



A Steak for Supper if the Cow Did Not Suffer: Understanding the Mechanisms Behind People's Intention to Purchase Animal Welfare-Friendly (AWF) Meat Products

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Abstract

People have become increasingly conscious of the moral implications of their meat product consumption. The view that farm animals deserve moral considerations has generated widespread public attention to those animals' welfare. Meat products from ethically raised animals are distinguished from non-welfare products using animal welfare-friendly (AWF) labels, such as the Better Life Trademark in the Netherlands. AWF meat products have become popular in the Netherlands, as evidenced by a substantial growth in product sales. To address the question concerning the factors influencing people's intention to purchase AWF meat products and the extent to which those factors relate to one another, an online survey was implemented with 233 consumers from the Netherlands. Structural equation modeling results confirm the complexity of the mechanism behind people's willingness to buy AWF meat products. Two factors strongly predict purchase intention—attitude and moral obligation. Furthermore, the effects of predictors such as knowledge of and trust in AWF labels on purchase intention are not direct but go through attitude and moral obligation.

Keywords Animal welfare-friendly (AWF) meat products · Moral obligation · Attitude towards ethical consumption · Knowledge of AWF labels · Trust in AWF labels

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Introduction

That animals feel and experience pain is a point that has been documented in scientific literature (Bateson 1991; Underwood 2002; Weary et al. 2006). The view that non-human animals are sentient beings ‘capable of experiencing positive and negative sensation’ corresponds to the notion of animals as worthy of moral standing (Garner 2003, p. 234). In his seminal book on animal rights, Singer (1975) argues that animals deserve moral consideration if they can experience suffering. Extension of moral status to animals—that they have intrinsic and not just instrumental values—has heightened public attention to animal welfare (Pirscher 2016). With animals gaining moral concerns, people increasingly regard animal product consumption as morally problematic since it counters animal welfare considerations (Loughan et al. 2014, 2010).

Most meat eaters are apparently troubled or offended by animal suffering (Bastian and Loughan 2017). Such a psychological conflict, referred to as the meat paradox (Bastian and Loughan 2017; Loughan et al. 2014, 2010), can shape how people respond to animal-based products. People’s decision to refrain from meat consumption or to reduce their meat intake has frequently been attributed to their moral concerns regarding animal treatment and attitude towards animal welfare (De Backer and Hudders 2010; Fox and Ward 2008; Loughan et al. 2010) and their negative attitude towards meat (Loughan et al. 2010).

People’s relationship with meat products is slowly shifting, with a segment of the population transitioning to a plant-based diet (Graca et al. 2019). One study into meat consumption patterns in the Netherlands reported that while more than a quarter (26%) of that research’s 800 respondents are meat lovers and a fraction (4%) identifies as ‘meat avoiders’, and approximately 70% of the study’s sample have consciously reduced their meat consumption (e.g. having a meatless day every week) (De Bakker and Dagevos 2012). A study with a nationally representative sample of 1,112 American consumers also revealed that two-thirds of those surveyed have reduced their intake of at least one type of meat (Neff et al. 2018). Moreover, in Germany and France, 50% of meat eaters who were asked about potential changes in their eating lifestyle indicated their willingness to reduce meat consumption (Bryant et al. 2020).

De Jonge et al. (2015) found that almost a quarter (23.1%) of their research respondents have a negative attitude towards and feelings about consuming conventionally-produced meat, which, eventually translate to their preference for meat products at high animal welfare or to minimize meat consumption. In the Netherlands, so-called meat products at high animal welfare are differentiated from conventional ones through organic labels and through a Better Life Trademark, which is certified by the Dutch Society for the Protection of Animals (DSPA). The trademark aims at ‘increasing market transparency by providing value propositions that strike the balance between price and animal welfare levels’ (De Jonge et al. 2015, p. 90).

The relevance of an AWF product label is reflected in consumers’ preference for meat products that are stamped to come from humanely raised farm animals.

A Dutch market research revealed that meat products and fresh meat with animal welfare certificates experienced substantial growth in sales of 170% and 35%, respectively (Koninklijke Nederlandse Slagers 2018). Furthermore, in 2018, Dutch consumers are reported to have spent 1.5 billion Euros on meat products with the Better Life Trademark (Van Dongen 2018).

The increasing popularity of AWF meat products in the Netherlands prompts the question concerning the determinants of people's willingness to purchase those products. While the impact of labels on consumers' intention to buy ethical products has been reported in previous studies (e.g. Hansmann et al. 2006; Song et al. 2019), the impact of consumers' knowledge of the meaning of and their trust in those labels on AWF meat products purchase intention remains understudied.

