a fair price for both parties, in order to counteract the effects of inequalities of the industrial production system (Corsi and Novelli, 2016; Maestriperieri *et al.*, 2018). Usually, SPGs also follow some rules aimed at respecting the environment (considering transport and packaging) and solidarity between group members and producers, as ethical principles seem to prevail over economic reasons

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in this purchasing habit (Corsi and Novelli, 2016). Moreover, this type of consumption creates favourable conditions for exchanges and relationships among buyers, since it requires the organization for the purchase, transport, and redistribution of products.

The need for sustainability-oriented consumerism has been highlighted by the United Nations 2030 Agenda (Gillani and Kutaula, 2018), and awareness of this issue is increasing (Baiardi and Morana, 2020; Eurobarometer, 2021). However, this awareness is not always decisive for the adoption of sustainable food consumption. Indeed, several studies show a gap between awareness of the need for sustainability and the actual adoption of sustainable behaviours in everyday life (e.g., Shaw *et al.*, 2016; Terlau and Hirsch, 2015). Understanding which dimensions (e.g., values; Coppola *et al.*, 2017) sustain these behaviours is important for promoting them. Several studies have examined predictors of ethical and sustainable consumer behaviour within the framework of the Theory of Planned Behaviour (Ajzen, 1991) and its extensions (e.g., Arvola *et al.*, 2008; Dionysis *et al.*, 2022; Dowd and Burke, 2013), while less research (e.g., Berki-Kiss and Menrad, 2022; Hain, 2017; Moons and De Pelsmacker, 2012; Russell *et al.*, 2017) has explored the possible influence of emotions on the adoption of such kind of behaviours. In the present work we will focus on the possible role of different kinds of emotion in TPB-based models for predicting sustainable food purchase choices.

2. Literature review

2.1 The Theory of Planned Behaviour and its extensions

The Theory of Planned Behaviour (TPB; Ajzen, 1991) maintains that behavioural intention, defined as the readiness to perform a behaviour, is the direct antecedent of behaviour. Behavioural intention, in turn, is determined by attitude (ATT), subjective norm (SN), and perceived behavioural control (PBC); the latter factor may also moderate the effect of ATT and SN on intention (La Barbera and Ajzen, 2020a; 2021). ATT toward a particular behaviour is determined by beliefs about the possible outcomes of that behaviour. SNs are determined by a person's beliefs about the opinions of relevant

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78 others regarding a specific behaviour. Finally, PBC is determined by beliefs about factors which may
79 hinder or facilitate a particular behaviour (Ajzen, 2020).

80 According to the TPB, measuring the three major factors (i.e., ATT, SN, PBC) should be sufficient
81 to have a reliable prediction of behavioural intention, which in turn is the main predictor of behaviour
82 (Ajzen, 1991). This is known as the sufficiency principle. Therefore, scholars interested in extending
83 the TPB model are expected to show the incremental validity of their model compared to the original
84 one (Fishbein and Ajzen 2010). Several authors (e.g., Ajzen, 2015; Arvola *et al.*, 2008; Spence *et al.*,
85 2018) highlighted different dimensions which can integrate the classical determinants of behavioural
86 intention, such as behavioural frequency, habit strength, knowledge and trust.

2.2 Emotions in the TPB model

89 In food research, the studies that explored the issue of adding affect/emotion-based measures to TPB
90 models tended to consider emotions in a very general way, without a clear theoretical framework, to
91 focus on a single emotion/affect, and generally fail to demonstrate the incremental validity of the
92 extended TPB model they propose over the original TPB (e.g., Graham-Rowe *et al.*, 2015; Russell *et*
93 *al.*, 2017; Tønnesen and Grunert, 2021). However, emotions play an important role in decision
94 making and, in particular, consumers' choices (Jose and Kuriakose, 2021; Moons and De Pelsmacker,
95 2012; Pfister and Böhm, 2008) and should be considered in predicting food sustainable behaviours
96 since food consumption is strictly joint to emotional dimensions (Brückner *et al.*, 2023; Edwards *et*
97 *al.*, 2013; Köster and Mojet, 2015).

98 Emotion, conceptualized as “a reaction to an object or an event [...] comprise both a feeling and
99 cognitive component” (Russell *et al.*, 2017, p. 109) and can provide an impetus for action (Forgas,
100 1994; Lazarus, 1991; Russell *et al.*, 2017). The central role of emotions in predicting behaviour was
101 already highlighted by Triandis (1977) and underlined by other scholars (Moons and De Pelsmacker,
102 2012; Perugini and Bagozzi, 2001; Pham, 1998), especially in high-involvement situations. In some
103 works, emotions have been considered as predictors of behaviour, sometimes as antecedents of the

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1
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3 104 classical TPB components, sometimes as direct antecedents of behavioural intention (De Pelsmaecker
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5 105 *et al.*, 2017; Moons and De Pelsmaecker, 2012; Perugini and Bagozzi, 2001). Also with respect to pro-
6
7 106 environmental behaviours, some studies (e.g., Berki-Kiss and Menrad, 2022; Duran *et al.*, 2011)
8
9 107 emphasize the importance of emotions among the predictors of the TPB model. However, most
10
11 108 studies that considered emotions as predictors of sustainable or ethical behaviour, have focused on
12
13 109 anticipated feelings of guilt (Nawijn and Biran, 2019) or, in the positive case, pride (Antonetti and
14
15 110 Maklan, 2014; Onwezen *et al.*, 2014; Peloza *et al.*, 2013; Russell *et al.*, 2017). The focus on
16
17 111 anticipated emotions in sustaining goal-directed behaviour is emphasized in particular by Perugini
18
19 112 and Bagozzi (2001): the anticipation of positive emotions associated with fulfilment of a desired goal
20
21 113 contributes to explain the intention to act. Notwithstanding, focusing on the two emotions of guilt and
22
23 114 pride alone may fall short in light of the wide and varied range of possible emotions (e.g., Roseman,
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25 115 2013; Shuman *et al.*, 2017). Other scholars, such as Berki-Kiss and Menrad (2022), consider different
26
27 116 kinds of emotional feelings referred to four possible functions (information, speed, relevance,
28
29 117 commitment) in their measurement of emotions, although analyse the impact of the emotional
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31 118 dimensions on the intention of pro-social purchasing as a whole construct.
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35 119 Beside these considerations, sustainable and ethical food consumerism is a complex behaviour that
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37 120 brings into play different dimensions of emotions as it is at the crossroads between the personal
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39 121 dimension, in terms of advantages and benefits of this type of behaviour, and the social dimension,
40
41 122 in terms of the influence of significant others. As Hareli and Parkinson (2008) argue, emotions can
42
43 123 be divided into social and non-social. Although much of emotions have a social component since
44
45 124 their ontogenetic development occurs in social relations (e.g., family context), the criteria that these
46
47 125 scholars propose to identify true social emotions are that their antecedent appraisals were “developed
48
49 126 to address issues relating to other people, including social comparison, the consideration of norms
50
51 127 and social judgments as responsibility and deservingness” (Hareli and Parkinson, 2008, p. 138).
52
53 128 Emotions such as shame, guilt, embarrassment, contempt, pride, envy, and admiration can be placed
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55 129 in this category. Social emotions also have the practical function of guiding social behaviours (Hareli

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and Parkinson, 2008). Thus, they were the most considered kind of emotions in predicting ethical and sustainable behaviours (Arvola *et al.*, 2008; Onwezen *et al.*, 2014; Russell *et al.*, 2017; Schneider *et al.*, 2017). Thomas *et al.* (2009) referred to “pro-social” emotions to explain the activation towards a social issue, specifically the reduction of inequality. Among the pro-social emotions, in particular, they indicated “guilt” as the emotion that pushes to do “the right thing” (Thomas *et al.*, 2009, p. 317). Further works (Geiger and Keller, 2018; Pfattheicher *et al.*, 2016) focalized on the role of other pro-social emotions as compassion and empathy in fostering sustainable behaviours.

Yet, other types of emotions can be involved in predicting sustainable consumption behaviours. Namely, these behaviours may be guided by emotions which Hareli and Parkinson (2008) describe as related to one’s self-evaluation or well-being. Similarly, Roseman’s (2013) analysis of “self-conscious” emotions felt toward the self and involving one’s identity, suggests that the adoption of sustainable food consumption behaviours can be oriented by feelings of satisfaction (or frustration) when behaving coherently with one’s sense of identity and values. In line with this consideration, some works (e.g., Elsantil and Hamza, 2019; Wang and Wu, 2016) examine both other-oriented (or “public”) and self-oriented (or “private”) self-conscious emotions in predicting sustainable consumerism and show that both kinds of emotions influence the willingness to adopt sustainable consumer behaviours.

Emotions also have a crucial role in driving action based on the outcomes of the emotion-antecedent appraisals (Roseman, 2013). One important dimension in driving action is the appraised positive or negative valence of the emotion-eliciting situations, which induces attraction and moving towards in the first case, repulsion and avoiding in the second case. Several works consider indeed both the positive and the negative pole of emotional dimensions. For instance, Son *et al.* (2022) consider positive and negative emotions as “information” that contributes to develop positive or negative attitudes towards a behaviour and thus, to sustain or hinder its effective enactment.

Another important dimension is the appraisal of high versus low control over a given situation and, consequently, the development of more active (as anger or involvement) versus more passive (as fear

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or happiness) emotions. More in general, emotions related to the perception of positive valence and high control provide energy and motivation to act (Roseman, 2013), and can thus play an important role in predicting behavioural intention.

From the reviewed literature it emerges that social emotions – especially guilt and pride - have been considered in some extensions of the classical TPB model in order to enhance the prediction of ethical and sustainable consumption (Antonetti and Maklan, 2014). However, to our knowledge, self-related emotions and emotions sustaining actions (pro-active emotions) have not yet been considered in extended TPB models. Previous works that inserted emotions as extension of the TPB model to explain the intention to adopt sustainable behaviours considered emotion as a unique theoretical construct or examined only one single emotion (e.g., “environmental protection emotion”, Lavuri, 2022). Thus, in the present work, we propose to distinguish between three kinds of emotions - self-related emotions, social emotions, and pro-active emotions - and to consider these different kinds of emotions in predicting behavioural intention to adopt sustainable and ethical food consumerism.

3. Overview of the work

The aim of the current work is to assess whether the addition of emotion-based factors to a standard TPB model would improve the prediction of intention to perform sustainable food purchasing choices, and whether the intentions to perform different sustainable purchasing behaviours (namely, purchasing FT products or purchasing food through SPGs) are influenced by three different kinds of emotions: self-related, social and pro-active emotions. The theoretical model that guided our research work is represented in Figure 1.

- FIGURE 1. Theoretical model of determinants of intention to perform sustainable food purchasing behaviours

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The investigation was conducted by two studies using online questionnaires and focusing on purchasing FT food products (Study 1) and purchasing food through SPGs (Study 2).

The research design of both studies was developed in accordance with the Italian Legislative Decree 101/2018 on protection of personal data and conformed to the provisions of the 1964 Declaration of Helsinki (as revised in Fortaleza, 2013). All ethical guidelines for human research were followed. The questionnaire was provided with a cover letter that openly described the research purpose and explicitly stated the anonymity of data collection and treatment, and the voluntary nature of participation. All participants signed an informed consent form.

To assess the understandability of the questionnaire and its compilation time, before the administration both versions (i.e., the one focusing on purchasing FT food products and the other focusing on purchasing food through SPGs) were pre-tested with a group of 10 consumers each.

For the analyses we used the software SPSS Statistic v.27 for Windows.

3. Study 1

3.1 Aims and hypotheses

In the first study, we aimed to test whether the addition of emotion-based factors increased the predictive power of a TPB-model in relation to the intention to buy FT food products. Drawing on previous research, the following hypothesis was formulated:

Hp1: The prediction of intention to purchase FT products is improved introducing in the TPB model self-related, social, and pro-active emotions.

3.2 Material and methods

3.2.1 Participants and procedure

The investigation took place in Italy, before the Covid-19 pandemic. The presentation of the study and the link to the online questionnaire were disseminated through the mailing lists of several FT shops, social networks and newsletters, as well as through the personal contacts of the research team.

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The questionnaire was filled in by 300 respondents, but 60 were excluded as they missed at least one of the multi-item scales under investigation. The final sample consists of 240 participants. Most of them were female (73.8%) and their average age was 38.95 ($SD = 12.66$). A consistent part of them were unmarried (44.3%) and the great part had no children (59.9%). For more details about participants' characteristics, see Table I, column Study 1 - FT.