Several studies (e.g. Ozcaglar-Toulouse et al. 2006; Shaw and Clarke 1999) on ethical consumption have tested an expanded version of Ajzen's (1991) Theory of Planned Behavior. The aforementioned theory is normally expanded with the inclusion of moral obligation as a predictor, since the behavior of interest 'is centered around a concern for others' (Shaw and Shiu 2002, p. 110). It is theorized that the concept of moral obligation will have an important impact on the individual performance of a behavior with an ethical or moral component (Conner and Armitage 1998) and when such a behavior has implications for other people's interests (Rivis et al. 2009).

More importantly, various studies (e.g. Oh and Yoon 2014; Shaw and Shiu 2002) have also shown that the effects of those factors on behavior are hardly straightforward, as relationships among those factors could also exist, especially when new variables are added to the model. For instance, moral obligation is found to predict attitude (Arvola, et al. 2008; Oh and Yoon 2014; Shaw and Shiu 2002). Additionally, in a survey into improving household energy efficiency (Fornara et al. 2016), another typical example of an ethical consumption, a specific form of social norm (injunctive norm or the individual perception of what is approved; Cialdini and Goldstein 2004) has a statistically significant effect on people's attitude towards the behavior. Expanding TPB with variables that are pertinent to the behavioral intention under investigation has prompted researchers (e.g. Bagher et al. 2019; Fornara et al. 2016) to test potential relationships among the original TPB factors and the newly introduced variables, especially when such causal relationships are theoretically grounded. Hence, our study aims at addressing these two research questions:

- a. *What are the factors that influence consumers' intention to purchase AWF products?*
- b. *To what extent do the factors influencing consumers' intention to purchase AWF products relate to one another?*

Theoretical Framework

Purchasing AWF Food Products from the Perspective of the Expanded Theory of Planned Behavior

Ajzen's (1991) Theory of Planned Behavior postulates that actual behavior is a function of behavioral intention, which, in turn, is predicated on three factors, namely attitude towards the behavior, subjective norm, and perceived behavioral control. When used to understand the mechanisms behind the performance of actions with strong moral components (e.g. recycling, donating money, ethical consumption), however, the theory is normally extended with the inclusion of moral obligation as an antecedent of behavioral intention (Fishbein and Ajzen 2010). Such an inclusion can substantially improve TPB's explanatory power (Beldad and Hegner 2018; De Ferran and Grunert 2007; Dowd and Burke 2013; Shaw et al. 2000; Shaw and Shiu 2002).

That consumers' attitude towards an ethical action increases their intention to perform the act has been empirically confirmed in studies into waste recycling (White and Hyde 2012), charitable giving (Smith and McSweeney 2007), and Fair Trade (Ozcaglar-Toulouse et al. 2006; Shaw et al. 2006) and organic products purchase intention (Michaelidou and Hassan 2008). The impact of attitude, defined as 'the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question' (p. 188), on behavioral intention could be attributed to people's preference for behaviors with desirable consequences, whereas behaviors having undesirable consequences are associated with unfavorable attitudes (Ajzen 1991). Hence, the first research hypothesis:

Hypothesis 1 *Consumers' attitude towards purchasing AWF food products positively influences their intention to purchase the food type mentioned.*

The impact of subjective norm, or an individual's perception of 'social pressure to perform or not to perform a behavior' (p. 188), on behavioral intention is also emphasized in TPB (Ajzen 1991). The popularity of purchasing AWF meat products signifies that consumers would base their AWF meat product purchase intention on other people's actions. Specifically, according to Starr (2009), consumers prefer to know how prevalent ethical consumption is among individuals within their social networks, although when such an information is missing, they would resort to information about the prevalence of such behavior among people, in general.

People are sensitive to their fellows' actions (Biel and Thøgersen 2007) and they often based their decision to behave in certain ways on social norms, which refer to both behaviors that are commonly performed and to beliefs that encouraged conformity to those behaviors (Farrow et al. 2017). Although social norms are differentiated into two, namely injunctive social norms (referring to what most people typically approve or disapprove) and descriptive social norms (referring to what most people normally do; Cialdini and Goldstein 2004), the two are also viewed to be closely related constructs (Farrow et al. 2017), as injunctive norms are sometimes

inferred from information about the normality of a behavior as performed by others (Thøgersen 2006).

Thøgersen (2006) regards subjective social norms as one of the components (alongside descriptive and injunctive social norms) of a broad concept known as 'social norm'. This prompts our decision to replace TPB's subjective norm with the overarching construct 'social norm', operationalized in terms of consumers' awareness of what individuals within their immediate environment do. Thus, the second hypothesis:

Hypothesis 2 *The social norm of consuming AWF food products positively influences consumers' intention to purchase the food type mentioned.*

In the original TPB, perceived behavioral control, referring to the extent to which people think a behavior is easy or difficult to perform, also predicts behavioral intention (Ajzen 1991). In the context of ethical consumption, however, such control perception depends on consumers' financial capability, as price considerations are reported to instigate the purchase of ethical products such as those with fair trade labels (Bray et al. 2011; Shaw and Clarke 1999; Shaw et al. 2006).

Given the premium price for free-range and organic meat products (Heerwagen et al. 2015), as modern production systems that promote animal welfare cost more than traditional systems (Van Riemsdijk et al. 2017), the impact of price on purchase decisions is not surprising. It is known that consumers are inclined to purchase ethically produced commodities if doing so will not be financially burdensome (Carrigan and Attalla 2001).

Aside from price, however, the availability of AWF meat products is also a crucial purchase decision consideration (Vanhonacker et al. 2010). The importance of ethical products' availability as a factor influencing purchase decision is attributed to consumers' need for convenience, as hopping from one store to another to buy ethically produced commodities would prove impractical and bothersome (Hjelmar 2011). Therefore, the next set of hypotheses is advanced:

Hypothesis 3 *Perceived behavioral control, in terms of consumers' financial capacity to pay a premium price, positively influences consumers' intention to purchase AWF food products.*

Hypothesis 4 *Perceived behavioral control, in terms of the perceived availability of AWF food products, positively influences consumers' intention to purchase the food type mentioned.*

Finally, as purchasing AWF meat products is an act with a strong moral component, the role of consumers' feelings of moral obligation in their purchase decision merits attention, hence the inclusion of that factor in the original TPB. The inclusion of moral obligation is justified when examining behaviors characterized by concern for others (Shaw and Shiu 2002). Moral obligation, defined as a 'personal feeling of moral obligation or responsibility to perform, or refuse to perform, a certain

behavior' (Ajzen 1991, p. 199), has been reported to predict consumers' intention to purchase ethical products (e.g. fair trade goods; Andorfer and Liebe 2015; Beldad and Hegner 2018; O'Connor et al. 2017; Sunderer and Rössel 2012). Thus, the next hypothesis:

Hypothesis 5 *Feelings of moral obligation to purchase AWF food products positively influence consumers' intention to purchase the food type mentioned.*

Knowledge of and Trust in an Animal Welfare-friendly Label

Information asymmetry characterizes the market for AWF meat products. Consumers are often unable to verify whether livestock producers seriously took farm animals' welfare into account during the production of meat products marketed as humanely produced (Kehlbacher et al. 2012). Hence, labels and certificates on credence products are introduced to reflect those products' qualities (Verbeke 2009) and to address the problems inherent in the market for credence goods (Janssen et al. 2016).

Labels such as the *Beter Leven Keurmerk* (Better Life Trademark) in the Netherlands and *Mehr Tierwohl* (Improved Animal Welfare) in Germany could help consumers differentiate AWF meat products from their non-AWF counterparts (Vanhonacker and Verbeke 2014). Consumers are reported to be willing to pay more for meat products that are AWF certified or labeled (Napolitano et al. 2010; Olesen et al. 2010).

A welfare label or logo signifies that a set of minimum requirements concerning animal welfare were satisfied by a farm, just as it reflects the welfare level involved in the production of animal-based food commodities (Kehlbacher et al. 2012). Such a logo would prove useful for consumers who are unaware of current animal husbandry practices and animal-based commodity production procedures. However, the proliferation of various and often competing labels for AWF meat products could unnecessarily confuse consumers (Vanhonacker et al. 2010). More importantly, merely recognizing a label is not the same as understanding what the label means (Thøgersen 2000).

Adequate knowledge of what those labels stand for is pivotal for consumers' decision to purchase AWF meat products. Knowledge of AWF labels signifies that consumers can recognize labels and understand their meanings (e.g. production standards that farmers must comply with) (Daugberg et al. 2014). This knowledge has been found to facilitate consumers' ethical product purchase behavior (Hoek et al. 2013; Toma et al. 2011) and purchase decision (Daugberg et al. 2014; McEachern and Warnaby 2008).

Furthermore, consumers will also base their purchase intention on labels that can be trusted (Daugberg et al. 2014). Consumers' inability to verify the veracity of marketing claims for ethically produced food items makes trust a difficult issue (Janssen and Hamm 2012). Previous studies have confirmed the role trust in labels plays in consumers' willingness to purchase ethical products such as those marketed

as ecological (Taufique et al. 2017) and organic (Perrini et al. 2010; Vecchio et al. 2012). From all these points, the second set of research hypotheses is advanced.