-TABLE I-

3.2.2 Measures

In Study 1, we focused on intention to purchase FT food products. TPB constructs were measured following the guidelines provided by Fishbein and Ajzen (2010). Intention was measured by three items: "When I have a choice, I buy FT products"; "I am willing to pay more for FT products"; "I always recommend my friends to buy FT products", rated on a 7-point Likert response scale [1=Completely false; 7 = Completely true]. The items were averaged into a single score: the higher the score, the higher the intention to purchase FT food products (Cronbach's alphas are provided in Table II). Three single-item scales with 7-point response format were employed to measure attitude, subjective norm, and perceived behavioural control: "In general, my attitude toward buying FT products is: [-3 = unfavourable; +3 = favourable]"; "Most people who are important to me think I should buy FT products: [-3 = unlikely; +3 = likely]"; "For me, buying FT products is: [-3 = difficult; +3 = easy]". The higher the values, the more favourable the attitude, the higher the perceived normative support, and the perceived behavioural control. To simplify comparisons with other variables, the response scale was recoded in 1 to 7 values, where 1 = -3; 7 = +3.

Emotions towards buying FT food were measured with three sets of *ad hoc* items. Participants were asked to report how they feel when purchasing FT products on 7-point semantic-differential scales. In the identification of the couples of emotions, we took in mind, where possible, the three dimensions of pleasure-displeasure (or "negative-positive"; Roseman, 2013; Shuman *et al.*, 2017), arousal-no

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arousal, and dominance-submissiveness indicated by Russell and Mehrabian (1977), in relation to the following three kinds of emotions:

- 1) Self-related emotions: self-satisfaction (satisfied with me - dissatisfied with me), frustration (frustrated - fulfilled), contentment (content - discontent), happiness (happy - sad)
- 2) Social emotions: guilt (guilty - with a clear conscience), contempt (despised - appreciated), blame (blameworthy - esteemed), pride (proud - disappointed)
- 3) Pro-active emotions: hope (hopeful - resigned), commitment (involved - indifferent).

Answers to the items were recoded such that the negative pole of the scale was associated to lower values, the positive one to higher values.

3.2.3 Preliminary analyses

We ran an explorative factor analysis (EFA) on the 10 items measuring emotional feelings when purchasing an FT product. We used the Generalized Least Square Method, more suitable for non normal distribution of data. The KMO and Bartlett's test showed that the data were suitable for an exploratory factor analysis, KMO = .935; Bartlett's $\chi^2 = 1772.58$, $df = 45$, $p < .001$ (Shrestha, 2021). The analysis extracted only one factor with eigenvalue > 1 , explaining 62.23% of total variance. All items loaded onto the single factor with loadings $> .70$. Therefore, we calculated an average score for the whole emotion scale, and average scores for the three subscales theoretically distinguished. In the following analyses, we compared the predictive validity of the emotion scale as a whole vs. the three subscales.

3.3 Results

Table II provides means and standard deviations of the study variables as well as correlations among them.

-TABLE II-

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5 260 In order to assess whether emotions would improve the predictive validity of a traditional TPB
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7 261 model as regards the intention to purchase FT food products, a stepwise regression model was run.
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10 262 In the first step, intention to purchase FT products was regressed on the three TPB major constructs
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12 263 (ATT, SN, PBC). The model explained a significant proportion of variance ($R^2 = .659$). All three
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14 264 TPB constructs exerted a significant effect on intention (Table III, Step 1). The single measure of
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17 265 emotions (Em Tot) was entered as an explanatory variable in the second step: the additional
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19 266 variance explained was significant ($\Delta R^2 = .009$) and so was the effect of emotions (Table III, Step
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21
22 267 2). In the third step, the single measure of emotions was excluded from the model, and the three
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24 268 measures of emotions (Em Soc, Em Self, Em Pro) were entered: the additional variance explained
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26 269 in participants' intention ($\Delta R^2 = .015$) was significant. The effect of pro-active emotions was
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28 270 significant, whereas the effect of self-related and social emotions was not (Table III, Step 3).
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33 272 -TABLE III-
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38 274 **3.4 Discussion**

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40 275 The results show that the regression model based on the original TPB explains a significant and
41
42 276 substantial amount of the variance in participants' intention to purchase FT food products.
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44 277 Nevertheless, the introduction of emotions as a single factor slightly increased the explained variance.
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46
47 278 In the third step, the single factor representing emotions was removed, while the three different
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49 279 emotion dimensions were included in the regression model: In this case, the proportion of explained
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51 280 variance was also significantly larger than in step 1 (original TPB model). These results support Hp1.
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54 281 Moreover, of the three different types of emotions, the results indicate that only pro-active emotions
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56 282 have a significant impact on purchase intention for FT products.
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284 **4. Study 2**

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

4.1 Aims and hypotheses

In Study 2, we tested whether the incremental validity of adding emotion-based factors to a TPB-model was confirmed in relation to a different behaviour in the realm of ethical consumerism, namely buying food through SPGs. We formulated the following hypothesis:

Hp2: The prediction of intention to purchase through SPGs is improved introducing in the TPB model self-related, social, and pro-active emotions.

4.2 Material and methods**4.2.1 Participants and procedure**

The questionnaire was completed in electronic form via Qualtrics, before Covid-19 pandemic. The link was forwarded by e-mail to the network of SPGs in different Italian territories. Moreover, for the dissemination of the questionnaire, it was also possible to take advantage of the contribution of a magazine focused on ethical and environmental issues (“Terra Nuova”), which dedicated an article on its web portal presenting the research and the link for the online survey. Two hundred and nine participants completed the survey while 56 questionnaires were excluded as they missed at least one of the multi-item scales under investigation. Most participants were female (69.9%) and their average age was 45.6 ($SD = 11.18$). Most were married (66.8%) and had children (68.6%): this is coherent with the fact that through the SPGs are usually bought quantity of products suitable for families of three/four people at least. For more details about participants’ characteristics, see Table 1, column Study 2 - SPGs.

4.2.2 Measures

In Study 2, the same measures of Study 1 were used, replacing, in each item, “FT products” with “through the SPGs”.

4.2.3 Preliminary analyses

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3 311 Also in Study 2, we first ran an EFA on the 10 items measuring emotional feelings when purchasing
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5 312 through SPGs. Data were factorable, KMO = .857; Bartlett's $\chi^2 = 636.63$, $df = 45$, $p < .001$). Using
6
7 313 the Generalized Least Square Method, only one factor with eigenvalue > 1 was extracted, accounting
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10 314 for 48.51% of the total variance. All items loaded onto the single factor with loadings $> .55$. Therefore,
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12 315 we calculated an average score for the whole emotion scale and average scores for the three subscales
13
14 316 theoretically distinguished. As for Study 1, in the following analyses, we compared the predictive
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16
17 317 validity of the emotion scale as a whole vs. the three subscales.
18

4.3 Results

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23 320 Table IV provides means and standard deviations of the study variables as well as correlations among
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26 321 them.
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31 323 -TABLE IV-
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35 325 Similarly to Study 1, a stepwise regression model was used for testing whether the measures of
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37 326 emotions would improve the predictive validity of a traditional TPB model as regards intention to
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39
40 327 purchase food products through SPGs. In the first step (intention to purchase through SPGs regressed
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42 328 on the three TPB major constructs -ATT, SN, PBC-), the model explained a significant proportion of
43
44 329 variance ($R^2 = .32$); ATT and PBC were significantly associated with intention, whereas the effect of
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46
47 330 SN was marginal (Table V, Step 1). In the second step (addition of the single measure of emotions),
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49 331 the additional variance explained ($\Delta R^2 = .02$) was significant compared to Step 1 and the single
50
51 332 emotion score was significantly associated with intention (Table V, Step 2). In the third step (entering
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53 333 of the three measures of theoretically distinguished emotions and excluding the single measure of
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55
56 334 emotions), the additional variance explained in participants' intention ($\Delta R^2 = .035$) was significant.
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58 335 The effect of pro-active emotion was significant, whereas the effect of self-related and social
59
60 336 emotions was not (Table V, Step 3).

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337
338 -TABLE V-

339
340 **4.4 Discussion**

341 Overall, results of the Study 2 are very similar to those of the Study 1, and provide support to Hp2.
342 Adding emotions to a traditional TPB-based model significantly increases the proportion of explained
343 variance in participants' intention to buy through SPGs. Similar to Study 1, the three different
344 emotional factors perform slightly better than the single emotional factor in terms of variance
345 explained. Finally, pro-active emotions are again the only ones, among the three kinds of emotions
346 considered, to be significantly associated with intention to buy food products through SPGs.

347
348 **5. General discussion and conclusions**

349 Within the theoretical framework of the Theory of Planned Behaviour (TPB, Ajzen, 1991; Fishbein
350 and Ajzen, 2010), this research aimed to analyse the determinants of intention to make sustainable
351 food consumption choices by adding different kinds of emotions to the traditional TPB model.
352 Considering sustainable food consumption as a conscious purchasing choice that takes into account
353 the impact on the environment, animal welfare and producers' working conditions (Hain, 2017;
354 Tallontire *et al.*, 2001), we focused on two sustainable behaviours: purchasing Fairtrade (FT) food
355 products and purchasing food through Solidarity Purchasing Groups (SPGs). In the TPB model, the
356 intention to perform a behaviour is primarily explained by the attitude towards the behaviour,
357 subjective norms, and perceived behavioural control. Several scholars (e.g., Ajzen, 2015; Arvola *et al.*,
358 2008; Spence *et al.*, 2018) added other possible determinants (e.g., habit strength, knowledge,
359 trust) to this model. However, emotions were less frequently considered among antecedents, although
360 some previous work identified consumers' emotions as important predictors of ethical consumerism
361 intentions (Arvola *et al.*, 2008; Berki-Kiss and Menrad, 2022; Dowd and Burke, 2013; Schneider *et al.*,
362 2017) and food consumption (Edwards *et al.*, 2013; Köster and Mojet, 2015). Given the wide

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3 363 range of emotional feelings (e.g., Roseman, 2013; Shuman *et al.*, 2017), in the present work we
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5 364 distinguished between three conceptually distinct types of emotions in predicting intention to make
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8 365 sustainable food consumption choices: self-related, social and pro-active emotions.

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10 366 In two studies involving 240 and 209 participants, respectively, we analysed the determinants of the
11
12 367 intention to purchase FT food products and the intention to purchase food through SPGs entering the
13
14 368 three kinds of emotions in addition to attitude, subjective norms and perceived behavioural control in
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17 369 stepwise regression models. Since exploratory factor analyses suggested considering emotions as a
18
19 370 single factor, we ran the stepwise regression models either with emotions as a whole or as three
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21 371 separate factors to understand the difference between the two strategies and the empirical usefulness
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23
24 372 of distinguishing between the three emotion types.

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26 373 The results of the two studies provide support to the research hypotheses. Indeed, the hypothesis that
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28 374 adding emotions to the original TPB model improves the prediction of intention to perform
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30 375 sustainable behaviours was confirmed for both purchases of FT products (Study 1) and purchases
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32
33 376 through SPGs (Study 2): the three classical antecedents of the TPB model explained a significant
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35 377 proportion of the variance, but the addition of emotions significantly improved the regression models
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37 378 with an additional explained variance ranging from 1.5% to 3.5% when three emotion types were
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40 379 considered separately. This result is even more interesting because it is robust with respect to two
41
42 380 different behaviours. Moreover, it is not the same to consider emotions as a whole or as three separate
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44 381 dimensions (self-related, social, and pro-active emotions). In both studies, the incremental validity of
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46
47 382 the model with the three separate factors was higher compared to the model including the single
48
49 383 emotional factor.

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51 384 The distinction between three different types of emotions allows for a more detailed understanding
52
53 385 of the relationship between emotions and the behavioural intentions measured in the studies. Overall,
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56 386 pro-active emotions seem to be the class of emotions that plays a more relevant role in predicting the
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58 387 purchase intention for FT products and through SPGs, while self-related and social emotions did not
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60 388 predict the intention to purchase FT food products or to purchase food through SPGs. This is an

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2
3 389 unexpected result. Some previous studies (e.g., Elsantil and Hamza, 2019; Wang and Wu, 2016)
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5 390 suggested that self-oriented and other oriented emotions predict the willingness to adopt sustainable
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7 391 consumer behaviours. However, in these studies pro-active emotions were not jointly considered.
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10 392 Our work is innovative in this respect but it does not allow us to make a timely comparison with
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12 393 previous results; thus, future studies are necessary.

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15 394 Considering the three classical antecedents of the TPB, the influence of subjective norms on the
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17 395 intention of purchasing through SPGs was marginal, while it was high for the intention to purchase
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19 396 FT products. This is quite surprising since subjective norms represent the “perceived social pressure
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22 397 to perform or not to perform the behaviour” (Ajzen, 1991, p. 188). Purchasing through SPGs
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24 398 necessarily requires the organization of a group to purchase and redistribute products. One might
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26 399 expect, therefore, that group members would have influenced each other at the time of recruitment
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28 400 and would continue to influence each other to carry out this purchasing choice. Thus, the social
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31 401 dimension should be a central component of this behaviour, but neither subjective norms nor social
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33 402 emotions appeared to be relevant in predicting purchase intention via SPGs. One possible explanation
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35 403 for this result could be that ethical consumer behaviour is guided by a mix of selfish and altruistic
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38 404 beliefs and motivations. In the case of purchasing food through SPGs, behaviour could be guided by
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40 405 more individual/egoistic considerations (such as those related to health and the low price of the
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42 406 products purchased) prevailing on social motivations (see also Verneau *et al.*, 2019).

47 408 **5.1 Limitations**

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49 409 The measurement of the three classical antecedents of the TPB model (attitude, subjective norms,
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52 410 perceived behavioural control) performed by single items can be considered the main limitation of
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54 411 this work. Even if an increasing number of scholars (e.g., Allen *et al.*, 2022; Berki-Kiss and Menrad,
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56 412 2022; Gogol *et al.*, 2014; Oluka *et al.*, 2014) consider the use of single-item measures as adequate,
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58 413 the most common practice is to use composite measures made of at least three items for each
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theoretical construct whose validity and internal consistency can be assessed. In future research, instruments made up with more items measuring these three theoretical dimensions should be used.

Also, the distribution of several study variables' frequency is relevantly skewed – which is very common in TPB-based studies (see Fishbein and Ajzen, 2010). This characteristic of the dataset prevents an accurate analysis of the TPB factors interactions, suggesting some caution in interpreting the results, especially as regards the lack of influence of subjective norms on intention (La Barbera and Ajzen, 2020a, 2021; Yzer and van den Putte, 2014).

It should further be pointed out that the two studies were conducted before the Covid-19 pandemic. This global event could have influenced the beliefs (Dudek and Śpiewak, 2022; Foti and Timpanaro, 2021; George and Nair, 2022) which determine attitudes, norms and perceived control (e.g., De Leeuw *et al.*, 2015; La Barbera and Ajzen, 2020b) which, in turn, can influence ethical purchasing intentions. Future research could fruitfully follow this intriguing path.

Finally, the convenience samples involved in the present studies represent another important limitation, which suggests caution in generalizing the current studies' findings to other contexts without further research.

Despite these limitations, the present work offers several contributions to the line of research on predictors of intention to make ethical food purchase choices. Specifically, the results of the two studies show that the addition of emotions to the three classical antecedents of the TPB, contributes significantly to the explanation of ethical purchasing intentions. To date, studies that consider emotions in extended versions of the TPB model are not very common (e.g., Berki-Kiss and Menrad, 2022; Moons and De Pelsmacker, 2012; Perugini and Bagozzi, 2001), and they generally do not provide a comparison between the original TPB-based model, and the “augmented” one they propose, thus failing to assess the incremental validity of the new model and the importance of the added factors (Graham-Rowe *et al.*, 2015; Russell *et al.*, 2017). Especially for ethical and sustainable food consumerism, very few works (e.g., Berki-Kiss and Menrad, 2022; Duran *et al.*, 2011) have considered several kinds of emotions. This is quite surprising given that the ethical and sustainable

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behaviours of purchasing FT products and purchasing through SPGs are aimed at increasing personal and social wellbeing, both locally and for the planet as a whole (Yamoah *et al.*, 2016). Emotions associated to self-perception, to social relationships and to the perception of personal control can be deeply involved in the decision to engage in this type of behaviours.

5.2 Conclusions and implications

The consideration of different kinds of emotions, namely self-related, social and pro-active emotions, in extending the TPB model, represents the innovative contribution of the present work. In addition, results show that only pro-active emotions play a significant role in predicting ethical and sustainable food purchase intentions. Pro-active emotions were operationalized in terms of hope and commitment, emotions that provide an “impetus for action” (Lazarus, 1991) and motivation to move towards a goal-congruent situation (Roseman, 2013). More than the self-related and social dimensions of emotions, the emotional activation seems to play a key role in guiding sustainable purchase intentions. Certainly, future research should deepen the pattern of the relationships between different kinds of emotions by using also qualitative methods such as interviews or focus groups involving consumers. In addition, future research could examine the role of emotions in their various manifestations in predicting intention to perform other ethical behaviours, in line with Berki-Kiss and Menrad (2022).

The practical implications of these findings should also be considered. Promoting sustainable and ethical food purchasing decisions may be important for consumers to feel empowered to contribute to human and planetary well-being through small but significant behaviours. The attention to sustainability is an issue that can no longer be ignored (Vallaey, 2018), for the survival of humanity and the safeguard of the planet, starting from the Agenda 2030 defined by the United Nations. Identifying dimensions that could play a role in promoting these behaviours, in addition to the classic predictors of the TPB model, could be helpful in developing interventions to support them. In particular, one can focus on the role that pro-active emotions may play in promoting sustainable

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purchase behaviours. To activate such emotions and thus encourage the adoption of sustainable behaviours, different types of interventions can be developed for both current adult consumers and young citizens who are future consumers. For actual consumers, information campaigns could be designed to highlight the human and environmental benefits of careful purchasing choices: Kim *et al.* (2019), for example, show that emotional messages to environmentally friendly behaviour can be more effective than purely informative messages because they also induce emotional activation. Other possible tools to trigger emotions that promote sustainable behaviour are games and gamification: Ahmed and Johnson (2021) propose a review of practises to guide emotions in information seeking to promote sustainable behaviours. Even if children are not yet responsible for their family's food purchasing behaviour, they will be, and maintaining intentions toward future sustainable behaviour is critical. To this end, both formal and informal educational interventions can be proposed: Tillmanns (2020), for example, suggests developing educational interventions based on stimulating emotions through influential images or messages to trigger profound changes toward sustainability.

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DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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DIFFERENTIATING EMOTIONS IN THE TPB MODEL

TABLES

Table I. Demographic Features of the Study 1 and Study 2 Samples

		Study 1 (FT)	Study 2 (SPGs)
		N = 240	N = 209
Gender	Female	73.8%	69.9%
	Male	26.3%	30.1%
Age	Less or equal to 25 years old	16.4%	16.4%
	26-40 years old	39.1%	39.1%
	41-55 years old	31.9%	31.9%
	More than 55 years old	12.6%	12.6%
Marital status	Unmarried	44.3%	24.5%
	Married/cohabiting	45.1%	66.8%
	Divorced/separated/widow/er	10.6%	8.6%
Children	Yes	40.1%	68.6%
	No	59.9%	31.4%
Household income	Less than 1.200€	22.2%	9.1%
	From 1.201€ to 2.000€	35.7%	31.3%
	From 2.001€ to 3.000€	23.5%	41.9%
	More than 3.000€	18.6%	17.7%
Profession	Entrepreneur/manager/senior official	4.7%	5.3%
	Freelance professionals	6.8%	9.6%
	Teacher	5.1%	11.5%
	Office workers	34.6%	34.1%
	Salesperson or craftsman	3.8%	6.7%
	Workman/woman	1.7%	5.8%
	Housekeeper	3.0%	5.8%
	Student	13.7%	2.4%
	Unemployed	5.6%	3.4%
	Retired	3.8%	6.3%
Other	17.1%	9.1%	

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

Table II. Correlations, Means and Standard Deviations for the Study 1 Variables

N=240	1.	2.	3.	4.	5.	6.	7.	8.
1. Int FT	-							
2. ATT	.714**	-						
3. SN	.446**	.315**	-					
4. PBC	.674**	.528**	.333**	-				
5. Em Tot	.502**	.521**	.327**	.339**	-			
6. Em Soc	.387**	.406**	.275**	.257**	.943**	-		
7. Em Self	.483**	.512**	.315**	.315**	.955**	.850**	-	
8. Em Pro	.566**	.562**	.332**	.409**	.860**	.714**	.759**	-
α	.92	-	-	-	.86	.86	.88	.85
<i>M</i>	5.28	6.25	4.64	5.38	5.54	5.46	5.59	5.58
<i>SD</i>	1.59	.97	1.57	1.54	1.00	1.02	1.04	1.27

** $p < .001$

Note: Int FT: Intention to purchase FT products; ATT: Attitude towards purchasing FT products; SN: Subjective Norms; PBC: Perceived behavioural control; Em Tot: Emotion scale as a whole; Em Soc: Social emotions; Em Self: Self-related emotions; Em Pro: Pro-active emotions

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

Table III. Stepwise Regression Model of the Intention to Purchase FT Products

	Step 1		Step 2		Step 3	
	β	p	β	p	β	p
ATT	.463	<.001	.414	<.001	.388	<.001
SN	.177	<.001	.158	<.001	.154	<.001
PBC	.370	<.001	.365	<.001	.352	<.001
Em Tot	-	-	.111	.015	-	-
Em Soc	-	-	-	-	-.070	.340
Em Self	-	-	-	-	.072	.366
Em Pro	-	-	-	-	.147	.020
	$R^2 = .659$		$\Delta R^2 = .009$		$\Delta R^2 = .015$	
	$F(3, 236) = 152.02, p < .001$		$F(1, 235) = 6.05, p = .015$		$F(3, 233) = 3.69, p = .013$	

Note: ATT: Attitude towards purchasing FT products; SN: Subjective Norms; PBC: Perceived behavioural control; Em Tot: Emotion scale as a whole; Em Soc: Social emotions; Em Self: Self-related emotions; Em Pro: Pro-active emotions

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

Table IV. Correlations, Means and Standard Deviations for the Study 2 Variables

N=209	1.	2.	3.	4.	5.	6.	7.	8.
1. Int SPGs	-							
2. ATI	.508**	-						
3. SN	.226**	.140*	-					
4. PBC	.386**	.339**	.233**	-				
5. Em Tot	.262**	.270**	.113	.027	-			
6. Em Soc	.196**	.196**	.061	-.073	.912**	-		
7. Em Self	.241**	.275**	.121	.145*	.912**	.720**	-	
8. Em Pro	.292**	.264**	.121	-.010	.821**	.653**	.649**	-
α	.82	-	-	-	.85	.78	.82	.73
<i>M</i>	5.52	6.50	4.96	5.71	5.44	5.26	5.62	5.44
<i>SD</i>	1.15	.67	1.41	1.22	.83	.89	.90	1.05

** $p < .001$

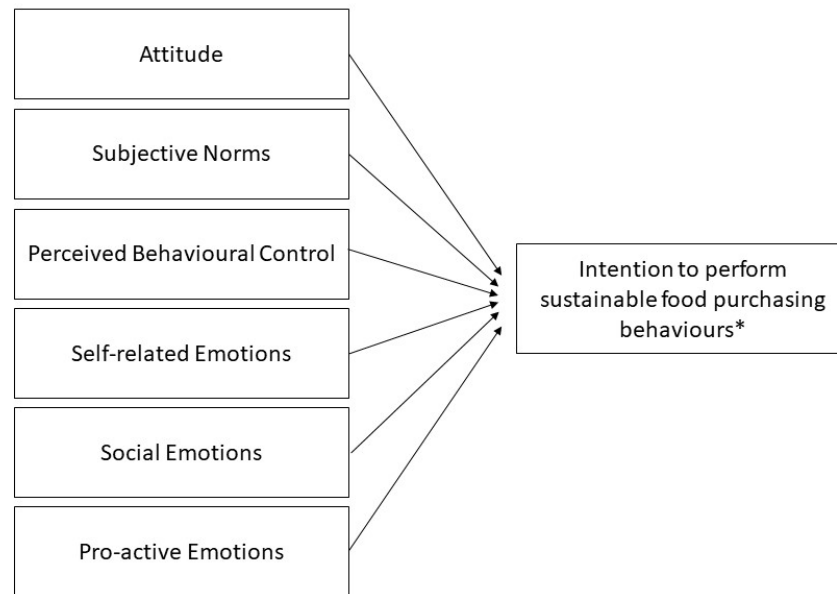
Note: Int SPGs: Intention to purchase through SPGs; ATI: Attitude towards purchasing through SPGs; SN: Subjective Norms; PBC: Perceived behavioural control; Em Tot: Emotion scale as a whole; Em Soc: Social emotions; Em Self: Self-related emotions; Em Pro: Pro-active emotions

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

Table V. Stepwise Regression Model of the Intention to Purchase Through SPGs

	Step 1		Step 2		Step 3	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
ATT	.417	<.001	.376	<.001	.364	<.001
SN	.115	.056	.101	.089	.096	.104
PBC	.214	<.001	.227	<.001	.258	<.001
Em Tot	-	-	.143	.018	-	-
Em Soc	-	-	-	-	.076	.395
Em Self	-	-	-	-	-.092	.313
Em Pro	-	-	-	-	.196	.017
<i>R</i> ² = .32		$\Delta R^2 = .02$		$\Delta R^2 = .035$		
<i>F</i> (3, 203) = 31.53, <i>p</i> < .001		<i>F</i> (1, 202) = 5.73, <i>p</i> = .018		<i>F</i> (3, 200) = 3.63, <i>p</i> = .014		

Note: ATT: Attitude towards purchasing through SPGs; SN: Subjective Norms; PBC: Perceived behavioural control; Em Tot: Emotion scale as a whole; Em Soc: Social emotions; Em Self: Self-related emotions; Em Pro: Pro-active emotions



* Purchasing FT products (Study 1) or Purchasing food through SPGs (Study 2)

FIGURE 1. Theoretical model of determinants of intention to perform sustainable food purchasing behaviours

254x190mm (96 x 96 DPI)

Reviewer: 1

Recommendation: Minor Revision

General comment: As one paper is describing output of two studies, I would suggest renaming "study" in to the "phase" throughout the manuscript. For example: "Phase 1" instead of "Study 1" and "Phase 2" instead of "Study 2".