Hypothesis 6 *Consumers' knowledge of an AWF label positively influences their intention to purchase AWF food products.*

Hypothesis 7 *Consumers' trust in an AWF label positively influences their intention to purchase AWF food products.*

Consumers' difficulty in knowing what labels stand for can trigger distrust in labels (Thøgersen et al. 2010). Results of focus group discussions by Sirieix et al. (2013) revealed that consumers' unfamiliarity with sustainable and organic labels leads to skepticism and rejection of those labels. Since trust only thrives in a familiar situation (Luhmann 1979), consumers' familiarity with and knowledge of AWF labels should enhance trust in those labels. This point has been empirically confirmed in a study into eco-labels, as label knowledge positively influences label trust (Taufique et al. 2017). Hence, the next research hypothesis:

Hypothesis 8 *Consumers' knowledge of an AWF label positively influences their trust in that label.*

Animal welfare, as a credence attribute that could not be easily assessed before and after product consumption, requires extrinsic cues that communicate certain standards that are observed in raising farm animals for food production (Nocella et al. 2010). Labels on AWF meat products, hence, highlight the extent to which animals as food sources are ethically and humanely raised. Consumers who are aware and have knowledge of labels are also claimed to be interested in the issue (societal or environmental) highlighted by those labels (Valor et al. 2014). Knowledge of what a label stands for can increase awareness of a problem, which, according to Bamberg and Möser (2007), contributes to the development of moral norms. From the standpoint of Jones' (1991) Ethical Decision-Making Model, consumers' recognition of a moral issue results in their decision to make a moral judgement, defined as 'a decision about what is morally correct' (p. 386). It is, therefore, assumed that consumers' awareness of the need to safeguard farm animal welfare would contribute to their feelings of moral obligation to perform actions that reflect their beliefs in protecting such type of welfare.

Hypothesis 9 *Consumers' knowledge of an AWF label positively influences their feelings of moral obligation to purchase AWF food products.*

Using labels is not only a means to effectively communicate about the ethical aspects of certain products (Annunziata et al. 2011) but is also instrumental to increasing consumers' awareness of the issues associated with the production of ethically questionable commodities (e.g. trade injustice as the focal concern for Fair Trade labels) (Nicholls and Lee 2006). The role of problem awareness is crucial

since it can fuel consumer concerns for those affected by the problem associated with commodity production, and this awareness contributes to a supportive attitude towards actions that might eradicate the problem (Dickson 2000). Consumers' problem awareness can be derived from their knowledge of the label's meaning, and knowledge can shape attitudes that are stable and resistant to change (Bagher et al. 2019). Therefore, the next hypothesis is advanced:

Hypothesis 10 *Consumers knowledge of an AWF label positively influences their attitude towards purchasing AWF food products.*

As previous studies have shown, consumers' positive attitude towards ethical consumption increases their inclination to perform the behavior. Nonetheless, given the difficulty for consumers to verify the ethical attributes of ethical products, trust in labels on those products is critical not only for their purchase decision (Perrini et al. 2010; Vecchio et al. 2012) but also for their attitude towards the ethical product (Zezelj et al. 2012). Nuttavuthisit and Thøgersen (2017) argue that distrust in ethical claims can potentially lower 'consumers' expectations of credence outcomes promised by these claims' (p. 327) and can trigger less favorable attitudes.

The link between trust in labels and attitude towards buying product labelled as ethical is unsurprising since it is unthinkable for a consumer to be positive towards purchasing ethically labelled commodities when the label used is deemed untrustworthy. Hence, the hypothesis below is proposed.

Hypothesis 11 *Consumers' trust in an AWF label positively influences their attitude towards purchasing AWF food products.*

Social Norms as Bases for Feelings of Moral Obligation and Attitude

Given the pivotal role of moral obligation in increasing customers' FT product purchase intention, it is proposed that the role social norm plays in fomenting feelings of moral obligation must be explored (Beldad and Hegner 2018). Bamberg and Möser (2007) underscored the link between social norm and moral obligation by postulating that in a given situation people may derive information about an action's morality based on how the act is viewed by their relevant social contacts. In a survey into organic food product purchase, Guido et al. (2010) found that subjective norms impact consumers' feelings of moral obligation to purchase organic products. The authors argue that these feelings of moral obligation to consume ethically germinate either from the perceived need to conform to expectations of significant others or from the urge to comply with accepted cultural norms.