- Thank you for your suggestion, yet we still reckon that keeping the distinction between Study 1 and Study 2 makes the paper more readable. Please note that they are two different studies, with different samples. Phase 1 and 2 may be more suitable for Time 1 and Time 2 of a longitudinal work.

Also, the structure of the paper is quite unusual which makes it difficult to follow the line. Therefore, please restructure the content as proposed below in the specific comments.

Specific comments:

Page 6: "3. Aim and hypothesis of the study" instead of "3. Overview of the work" and transfer the text on hypotheses of both studies here.

Page 7: After the first paragraph ending as "...and pro-active emotions." New subtitle "4. Material and methods" should be given. Immediately after it place "4.1 Research design".

After that Aims and hypotheses of both studies should be merged and presented under the new section as described above "3. Aim and hypothesis of the study". The same goes for "3.2.1 Participants and procedure" which should be merged under the new subtitle described above "4.1 Research design" and later where possible please merge outcomes of both studies under the same chapter. If doing so text like it is now under 4.2.2 will not be necessary anymore. Also, the discussion for study 2 is quite short in comparison to the discussion for study 1. So, the new order of subchapters would be like this:

- 3 Aim and hypothesis of the study
- 4 Material and methods
 - 4.1 Research design
 - 4.2 Participants and procedure
 - 4.3 Measures
 - 4.4 Preliminary analyses
- 5 Results
 - 5.1 Phase 1
 - 5.2 Phase 2
- 6 Discussion
 - 6.1 Limitations
- 7 Conclusions and implications

I am sure you will be capable of text redistribution into the new order as proposed above.

- As the two studies are autonomous, as regards both the kind of sustainable purchasing behavior and the samples, we preferred to keep their description distinguished. Nevertheless, we tried to streamline the methods and results sections of the two studies, in order to avoid any redundancy.

Page 16 Line 31-60: I see this text more in the discussion section than in the conclusions. Also, because conclusions are already quite extensive.

→ Thank you, we moved this part to the General discussions section.

Tables should be numbered with Arabic not Latin numbers.

→ Please note that the Journal's Instructions for authors read: "Tables should be typed and submitted in a separate file to the main body of the article. The position of each table should be clearly labelled in the main body of the article with corresponding labels clearly shown in the table file. Tables should be numbered consecutively in Roman numerals (e.g. I, II, etc.)."

Table IV: The records in the first column should be aligned in one and not two lines, as is the case now with the text in 1st, 6th and 7th line.

→ Thank you, we aligned them in one only line each.

1. Originality: Does the paper contain new and significant information adequate to justify publication?: Compared to previous research this one incorporated emotions into the extension of the theory of planned behavior model to elucidate sustainable behaviors. Authors examined the influence of three distinct types of emotions (self-related, social, proactive) in explicating sustainable food behaviors.

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?:

The paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources.

→ Thank you

3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?:

The theory is sufficiently described. However, the sections on methodology need to be reorganized to make them clearer and easier for the reader to follow

→ As said above, we tried to reduce redundancy in order to be clearer both in the methods and results sections.

4. Results: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?:

Like for the methodology section also results sections needs to be partly reorganized to make them clearer. More about reorganization in the specific comments to the authors. The conclusion should be shorter and part of the text should be transferred to the discussion.

→ As said above, we tried to reduce redundancy in order to be clearer both in the methods and results sections

5. Implications for research, practice and/or society: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality of life)? Are these implications consistent with the findings and conclusions of the paper?:

Despite the limitations clearly described by the authors, the study adds further insight to the research on predictors of intention to make ethical food purchase choices.

→ Thank you

6. Quality of Communication: Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.: Yes

Reviewer: 2

Recommendation: Minor Revision

Comments

One paragraph should be rewrite:

This is very unclear: there is mixt-up of behaviour and production methods in relation to SDG. This has to be changed.

It includes a variety of consumption behaviours (Hain, 2017) that refer to several dimensions expressed in the 17 Sustainable Development Goals (SDGs; United Nations; <https://sdgs.un.org/goals>), ranging from environmentally and animal-friendly production methods, to purchasing products that ensure fair working conditions and compensation for producers. These goals can be pursued by choosing Fairtrade (FT) certified products or by purchasing through Solidarity Purchasing Groups (SPGs).

→ Thank you. We proposed a different formulation:

“It encompasses a variety of consumption behaviours (Hain, 2017) that relate to multiple dimensions expressed in the 17 Sustainable Development Goals (SDGs; United Nations; <https://sdgs.un.org/goals>). These behaviors range from choosing goods produced under environmentally and animal friendly conditions as well as fair labour practises, to selecting purchasing methods that per se ensure a reduced environmental impact and fair compensation for producers”

1. Originality: Does the paper contain new and significant information adequate to justify publication?:

Yes, paper provide significant new contribution to the TBP model by introduction of three groups of emotions – proactive, social and self-related. This approach is new because before emotions are rarely considered as a factor in this model to predict purchase decision. Also, the emotions were

1
2
3 considering as one general factor/group, nobody took in consideration a different group of
4 emotions as a different influential factor. This is very important to get detailed information what is
5 behind sustainable purchase behaviour and how to use it to promote such behaviour facilitating
6 development of sustainable businesses.
7

8 → Thank you
9

10
11
12 2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the
13 relevant literature in the field and cite an appropriate range of literature sources? Is any significant
14 work ignored?:
15

16 The relevant literature was considered and literature review is done very well pointing out
17 arguments that are important to understand research approach and concept.
18

19 → Thank you
20

21
22
23 3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other
24 ideas? Has the research or equivalent intellectual work on which the paper is based been well
25 designed? Are the methods employed appropriate?: The methodology applied is very sound. It is
26 based on very known theoretical approach and theory behind definition of different group of
27 emotions is well explained. The research instrument is well prepared, but the sampling method can
28 be changed into either face to face interview or maybe focus groups. The one scale measurement
29 of attitudes, social norms and perceived behaviour control is unusual and it is weakness of this
30 methodological approach. But, authors are aware of those limitations - it is clearly stated as
31 limitation.
32

33 → Thank you for these suggestions and comments! In future research it would be interesting to
34 use also some qualitative methods to further deepen the pattern of relationships between
35 different kinds of emotions and ethical and sustainable food purchase intentions. In this line
36 we added in the following sentence in the 'Conclusions and implications' section (lines 453-
37 455):
38

39 Certainly, future research should deepen the pattern of relationships between different kinds
40 of emotions by using also qualitative methods such as interviews or focus groups involving
41 consumers.
42

43 We are aware that the one scale measurement of attitudes, social norms and perceived
44 behavioural control presents a limitation. However, a growing number of scholars find it
45 appropriate to use single-item psychometric measures, especially to reduce the length of
46 questionnaires (Allen et al., 2022; Gogol et al., 2014). Indeed, the use of the TPB model
47 requires the measurement of numerous constructs, making the questionnaire lengthy, and
48 this seems to be a hindrance to completion (Oluka et al., 2014). It is not uncommon in
49 studies about TPB model to find single-item measures (e.g. Lawton et al., 2009). We further
50 discussed this point and added the pertinent references.
51

52 Allen, M.S., Iliescu, D., and Greiff, S. (2022), "Single item measures in psychological science",
53 *European Journal of Psychological Assessment*, Vol. 38 No.1, pp. 1-5. <https://doi.org/10.1027/1015-5759/a000699>
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56 Gogol, K., Brunner, M., Goetz, T., Martin, R., Ugen, S., Keller, U., ... and Preckel, F. (2014), "My
57 questionnaire is too long! The assessments of motivational-affective constructs with three-item
58 and single-item measures", *Contemporary Educational Psychology*, Vol.39 No.3, pp. 188-205.
59 <http://dx.doi.org/10.1016/j.cedpsych.2014.04.002>
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3 Lawton, R., Conner, M., and McEachan, R. (2009), "Desire or reason: Predicting health behaviors
4 from affective and cognitive attitudes", *Health Psychology*, Vol. 28 No.1, p. 56-65.
5 <https://doi.org/10.1037/a0013424>
6

7 Oluka, O.C., Nie. S., and Sun. Y. (2014), "Quality Assessment of TPB-Based Questionnaires: A
8 Systematic Review", *PLoS ONE*, Vol. 9 No. 4, p. e94419. <https://doi.org/10.1371/journal.pone.0094419>
9
10

11 4. Results: Are results presented clearly and analysed appropriately? Do the conclusions
12 adequately tie together the other elements of the paper?:
13

14 Yes. The results are explained in very well. Maybe it could be useful to additionally find connection
15 between results and with findings available in literature to explain why two groups of emotions
16 (social and self-related) had no significant influence on sustainable purchasing behaviour. It was
17 not expected to see as a result. So, that is why it is always recommended to consider literature to
18 try to find explanation. The explanation is given partly in conclusion as well. Additional effort will
19 improve quality of research.
20

21 → Thank you for this suggestion. We underlined that this result was unexpected, as other
22 studies that considered social and self-related emotions showed influence of these latter on
23 the intention of sustainable behaviors. Notwithstanding, these studies did not examine them
24 as extensions of the TPB model. Moreover, they did not consider jointly pro-active emotions.
25 Our work, thus, is innovative in this respect. However, this does not allow us to make a
26 timely comparison with previous results.
27

28 To find an explanation for our results, future studies are necessary.
29
30

31 5. Implications for research, practice and/or society: Does the paper identify clearly any
32 implications for research, practice and/or society? Does the paper bridge the gap between theory
33 and practice? How can the research be used in practice (economic and commercial impact), in
34 teaching, to influence public policy, in research (contributing to the body of knowledge)? What is
35 the impact upon society (influencing public attitudes, affecting quality of life)? Are these
36 implications consistent with the findings and conclusions of the paper?:
37
38

39 Paper clearly identifies implication of research, but one part (side) of it is missing. There is no
40 recommendations how to use this proactive emotions that influence sustainable purchase
41 behaviour and how to strength appearance of those emotions during the purchase session. What
42 can be done to use these emotions to facilitate sustainable purchase behaviour. These proactive
43 emotions are connected with knowledge about FT and SPGs products. It is important to provide
44 wide set of clear, easy to understand information about purchase benefits - contribution to the
45 prevention of further climate change, contamination of different kinds, waste etc. This should be
46 elaborated in more details to upgrade quality of paper.
47
48

49 → Thank you for your suggestion. We developed practical implication in the text underling the
50 urgency of promoting the adoption of sustainable behaviors, for people and the planet. Even
51 if our results do not enable us to assume that knowledge about FT products and SPGs can
52 solicit the activation of pro-active emotions, we delineated possible kinds of intervention
53 aimed at improving adoption of sustainable purchasing habits both in actual and future
54 consumers (e.g., emotional messages, gamification, disruptive learning education activities).
55
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57

58 6. Quality of Communication: Does the paper clearly express its case, measured against the
59 technical language of the field and the expected knowledge of the journal's readership? Has
60 attention been paid to the clarity of expression and readability, such as sentence structure, jargon
use, acronyms, etc.:

1
2
3 Quality of communication is very high.

4 → Thank you
5
6
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10 **Reviewer: 3**
11

12 Recommendation: Major Revision
13
14
15

16 Dear Authors,

17 Overall, this is an interesting topic, especially in the context of extending the TPB model to explain
18 sustainable food behaviours.

19 In my opinion, the manuscript is well and simply written, clearly expresses its arguments, and is
20 suitable for the target audience of the journal considering the above comments.
21

22 → Thank you a lot for your feedback.
23

24 →

25 1. Originality: Does the paper contain new and significant information adequate to justify
26 publication?: Yes, compared to previous studies, the novelty of this work is that emotions are
27 considered as a new construct in extending the TPB model to explain sustainable food behaviour.
28

29 2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the
30 relevant literature in the field and cite an appropriate range of literature sources? Is any significant
31 work ignored?:
32

33 Yes. Important literature in the study area is included in the manuscript, adequate for the
34 interested reader to have an understanding of the subject. What is missing is new-recent studies in
35 the area and more references regarding the methodology applied.
36

37 The authors use and provide only 1 reference from BFJ in the list of references.
38

39 → Thank you for your comment. We updated literature research with new-recent studies and
40 we considered, specifically, some works from BFJ:
41

42 Coppola, A., Verneau, F., Caracciolo, F., & Panico, T. (2017). Personal values and pro-social
43 behaviour: The role of socio-economic context in fair trade consumption. *British Food*
44 *Journal*, 119(9), 1969-1982.: <https://doi.org/10.1108/BFJ-10-2016-0474>
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52 purchase intentions for blockchain traceable coffee using the theory of planned behaviour. *British*
53 *Food Journal*, 124(12), 4304-4322. <https://doi.org/10.1108/BFJ-05-2021-0541>
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55 Dudek, M., and Śpiewak, R. (2022), "Effects of the COVID-19 Pandemic on Sustainable Food Systems:
56 Lessons Learned for Public Policies? The Case of Poland", *Agriculture*, Vol.12, No. 1, p 61.
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3 Elsanitil, Y., and Hamza, E.A. (2019), "The impact of self-conscious emotions on willingness to pay for
4 sustainable products", *Humanities & Social Sciences Reviews*, Vol. 7 No. 2, pp. 77-90.
5 <https://doi.org/10.18510/hssr.2019.729>
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7 Foti, V.T. and Timpanaro, G. (2021), "Relationships, sustainability and agri-food purchasing
8 behaviour in farmer markets in Italy", *British Food Journal*, Vol. 123 No. 13, pp. 428-
9 453. <https://doi.org/10.1108/BFJ-04-2021-0358>
10

11 Geiger, S.M., and Keller, J. (2018), "Shopping for clothes and sensitivity to the suffering of others:
12 The role of compassion and values in sustainable fashion consumption", *Environment and*
13 *Behavior*, Vol. 50 No. 10, pp. 1119-1144. <https://doi.org/10.1177/0013916517732109> Jose, H., &
14 Kuriakose, V. (2021). Emotional or logical: Reason for consumers to buy organic food
15 products. *British food journal*, 123(12), 3999-4016. <https://doi.org/10.1108/BFJ-10-2020-0916>
16

17 Lavuri, R. (2022), "Organic green purchasing: Moderation of environmental protection emotion and
18 price sensitivity", *Journal of Cleaner Production*, Vol. 368, p. 133113.
19 <https://doi.org/10.1016/j.jclepro.2022.133113>
20

21 Nawijn, J., and Biran, A. (2019), "Negative emotions in tourism: a meaningful analysis", *Current Issues*
22 *in Tourism*, Vol. 22 No. 19, pp. 2386-2398. <https://doi.org/10.1080/13683500.2018.1451495>
23

24 Nawijn, J., and Biran, A. (2019), "Negative emotions in tourism: a meaningful analysis", *Current Issues*
25 *in Tourism*, Vol. 22 No. 19, pp. 2386-2398. <https://doi.org/10.1080/13683500.2018.1451495>
26

27 Son, J., Nam, C., Diddi, S. (2022), "Emotion or Information: What Makes Consumers Communicate
28 about Sustainable Apparel Products on Social Media?", *Sustainability*, Vol. 14, p. 2849.
29 <https://doi.org/10.3390/su14052849>
30

31 Tillmanns, T. (2020), "Learning sustainability as an effect of disruption", *Environmental Education*
32 *Research*, Vol.26 No.1, pp.14-26, <https://doi.org/10.1080/13504622.2019.1682125>
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34
35
36 3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other
37 ideas? Has the research or equivalent intellectual work on which the paper is based been well
38 designed? Are the methods employed appropriate?:
39

40 The paper has some weaknesses in methodology that need further investigation before a
41 convincing contribution can be made.

42 The paper is quite poorly structured, making it difficult to follow the results and the methodology
43 used.
44

45 My main concern in this paper is the measurement of the three classic antecedents of the TPB
46 model (attitude, subjective norms, perceived behavioural control) by single items.

47 According to Ajzen's theory, at least three items are required to measure each construct. If you use
48 a smaller number of statements, you must justify this clearly and well.
49

- 50 → Following the advice and the highly relevant theoretical position expressed, we have
51 furtherly discussed this point in the limitation section both in general on psychometric
52 methodology and specifically on studies conducted within the TPB model framework. It is
53 interesting to note, however, that a growing number of scholars find it appropriate to use
54 single-item psychometric measures, especially to reduce the length of questionnaires (Allen
55 et al., 2022; Gogol et al., 2014). Indeed, the use of the TPB model requires the
56 measurement of numerous constructs, making the questionnaire lengthy, and this seems to
57 be a hindrance to completion (Oluka et al., 2014). It is not uncommon in studies about TPB
58 model to find single-item measures (e.g. Lawton et al., 2009).
59
60

In any case, we acknowledge that future studies should be conducted with multiple item instruments in order to ascertain the validity and internal consistency of the measures.

Allen, M.S., Iliescu, D., and Greiff, S. (2022), "Single item measures in psychological science", *European Journal of Psychological Assessment*, Vol. 38 No.1, pp. 1-5. <https://doi.org/10.1027/1015-5759/a000699>

Gogol, K., Brunner, M., Goetz, T., Martin, R., Ugen, S., Keller, U., ... and Preckel, F. (2014), "'My questionnaire is too long!' The assessments of motivational-affective constructs with three-item and single-item measures", *Contemporary Educational Psychology*, Vol.39 No.3, pp. 188-205. <http://dx.doi.org/10.1016/j.cedpsych.2014.04.002>

Lawton, R., Conner, M., and McEachan, R. (2009), "Desire or reason: Predicting health behaviors from affective and cognitive attitudes", *Health Psychology*, Vol. 28 No.1, p. 56-65. <https://doi.org/10.1037/a0013424>

Oluka, O.C., Nie, S., and Sun, Y. (2014), "Quality Assessment of TPB-Based Questionnaires: A Systematic Review", *PLoS ONE*, Vol. 9 No. 4, p. e94419. <https://doi.org/10.1371/journal.pone.0094419>

Suggestion to authors: using SEM or PLS would probably allow you to get much more out of your data and gain a different insight into the role of each variable. It would also be interesting to see the factor loadings (were items removed from the scales? which items were used?).

Please consider this in future submissions/revisions of this paper, or at least a justification of why only simple regressions were used in this paper.

- Thank you for this suggestion. However, as discussed in the previous comment, we measured the three classic antecedents of the TPB model (attitude, subjective norms, perceived behavioural control) by single items. Therefore, there is no measurement model to assess with CFA/SEMs in this regard. Overall, we think that regression analysis is more suitable. Please consider also that several studies which use an extended TPB model to explain the intention to perform sustainable behavior choose the same method. Some examples are:

Geiger, S.M., and Keller, J. (2018), "Shopping for clothes and sensitivity to the suffering of others: The role of compassion and values in sustainable fashion consumption", *Environment and Behavior*, Vol. 50 No. 10, pp. 1119-1144. <https://doi.org/10.1177/0013916517732109>

La Barbera, F., Amato, M., Rivero R., and Verneau, F. (2022). "Social Emotions and Good Provider Norms in Tackling Household Food Waste: An Extension of the Theory of Planned Behavior" *Sustainability* 14, no. 15: 9681. <https://doi.org/10.3390/su14159681>

Dean, M., Raats, M. M., & Shepherd, R. (2012). The role of self-identity, past behavior, and their interaction in predicting intention to purchase fresh and processed organic food. *Journal of applied social psychology*, 42(3), 669-688. <https://doi.org/10.1111/j.1559-1816.2011.00796.x>

Finally, we ran instead an explorative factorial analysis for the emotion scale, as it has not been used before. We provided factor loadings of the one-factor solution in supplementary materials (Tables IS and IIS).

More data about survey is needed, in which year the data was collected.

- We added that our studies were conducted before the Covid-19 pandemic: this represent a further limitation of our work. We added this point to the limitations section. Future works

1
2
3 should analyse if this global event modified intention to perform these sustainable
4 purchasing behaviors.
5

6 Whether the survey instrument (questionnaire) has been pre-tested
7

8 → Yes, thank you. We added this information: please see line 189-191.
9

10 How were data treated prior to analysis?
11

12 → We specified that no complete questionnaires with at least one of the multi-item scales
13 under investigation were excluded before starting the analyses: 60 questionnaires for Study
14 1 and 56 for study 2, respectively.
15
16

17 4. Results: Are results presented clearly and analysed appropriately? Do the conclusions
18 adequately tie together the other elements of the paper?:
19

20 It should be clear from the results of the first study what percentage of the variance is explained by
21 the extended model compared to the original TPB model.
22

23 Assessment of TPB model of the intention to purchase sustainable food is missing, it should be
24 shown graphically.
25

26 → In the original manuscript full results were already provided in the text (pp.10-11) and Table
27 3, study 1, and pg. 13 and Table 5, study 2.
28

29 However, following your suggestions, we reported the proportion of the explained variance
30 of all three steps of the regression analyses also in the text.
31

32 Finally, even if we cannot provide a graphical assessment of our regression models, as
33 suggested by another anonymous reviewer, we added the figure of the conceptual model
34 we tested in the paper.
35
36
37

38 5. Implications for research, practice and/or society: Does the paper identify clearly any
39 implications for research, practice and/or society? Does the paper bridge the gap between theory
40 and practice? How can the research be used in practice (economic and commercial impact), in
41 teaching, to influence public policy, in research (contributing to the body of knowledge)? What is
42 the impact upon society (influencing public attitudes, affecting quality of life)? Are these
43 implications consistent with the findings and conclusions of the paper?:
44

45 Even though some implications of the research are presented, they could be more elaborated in
46 the paper.
47

48 → Following this suggestion, the implications section has been enriched, underlining the
49 urgency of promoting the adoption of sustainable behaviors, for people and the planet. Even
50 if our results do not enable us to assume that knowledge about FT products and SPGs can
51 solicit the activation of pro-active emotions, we delineated possible kinds of intervention
52 aimed at improving adoption of sustainable purchasing habits both in actual and future
53 consumers (e.g., emotional messages, gamification, disruptive learning education activities
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59 **Reviewer: 4**
60

Recommendation: Reject

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2
3 The paper should be reviewed both in the way it is written and the results presented. It should
4 include the conceptual model tested.

5
6 → We added a figure depicting the conceptual model tested in the paper.

7
8 I think that is quite insufficient to simply analyse if the change in variance when emotions are
9 INCLUDED is significant. You should try to discuss more which ones are more influence and why

10
11 → Thanks, we discussed this point at lines: 281-282; 347-348; 390-395. In addition, Tables III
12 and V show the β values of each dimension in the stepwise regression models for Study 1
13 and Study 2 respectively.
14
15
16

17
18 1. Originality: Does the paper contain new and significant information adequate to justify
19 publication?:

20 The subject has some originality although is not new. It would be better if the authors could
21 updated the literature review concerning the use of emotions in a extended TPB model.
22

23 → Thank you. We updated the review with the most recent empirical evidences and theoretical
24 proposals in the field of TPB and emotions research, as you can see through the text and in
25 the reference list, e.g.:

26
27 De Pelsmaeker, S., Schouteten, J.J., Gellynck, X., Delbaere, C., De Clercq, N., Hegyi, A., Kuti,
28 T., Depypere, F. and Dewettinck, K. (2017), "Do anticipated emotions influence behavioural
29 intention and behaviour to consume filled chocolates?", British Food Journal, Vol. 119 No. 9, pp.
30 1983-1998. <https://doi.org/10.1108/BFJ-01-2016-0006>

31
32 Dionysis, S., Chesney, T., and McAuley, D. (2022), "Examining the influential factors of
33 consumer purchase intentions for blockchain traceable coffee using the theory of planned
34 behavior", British Food Journal, Vol. 124 No.12, pp. 4304-4322. <https://doi.org/10.1108/BFJ-05-2021-0541>
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41 2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the
42 relevant literature in the field and cite an appropriate range of literature sources? Is any significant
43 work ignored?:

44 The paper is a bit confusing to read. Knowing that author's language is not English, some
45 verification should be made to this aspect. As said before, the authors did not present a novel
46 literature review
47

48 → As said, we updated the literature, furthermore we carefully conducted a major revision of
49 the language.
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55
56 3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other
57 ideas? Has the research or equivalent intellectual work on which the paper is based been well
58 designed? Are the methods employed appropriate?:

59 It does not seem to me that the methodology is correct. Seems that the authors mistake the
60 hypothesis with research questions.

- 1
2
3 → Unfortunately, the reviewer's comment is too general and unspecified, so that it is was not
4 possible to address it directly. However, since the current version of the paper was deeply
5 and extensively revised, there are reasons to think the reviewer's concern was addressed in
6 a meaningful way.
7

8
9 It is not clear at what point the emotions are added to the original TPB model (actually, the
10 variables are included, not added) in the different steps). It is not clear which variable of the TPB
11 model is influenced by emotions (I would imagine, the ATT or PBC).
12

- 13 → In the original manuscript full results were already provided in the text (pp.10-11) and Table
14 3, study 1, and pg. 13 and Table 5, study 2. In any case, we emphasized the different
15 additions in the Step 2 and Step 3 of the regression models, respectively of the emotions as
16 unique factor and as three separate factors (after excluding the unique factor of step 2). As
17 we used regression model, we considered only direct effects of the different dimensions
18 (ATT, PBC, SN and emotions) on Int and did not examine influence of emotions on ATT,
19 PBC, SN.
20
21

22 I was expecting to see a figure (or several) with the conceptual model.
23

- 24 → We added the figure of the conceptual model we tested in the paper.
25

26 I think the author should review deeply the methodology applied and presentation of results
27

- 28 → As said before, the current version of the paper was deeply and extensively revised: we
29 hope the reviewer's concern was addressed in a meaningful way.
30
31

32 4. Results: Are results presented clearly and analysed appropriately? Do the conclusions
33 adequately tie together the other elements of the paper?:
34

35 No. The results are confusing and presented not on a clear way. Also, I do not think that the
36 conclusions withdrawn are in accordance with the results presented despite the fact that they are
37 correct by common sense. As recognized, it is a deep limitation measuring each component of the
38 TPB by a single item. No strong values and conclusions can be withdrawn. According to literature,
39 authors should have at least 3!
40

- 41 → We already acknowledged that this is a limitation, we deeply discussed the point (lines 413-
42 417).
43
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45

46 5. Implications for research, practice and/or society: Does the paper identify clearly any
47 implications for research, practice and/or society? Does the paper bridge the gap between theory
48 and practice? How can the research be used in practice (economic and commercial impact), in
49 teaching, to influence public policy, in research (contributing to the body of knowledge)? What is
50 the impact upon society (influencing public attitudes, affecting quality of life)? Are these
51 implications consistent with the findings and conclusions of the paper?:
52
53

54 The paper does not give any indication of how the theory can be put into practice
55

- 56 → The implications section has been enriched, underlining the urgency of promoting the
57 adoption of sustainable behaviors, for people and the planet. Even if our results do not
58 enable us to assume that knowledge about FT products and SPGs can solicit the activation
59 of pro-active emotions, we delineated possible kinds of intervention aimed at improving
60 adoption of sustainable purchasing habits both in actual and future consumers (e.g.,
emotional messages, gamification, disruptive learning education activities

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6 6. Quality of Communication: Does the paper clearly express its case, measured against the
7 technical language of the field and the expected knowledge of the journal's readership? Has
8 attention been paid to the clarity of expression and readability, such as sentence structure, jargon
9 use, acronyms, etc.:

10
11 Should be English and scientific writing reviewed. For example. If the sample in both studies is the
12 same, there's no need to repeat the explanation in both points

- 13
14 → We carefully checked the English form through the text.
15 As a note, the reviewer's comment about the sample is quite surprising: throughout the text
16 it has been made very clear that the 2 studies have been conducted with two different
17 samples with different numbers of participants. Also, the characteristics of the different
18 samples are fully listed in Table 1. Hence, it is hard to understand how the reviewer could
19 have had this kind of doubt.
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DIFFERENTIATING EMOTIONS IN THE TPB MODEL

Differentiating Emotions in the Theory of Planned Behaviour:**Evidence of Improved Prediction in Relation to Sustainable Food Consumerism****Abstract**

Purpose: The Theory of Planned Behaviour (TPB) and its extensions are often used to explain intentions to perform sustainable behaviours. Emotions can provide the impetus for action and should be considered in high-involvement situations, such as sustainable food purchase decisions. Therefore, the aim of this research work was to investigate whether the addition of different types of emotions (self-related, social, pro-active) to TPB main constructs - attitude, subjective norm, and perceived behavioural control - improves the explanation of intention to make two sustainable food purchase choices: purchase Fairtrade (FT) products and purchase through Solidarity Purchasing Groups (SPGs).

Methodology: Stepwise regression models were run to explain the intention to purchase FT products (Study 1; $N = 240$) and the intention to purchase through SPGs (Study 2; $N = 209$).

Findings: Results show that emotions increase the predictive validity of the TPB model. The study also highlights the importance to distinguish between different types of emotions. Among those considered, in both studies only pro-active emotions play a significant role in predicting food purchasing intention. Results encourage further investigation of the role of emotions in TPB-based models for predicting sustainable food purchase choices.

Originality: Differently from previous studies that considered emotions in extension of the TPB model to explain sustainable behaviours, the present work analysed separately the role of three different kinds of emotions (self-related, social, pro-active) in explaining sustainable food behaviours.

Keywords: Fairtrade; Solidarity Purchasing Groups; Self-related emotions; Social emotions; Pro-active emotions.

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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1. Introduction

Sustainable and ethical food consumerism can be defined as “conscious ways of consumption that incorporates sustainability, but also human rights, animal welfare, and fair working conditions” (Hain, 2017, p. 74) by considering economic, social and environmental factors (World Bank, 2003).

It encompasses a variety of consumption behaviours (Hain, 2017) that relate to multiple dimensions expressed in the 17 Sustainable Development Goals (SDGs; United Nations; <https://sdgs.un.org/goals>). These behaviors range from choosing goods produced under environmentally and animal friendly conditions as well as fair labour practises, to selecting purchasing methods that *per se* ensure a reduced environmental impact and fair compensation for producers. These goals can be pursued by choosing Fairtrade (FT) certified products or by purchasing through Solidarity Purchasing Groups (SPGs).

FT production certification aims to help producers in developing countries to achieve better trading conditions (Raynolds *et al.*, 2007; Ruggeri *et al.*, 2021). FT certification guarantees that products have been realized in compliance with rules that regulate the entire supply chain, from the production to the commercialization, including that producers receive fair payment and that they have a voice in the decision-making process of the organizations (Fairtrade International, 2011; Ruggeri *et al.*, 2021).

FT products can be purchased both in specialized shops and increasingly, in dedicated departments, in large-scale distribution.

Consumers’ ethical and sustainable behaviours can also be oriented toward local producers by choosing to purchase foods through Solidarity Purchasing Groups (SPGs). SPGs are set up by citizens who cooperate to buy food (or other commonly used goods) collectively and directly from producers at a fair price for both parties, in order to counteract the effects of inequalities of the industrial production system (Corsi and Novelli, 2016; Maestriperieri *et al.*, 2018). Usually, SPGs also follow some rules aimed at respecting the environment (considering transport and packaging) and solidarity between group members and producers, as ethical principles seem to prevail over economic reasons

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in this purchasing habit (Corsi and Novelli, 2016). Moreover, this type of consumption creates favourable conditions for exchanges and relationships among buyers, since it requires the organization for the purchase, transport, and redistribution of products.

The need for sustainability-oriented consumerism has been highlighted by the United Nations 2030 Agenda (Gillani and Kutaula, 2018), and awareness of this issue is increasing (Baiardi and Morana, 2020; Eurobarometer, 2021). However, this awareness is not always decisive for the adoption of sustainable food consumption. Indeed, several studies show a gap between awareness of the need for sustainability and the actual adoption of sustainable behaviours in everyday life (e.g., Shaw *et al.*, 2016; Terlau and Hirsch, 2015). Understanding which dimensions (e.g., values; Coppola *et al.*, 2017) sustain these behaviours is important for promoting them. Several studies have examined predictors of ethical and sustainable consumer behaviour within the framework of the Theory of Planned Behaviour (Ajzen, 1991) and its extensions (e.g., Arvola *et al.*, 2008; Dionysis *et al.*, 2022; Dowd and Burke, 2013), while less research (e.g., Berki-Kiss and Menrad, 2022; Hain, 2017; Moons and De Pelsmacker, 2012; Russell *et al.*, 2017) has explored the possible influence of emotions on the adoption of such kind of behaviours. In the present work we will focus on the possible role of different kinds of emotion in TPB-based models for predicting sustainable food purchase choices.

2. Literature review

2.1 *The Theory of Planned Behaviour and its extensions*

The Theory of Planned Behaviour (TPB; Ajzen, 1991) maintains that behavioural intention, defined as the readiness to perform a behaviour, is the direct antecedent of behaviour. Behavioural intention, in turn, is determined by attitude (ATT), subjective norm (SN), and perceived behavioural control (PBC); the latter factor may also moderate the effect of ATT and SN on intention (La Barbera and Ajzen, 2020a; 2021). ATT toward a particular behaviour is determined by beliefs about the possible outcomes of that behaviour. SNs are determined by a person's beliefs about the opinions of relevant

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

78 others regarding a specific behaviour. Finally, PBC is determined by beliefs about factors which may
79 hinder or facilitate a particular behaviour (Ajzen, 2020).

80 According to the TPB, measuring the three major factors (i.e., ATT, SN, PBC) should be sufficient
81 to have a reliable prediction of behavioural intention, which in turn is the main predictor of behaviour
82 (Ajzen, 1991). This is known as the sufficiency principle. Therefore, scholars interested in extending
83 the TPB model are expected to show the incremental validity of their model compared to the original
84 one (Fishbein and Ajzen 2010). Several authors (e.g., Ajzen, 2015; Arvola *et al.*, 2008; Spence *et al.*,
85 2018) highlighted different dimensions which can integrate the classical determinants of behavioural
86 intention, such as behavioural frequency, habit strength, knowledge and trust.

88 ***2.2 Emotions in the TPB model***

89 In food research, the studies that explored the issue of adding affect/emotion-based measures to TPB
90 models tended to consider emotions in a very general way, without a clear theoretical framework, to
91 focus on a single emotion/affect, and generally fail to demonstrate the incremental validity of the
92 extended TPB model they propose over the original TPB (e.g., Graham-Rowe *et al.*, 2015; Russell *et*
93 *al.*, 2017; Tønnesen and Grunert, 2021). However, emotions play an important role in decision
94 making and, in particular, consumers' choices (Jose and Kuriakose, 2021; Moons and De Pelsmacker,
95 2012; Pfister and Böhm, 2008) and should be considered in predicting food sustainable behaviours
96 since food consumption is strictly joint to emotional dimensions (Brückner *et al.*, 2023; Edwards *et*
97 *al.*, 2013; Köster and Mojet, 2015).

98 Emotion, conceptualized as “a reaction to an object or an event [...] comprise both a feeling and
99 cognitive component” (Russell *et al.*, 2017, p. 109) and can provide an impetus for action (Forgas,
100 1994; Lazarus, 1991; Russell *et al.*, 2017). The central role of emotions in predicting behaviour was
101 already highlighted by Triandis (1977) and underlined by other scholars (Moons and De Pelsmacker,
102 2012; Perugini and Bagozzi, 2001; Pham, 1998), especially in high-involvement situations. In some
103 works, emotions have been considered as predictors of behaviour, sometimes as antecedents of the

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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3 104 classical TPB components, sometimes as direct antecedents of behavioural intention (De Pelsmaecker
4
5 105 *et al.*, 2017; Moons and De Pelsmaecker, 2012; Perugini and Bagozzi, 2001). Also with respect to pro-
6
7 106 environmental behaviours, some studies (e.g., Berki-Kiss and Menrad, 2022; Duran *et al.*, 2011)
8
9 107 emphasize the importance of emotions among the predictors of the TPB model. However, most
10
11 108 studies that considered emotions as predictors of sustainable or ethical behaviour, have focused on
12
13 109 anticipated feelings of guilt (Nawijn and Biran, 2019) or, in the positive case, pride (Antonetti and
14
15 110 Maklan, 2014; Onwezen *et al.*, 2014; Peloza *et al.*, 2013; Russell *et al.*, 2017). The focus on
16
17 111 anticipated emotions in sustaining goal-directed behaviour is emphasized in particular by Perugini
18
19 112 and Bagozzi (2001): the anticipation of positive emotions associated with fulfilment of a desired goal
20
21 113 contributes to explain the intention to act. Notwithstanding, focusing on the two emotions of guilt and
22
23 114 pride alone may fall short in light of the wide and varied range of possible emotions (e.g., Roseman,
24
25 115 2013; Shuman *et al.*, 2017). Other scholars, such as Berki-Kiss and Menrad (2022), consider different
26
27 116 kinds of emotional feelings referred to four possible functions (information, speed, relevance,
28
29 117 commitment) in their measurement of emotions, although analyse the impact of the emotional
30
31 118 dimensions on the intention of pro-social purchasing as a whole construct.
32
33 119 Beside these considerations, sustainable and ethical food consumerism is a complex behaviour that
34
35 120 brings into play different dimensions of emotions as it is at the crossroads between the personal
36
37 121 dimension, in terms of advantages and benefits of this type of behaviour, and the social dimension,
38
39 122 in terms of the influence of significant others. As Hareli and Parkinson (2008) argue, emotions can
40
41 123 be divided into social and non-social. Although much of emotions have a social component since
42
43 124 their ontogenetic development occurs in social relations (e.g., family context), the criteria that these
44
45 125 scholars propose to identify true social emotions are that their antecedent appraisals were “developed
46
47 126 to address issues relating to other people, including social comparison, the consideration of norms
48
49 127 and social judgments as responsibility and deservingness” (Hareli and Parkinson, 2008, p. 138).
50
51 128 Emotions such as shame, guilt, embarrassment, contempt, pride, envy, and admiration can be placed
52
53 129 in this category. Social emotions also have the practical function of guiding social behaviours (Hareli

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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3 130 and Parkinson, 2008). Thus, they were the most considered kind of emotions in predicting ethical and
4
5 131 sustainable behaviours (Arvola *et al.*, 2008; Onwezen *et al.*, 2014; Russell *et al.*, 2017; Schneider *et*
6
7
8 132 *al.*, 2017). Thomas *et al.* (2009) referred to “pro-social” emotions to explain the activation towards a
9
10 133 social issue, specifically the reduction of inequality. Among the pro-social emotions, in particular,
11
12 134 they indicated “guilt” as the emotion that pushes to do “the right thing” (Thomas *et al.*, 2009, p. 317).
13
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15 135 Further works (Geiger and Keller, 2018; Pfattheicher *et al.*, 2016) focalized on the role of other pro-
16
17 136 social emotions as compassion and empathy in fostering sustainable behaviours.

18
19 137 Yet, other types of emotions can be involved in predicting sustainable consumption behaviours.
20
21
22 138 Namely, these behaviours may be guided by emotions which Hareli and Parkinson (2008) describe
23
24 139 as related to one’s self-evaluation or well-being. Similarly, Roseman’s (2013) analysis of “self-
25
26 140 conscious” emotions felt toward the self and involving one’s identity, suggests that the adoption of
27
28 141 sustainable food consumption behaviours can be oriented by feelings of satisfaction (or frustration)
29
30
31 142 when behaving coherently with one’s sense of identity and values. In line with this consideration,
32
33 143 some works (e.g., Elsantil and Hamza, 2019; Wang and Wu, 2016) examine both other-oriented (or
34
35 144 “public”) and self-oriented (or “private”) self-conscious emotions in predicting sustainable
36
37
38 145 consumerism and show that both kinds of emotions influence the willingness to adopt sustainable
39
40 146 consumer behaviours.

41
42 147 Emotions also have a crucial role in driving action based on the outcomes of the emotion-antecedent
43
44
45 148 appraisals (Roseman, 2013). One important dimension in driving action is the appraised positive or
46
47 149 negative valence of the emotion-eliciting situations, which induces attraction and moving towards in
48
49 150 the first case, repulsion and avoiding in the second case. Several works consider indeed both the
50
51
52 151 positive and the negative pole of emotional dimensions. For instance, Son *et al.* (2022) consider
53
54 152 positive and negative emotions as “information” that contributes to develop positive or negative
55
56 153 attitudes towards a behaviour and thus, to sustain or hinder its effective enactment.

57
58 154 Another important dimension is the appraisal of high versus low control over a given situation and,
59
60 155 consequently, the development of more active (as anger or involvement) versus more passive (as fear

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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3 156 or happiness) emotions. More in general, emotions related to the perception of positive valence and
4
5 157 high control provide energy and motivation to act (Roseman, 2013), and can thus play an important
6
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8 158 role in predicting behavioural intention.

9
10 159 From the reviewed literature it emerges that social emotions – especially guilt and pride - have been
11
12 160 considered in some extensions of the classical TPB model in order to enhance the prediction of ethical
13
14
15 161 and sustainable consumption (Antonetti and Maklan, 2014). However, to our knowledge, self-related
16
17 162 emotions and emotions sustaining actions (pro-active emotions) have not yet been considered in
18
19 163 extended TPB models. Previous works that inserted emotions as extension of the TPB model to
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21
22 164 explain the intention to adopt sustainable behaviours considered emotion as a unique theoretical
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24 165 construct or examined only one single emotion (e.g., “environmental protection emotion”, Lavuri,
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26 166 2022). Thus, in the present work, we propose to distinguish between three kinds of emotions - self-
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29 167 related emotions, social emotions, and pro-active emotions - and to consider these different kinds of
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31 168 emotions in predicting behavioural intention to adopt sustainable and ethical food consumerism.

3. Overview of the work

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33 169
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37 171 The aim of the current work is to assess whether the addition of emotion-based factors to a standard
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40 172 TPB model would improve the prediction of intention to perform sustainable food purchasing
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42 173 choices, and whether the intentions to perform different sustainable purchasing behaviours (namely,
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45 174 purchasing FT products or purchasing food through SPGs) are influenced by three different kinds of
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47 175 emotions: self-related, social and pro-active emotions. The theoretical model that guided our research
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49 176 work is represented in Figure 1.

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54 178 - FIGURE 1. Theoretical model of determinants of intention to perform sustainable food purchasing
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56 179 behaviours

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DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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3 181 The investigation was conducted by two studies using online questionnaires and focusing on
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5 182 purchasing FT food products (Study 1) and purchasing food through SPGs (Study 2).

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8 183 The research design of both studies was developed in accordance with the Italian Legislative Decree
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10 184 101/2018 on protection of personal data and conformed to the provisions of the 1964 Declaration of
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12 185 Helsinki (as revised in Fortaleza, 2013). All ethical guidelines for human research were followed.
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15 186 The questionnaire was provided with a cover letter that openly described the research purpose and
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17 187 explicitly stated the anonymity of data collection and treatment, and the voluntary nature of
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19 188 participation. All participants signed an informed consent form.

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22 189 To assess the understandability of the questionnaire and its compilation time, before the
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24 190 administration both versions (i.e., the one focusing on purchasing FT food products and the other
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26 191 focusing on purchasing food through SPGs) were pre-tested with a group of 10 consumers each.

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28 192 For the analyses we used the software SPSS Statistic v.27 for Windows.
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32 33 194 **3. Study 1**

34 35 195 ***3.1 Aims and hypotheses***

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38 196 In the first study, we aimed to test whether the addition of emotion-based factors increased the
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40 197 predictive power of a TPB-model in relation to the intention to buy FT food products. Drawing on
41
42 198 previous research, the following hypothesis was formulated:

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45 199 Hp1: The prediction of intention to purchase FT products is improved introducing in the TPB model
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47 200 self-related, social, and pro-active emotions.
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49 201 50 51 202 ***3.2 Material and methods***

52 53 203 ***3.2.1 Participants and procedure***

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56 204 The investigation took place in Italy, before the Covid-19 pandemic. The presentation of the study
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58 205 and the link to the online questionnaire were disseminated through the mailing lists of several FT
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60 206 shops, social networks and newsletters, as well as through the personal contacts of the research team.

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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3 207 The questionnaire was filled in by 300 respondents, but 60 were excluded as they missed at least one
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5 208 of the multi-item scales under investigation. The final sample consists of 240 participants. Most of
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8 209 them were female (73.8%) and their average age was 38.95 ($SD = 12.66$). A consistent part of them
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10 210 were unmarried (44.3%) and the great part had no children (59.9%). For more details about
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12 211 participants' characteristics, see Table I, column Study 1 - FT.

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-TABLE I-

3.2.2 Measures

In Study 1, we focused on intention to purchase FT food products. TPB constructs were measured following the guidelines provided by Fishbein and Ajzen (2010). Intention was measured by three items: "When I have a choice, I buy FT products"; "I am willing to pay more for FT products"; "I always recommend my friends to buy FT products", rated on a 7-point Likert response scale [1=Completely false; 7 = Completely true]. The items were averaged into a single score: the higher the score, the higher the intention to purchase FT food products (Cronbach's alphas are provided in Table II). Three single-item scales with 7-point response format were employed to measure attitude, subjective norm, and perceived behavioural control: "In general, my attitude toward buying FT products is: [-3 = unfavourable; +3 = favourable]"; "Most people who are important to me think I should buy FT products: [-3 = unlikely; +3 = likely]"; "For me, buying FT products is: [-3 = difficult; +3 = easy]". The higher the values, the more favourable the attitude, the higher the perceived normative support, and the perceived behavioural control. To simplify comparisons with other variables, the response scale was recoded in 1 to 7 values, where 1 = -3; 7 = +3.

Emotions towards buying FT food were measured with three sets of *ad hoc* items. Participants were asked to report how they feel when purchasing FT products on 7-point semantic-differential scales. In the identification of the couples of emotions, we took in mind, where possible, the three dimensions of pleasure-displeasure (or "negative-positive"; Roseman, 2013; Shuman *et al.*, 2017), arousal-no

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arousal, and dominance-submissiveness indicated by Russell and Mehrabian (1977), in relation to the following three kinds of emotions:

- 1) Self-related emotions: self-satisfaction (satisfied with me - dissatisfied with me), frustration (frustrated - fulfilled), contentment (content - discontent), happiness (happy - sad)
- 2) Social emotions: guilt (guilty - with a clear conscience), contempt (despised - appreciated), blame (blameworthy - esteemed), pride (proud - disappointed)
- 3) Pro-active emotions: hope (hopeful - resigned), commitment (involved - indifferent).

Answers to the items were recoded such that the negative pole of the scale was associated to lower values, the positive one to higher values.

3.2.3 Preliminary analyses

We ran an explorative factor analysis (EFA) on the 10 items measuring emotional feelings when purchasing an FT product. We used the Generalized Least Square Method, more suitable for non normal distribution of data. The KMO and Bartlett's test showed that the data were suitable for an exploratory factor analysis, KMO = .935; Bartlett's $\chi^2 = 1772.58$, $df = 45$, $p < .001$ (Shrestha, 2021). The analysis extracted only one factor with eigenvalue > 1 , explaining 62.23% of total variance. All items loaded onto the single factor with loadings $> .70$. Therefore, we calculated an average score for the whole emotion scale, and average scores for the three subscales theoretically distinguished. In the following analyses, we compared the predictive validity of the emotion scale as a whole vs. the three subscales.

3.3 Results

Table II provides means and standard deviations of the study variables as well as correlations among them.

-TABLE II-

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260 In order to assess whether emotions would improve the predictive validity of a traditional TPB

261 model as regards the intention to purchase FT food products, a stepwise regression model was run.

262 In the first step, intention to purchase FT products was regressed on the three TPB major constructs

263 (ATT, SN, PBC). The model explained a significant proportion of variance ($R^2 = .659$). All three

264 TPB constructs exerted a significant effect on intention (Table III, Step 1). The single measure of

265 emotions (Em Tot) was entered as an explanatory variable in the second step: the additional

266 variance explained was significant ($\Delta R^2 = .009$) and so was the effect of emotions (Table III, Step

267 2). In the third step, the single measure of emotions was excluded from the model, and the three

268 measures of emotions (Em Soc, Em Self, Em Pro) were entered: the additional variance explained

269 in participants' intention ($\Delta R^2 = .015$) was significant. The effect of pro-active emotions was

270 significant, whereas the effect of self-related and social emotions was not (Table III, Step 3).

271

272 -TABLE III-

3.4 Discussion

273

274 The results show that the regression model based on the original TPB explains a significant and

275 substantial amount of the variance in participants' intention to purchase FT food products.

276 Nevertheless, the introduction of emotions as a single factor slightly increased the explained variance.

277 In the third step, the single factor representing emotions was removed, while the three different

278 emotion dimensions were included in the regression model: In this case, the proportion of explained

279 variance was also significantly larger than in step 1 (original TPB model). These results support Hp1.

280 Moreover, of the three different types of emotions, the results indicate that only pro-active emotions

281 have a significant impact on purchase intention for FT products.

4. Study 2

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

4.1 Aims and hypotheses

In Study 2, we tested whether the incremental validity of adding emotion-based factors to a TPB-model was confirmed in relation to a different behaviour in the realm of ethical consumerism, namely buying food through SPGs. We formulated the following hypothesis:

Hp2: The prediction of intention to purchase through SPGs is improved introducing in the TPB model self-related, social, and pro-active emotions.

4.2 Material and methods**4.2.1 Participants and procedure**

The questionnaire was completed in electronic form via Qualtrics, before Covid-19 pandemic. The link was forwarded by e-mail to the network of SPGs in different Italian territories. Moreover, for the dissemination of the questionnaire, it was also possible to take advantage of the contribution of a magazine focused on ethical and environmental issues (“Terra Nuova”), which dedicated an article on its web portal presenting the research and the link for the online survey. Two hundred and nine participants completed the survey while 56 questionnaires were excluded as they missed at least one of the multi-item scales under investigation. Most participants were female (69.9%) and their average age was 45.6 ($SD = 11.18$). Most were married (66.8%) and had children (68.6%): this is coherent with the fact that through the SPGs are usually bought quantity of products suitable for families of three/four people at least. For more details about participants’ characteristics, see Table 1, column Study 2 - SPGs.

4.2.2 Measures

In Study 2, the same measures of Study 1 were used, replacing, in each item, “FT products” with “through the SPGs”.

4.2.3 Preliminary analyses

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Also in Study 2, we first ran an EFA on the 10 items measuring emotional feelings when purchasing through SPGs. Data were factorable, KMO = .857; Bartlett's $\chi^2 = 636.63$, $df = 45$, $p < .001$). Using the Generalized Least Square Method, only one factor with eigenvalue > 1 was extracted, accounting for 48.51% of the total variance. All items loaded onto the single factor with loadings $> .55$. Therefore, we calculated an average score for the whole emotion scale and average scores for the three subscales theoretically distinguished. As for Study 1, in the following analyses, we compared the predictive validity of the emotion scale as a whole vs. the three subscales.

4.3 Results

Table IV provides means and standard deviations of the study variables as well as correlations among them.

-TABLE IV-

Similarly to Study 1, a stepwise regression model was used for testing whether the measures of emotions would improve the predictive validity of a traditional TPB model as regards intention to purchase food products through SPGs. In the first step (intention to purchase through SPGs regressed on the three TPB major constructs -ATT, SN, PBC-), the model explained a significant proportion of variance ($R^2 = .32$); ATT and PBC were significantly associated with intention, whereas the effect of SN was marginal (Table V, Step 1). In the second step (addition of the single measure of emotions), the additional variance explained ($\Delta R^2 = .02$) was significant compared to Step 1 and the single emotion score was significantly associated with intention (Table V, Step 2). In the third step (entering of the three measures of theoretically distinguished emotions and excluding the single measure of emotions), the additional variance explained in participants' intention ($\Delta R^2 = .035$) was significant. The effect of pro-active emotion was significant, whereas the effect of self-related and social emotions was not (Table V, Step 3).

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337
338 -TABLE V-

339
340 **4.4 Discussion**

341 Overall, results of the Study 2 are very similar to those of the Study 1, and provide support to Hp2.
342 Adding emotions to a traditional TPB-based model significantly increases the proportion of explained
343 variance in participants' intention to buy through SPGs. Similar to Study 1, the three different
344 emotional factors perform slightly better than the single emotional factor in terms of variance
345 explained. Finally, pro-active emotions are again the only ones, among the three kinds of emotions
346 considered, to be significantly associated with intention to buy food products through SPGs.

347
348 **5. General discussion and conclusions**

349 Within the theoretical framework of the Theory of Planned Behaviour (TPB, Ajzen, 1991; Fishbein
350 and Ajzen, 2010), this research aimed to analyse the determinants of intention to make sustainable
351 food consumption choices by adding different kinds of emotions to the traditional TPB model.
352 Considering sustainable food consumption as a conscious purchasing choice that takes into account
353 the impact on the environment, animal welfare and producers' working conditions (Hain, 2017;
354 Tallontire *et al.*, 2001), we focused on two sustainable behaviours: purchasing Fairtrade (FT) food
355 products and purchasing food through Solidarity Purchasing Groups (SPGs). In the TPB model, the
356 intention to perform a behaviour is primarily explained by the attitude towards the behaviour,
357 subjective norms, and perceived behavioural control. Several scholars (e.g., Ajzen, 2015; Arvola *et al.*,
358 2008; Spence *et al.*, 2018) added other possible determinants (e.g., habit strength, knowledge,
359 trust) to this model. However, emotions were less frequently considered among antecedents, although
360 some previous work identified consumers' emotions as important predictors of ethical consumerism
361 intentions (Arvola *et al.*, 2008; Berki-Kiss and Menrad, 2022; Dowd and Burke, 2013; Schneider *et al.*,
362 2017) and food consumption (Edwards *et al.*, 2013; Köster and Mojet, 2015). Given the wide

DIFFERENTIATING EMOTIONS IN THE TPB MODEL

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3 363 range of emotional feelings (e.g., Roseman, 2013; Shuman *et al.*, 2017), in the present work we

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5 364 distinguished between three conceptually distinct types of emotions in predicting intention to make

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7 365 sustainable food consumption choices: self-related, social and pro-active emotions.

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9
10 366 In two studies involving 240 and 209 participants, respectively, we analysed the determinants of the

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12 367 intention to purchase FT food products and the intention to purchase food through SPGs entering the

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14 368 three kinds of emotions in addition to attitude, subjective norms and perceived behavioural control in

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16 369 stepwise regression models. Since exploratory factor analyses suggested considering emotions as a

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18 370 single factor, we ran the stepwise regression models either with emotions as a whole or as three

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20 371 separate factors to understand the difference between the two strategies and the empirical usefulness

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22 372 of distinguishing between the three emotion types.

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24 373 The results of the two studies provide support to the research hypotheses. Indeed, the hypothesis that

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26 374 adding emotions to the original TPB model improves the prediction of intention to perform

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28 375 sustainable behaviours was confirmed for both purchases of FT products (Study 1) and purchases

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30 376 through SPGs (Study 2): the three classical antecedents of the TPB model explained a significant

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32 377 proportion of the variance, but the addition of emotions significantly improved the regression models

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34 378 with an additional explained variance ranging from 1.5% to 3.5% when three emotion types were

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36 379 considered separately. This result is even more interesting because it is robust with respect to two

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38 380 different behaviours. Moreover, it is not the same to consider emotions as a whole or as three separate

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40 381 dimensions (self-related, social, and pro-active emotions). In both studies, the incremental validity of

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42 382 the model with the three separate factors was higher compared to the model including the single

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44 383 emotional factor.

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46 384 The distinction between three different types of emotions allows for a more detailed understanding

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48 385 of the relationship between emotions and the behavioural intentions measured in the studies. Overall,

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50 386 pro-active emotions seem to be the class of emotions that plays a more relevant role in predicting the

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52 387 purchase intention for FT products and through SPGs, while self-related and social emotions did not

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54 388 predict the intention to purchase FT food products or to purchase food through SPGs. This is an

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unexpected result. Some previous studies (e.g., Elsantil and Hamza, 2019; Wang and Wu, 2016) suggested that self-oriented and other oriented emotions predict the willingness to adopt sustainable consumer behaviours. However, in these studies pro-active emotions were not jointly considered. Our work is innovative in this respect but it does not allow us to make a timely comparison with previous results; thus, future studies are necessary.

Considering the three classical antecedents of the TPB, the influence of subjective norms on the intention of purchasing through SPGs was marginal, while it was high for the intention to purchase FT products. This is quite surprising since subjective norms represent the “perceived social pressure to perform or not to perform the behaviour” (Ajzen, 1991, p. 188). Purchasing through SPGs necessarily requires the organization of a group to purchase and redistribute products. One might expect, therefore, that group members would have influenced each other at the time of recruitment and would continue to influence each other to carry out this purchasing choice. Thus, the social dimension should be a central component of this behaviour, but neither subjective norms nor social emotions appeared to be relevant in predicting purchase intention via SPGs. One possible explanation for this result could be that ethical consumer behaviour is guided by a mix of selfish and altruistic beliefs and motivations. In the case of purchasing food through SPGs, behaviour could be guided by more individual/egoistic considerations (such as those related to health and the low price of the products purchased) prevailing on social motivations (see also Verneau *et al.*, 2019).

5.1 Limitations

The measurement of the three classical antecedents of the TPB model (attitude, subjective norms, perceived behavioural control) performed by single items can be considered the main limitation of this work. Even if an increasing number of scholars (e.g., Allen *et al.*, 2022; Berki-Kiss and Menrad, 2022; Gogol *et al.*, 2014; Oluka *et al.*, 2014) consider the use of single-item measures as adequate, the most common practice is to use composite measures made of at least three items for each

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3 414 theoretical construct whose validity and internal consistency can be assessed. In future research,
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5 415 instruments made up with more items measuring these three theoretical dimensions should be used.
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8 416 Also, the distribution of several study variables' frequency is relevantly skewed – which is very
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10 417 common in TPB-based studies (see Fishbein and Ajzen, 2010). This characteristic of the dataset
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12 418 prevents an accurate analysis of the TPB factors interactions, suggesting some caution in interpreting
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15 419 the results, especially as regards the lack of influence of subjective norms on intention (La Barbera
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17 420 and Ajzen, 2020a, 2021; Yzer and van den Putte, 2014).

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19 421 It should further be pointed out that the two studies were conducted before the Covid-19 pandemic.
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22 422 This global event could have influenced the beliefs (Dudek and Śpiewak, 2022; Foti and Timpanaro,
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24 423 2021; George and Nair, 2022) which determine attitudes, norms and perceived control (e.g., De
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26 424 Leeuw *et al.*, 2015; La Barbera and Ajzen, 2020b) which, in turn, can influence ethical purchasing
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29 425 intentions. Future research could fruitfully follow this intriguing path.

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31 426 Finally, the convenience samples involved in the present studies represent another important
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33 427 limitation, which suggests caution in generalizing the current studies' findings to other contexts
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35 428 without further research.

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38 429 Despite these limitations, the present work offers several contributions to the line of research on
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40 430 predictors of intention to make ethical food purchase choices. Specifically, the results of the two
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42 431 studies show that the addition of emotions to the three classical antecedents of the TPB, contributes
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45 432 significantly to the explanation of ethical purchasing intentions. To date, studies that consider
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47 433 emotions in extended versions of the TPB model are not very common (e.g., Berki-Kiss and Menrad,
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49 434 2022; Moons and De Pelsmacker, 2012; Perugini and Bagozzi, 2001), and they generally do not
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52 435 provide a comparison between the original TPB-based model, and the “augmented” one they propose,
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54 436 thus failing to assess the incremental validity of the new model and the importance of the added
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56 437 factors (Graham-Rowe *et al.*, 2015; Russell *et al.*, 2017). Especially for ethical and sustainable food
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58 438 consumerism, very few works (e.g., Berki-Kiss and Menrad, 2022; Duran *et al.*, 2011) have
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60 439 considered several kinds of emotions. This is quite surprising given that the ethical and sustainable

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behaviours of purchasing FT products and purchasing through SPGs are aimed at increasing personal and social wellbeing, both locally and for the planet as a whole (Yamoah *et al.*, 2016). Emotions associated to self-perception, to social relationships and to the perception of personal control can be deeply involved in the decision to engage in this type of behaviours.

5.2 Conclusions and implications

The consideration of different kinds of emotions, namely self-related, social and pro-active emotions, in extending the TPB model, represents the innovative contribution of the present work. In addition, results show that only pro-active emotions play a significant role in predicting ethical and sustainable food purchase intentions. Pro-active emotions were operationalized in terms of hope and commitment, emotions that provide an “impetus for action” (Lazarus, 1991) and motivation to move towards a goal-congruent situation (Roseman, 2013). More than the self-related and social dimensions of emotions, the emotional activation seems to play a key role in guiding sustainable purchase intentions. Certainly, future research should deepen the pattern of the relationships between different kinds of emotions by using also qualitative methods such as interviews or focus groups involving consumers. In addition, future research could examine the role of emotions in their various manifestations in predicting intention to perform other ethical behaviours, in line with Berki-Kiss and Menrad (2022).

The practical implications of these findings should also be considered. Promoting sustainable and ethical food purchasing decisions may be important for consumers to feel empowered to contribute to human and planetary well-being through small but significant behaviours. The attention to sustainability is an issue that can no longer be ignored (Vallaeyts, 2018), for the survival of humanity and the safeguard of the planet, starting from the Agenda 2030 defined by the United Nations. Identifying dimensions that could play a role in promoting these behaviours, in addition to the classic predictors of the TPB model, could be helpful in developing interventions to support them. In particular, one can focus on the role that pro-active emotions may play in promoting sustainable

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3 466 purchase behaviours. To activate such emotions and thus encourage the adoption of sustainable
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5 467 behaviours, different types of interventions can be developed for both current adult consumers and
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8 468 young citizens who are future consumers. For actual consumers, information campaigns could be
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10 469 designed to highlight the human and environmental benefits of careful purchasing choices: Kim *et al.*
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12 470 (2019), for example, show that emotional messages to environmentally friendly behaviour can be
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14 471 more effective than purely informative messages because they also induce emotional activation. Other
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17 472 possible tools to trigger emotions that promote sustainable behaviour are games and gamification:
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19 473 Ahmed and Johnson (2021) propose a review of practises to guide emotions in information seeking
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21 474 to promote sustainable behaviours. Even if children are not yet responsible for their family's food
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24 475 purchasing behaviour, they will be, and maintaining intentions toward future sustainable behaviour
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26 476 is critical. To this end, both formal and informal educational interventions can be proposed: Tillmanns
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28 477 (2020), for example, suggests developing educational interventions based on stimulating emotions
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31 478 through influential images or messages to trigger profound changes toward sustainability.

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33 47934
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