The effect of social norms on moral obligation can also be explained from the standpoint of Bandura's (1991) Social Cognitive Theory of Moral Thought and Action, which stipulates how people's moral standards emerge from their social environment. Additionally, Cialdini (2007), with his social proof concept, claims that people's estimation of the correctness of an action is often predicated on how

they think other people appraise that act's correctness. These points, hence, support the next set of hypotheses.

Hypothesis 12 *The social norm of consuming AWF food products positively influences customers' feelings of moral obligation to purchase AWF food products.*

Hypothesis 13 *The social norm of consuming AWF food products positively influences customers' attitude towards purchasing AWF food products.*

The Impact of Moral Obligation on Consumers' Attitude

When using TPB to understand the intention to perform an ethical action, it has been suggested that attitude towards an act could be replaced with moral obligation (Chan and Bishop 2013). However, other researchers (e.g. Manstead 2000) noted that the distinct effects of both factors on behavioral intention could still be investigated if there are no overlaps in measuring them. More importantly, there is enough empirical support (e.g. Arvola et al. 2008; Dean et al. 2008; Oh and Yoon 2014) for the assertion that one's attitude towards an ethical action emerges from his feeling of moral obligation to pursue that action.

Oh and Yoon's (2014) survey found that moral obligation predicts people's attitude toward purchasing ethical products. They claimed that people who feel a moral obligation to purchase ethically and who identify with ethical consumption are more likely to put societal interests over their own and tend to have a favorable attitude toward ethical consumption. From these points, the last research hypothesis is proposed.

Hypothesis 14 *Consumers' feeling of moral obligation to purchase AWF food products positively influences their attitude towards the purchase behavior.*

Figure 1 shows the proposed relationships among the various research constructs based on the points discussed above.

Method

Design and Procedure

The 14 research hypotheses were tested with data collected through an online survey using a snowball sampling approach. Students who followed a research project course for a premaster program in communication science in a Dutch university implemented the online survey. After two weeks of data collection, 333 online questionnaires were retrieved. However, 110 respondents did not complete the survey (with 14 respondents indicating that they are either vegans or vegetarians). Hence, only completed online questionnaires from 223 AWF meat product consumers were used for statistical analyses. This sample size

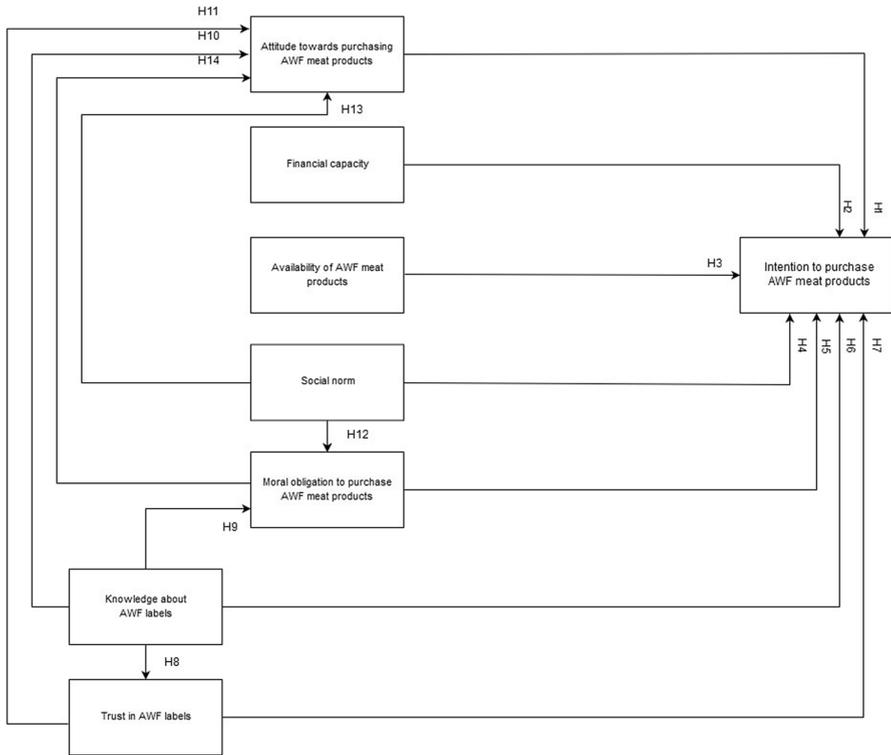


Fig. 1 Complete research model

meets the recommendation of having a sample size ranging from 40 to 240 for structural equation modelling if the rule-of-thumb of 10 cases per variable is used (Wolf et al. 2013). In this study, 8 variables were measured.

Survey Respondents

Of the 223 respondents whose data were used for analyses, 144 (65%) were females. Respondents' age ranged from 18 to 64, with a mean age of 30.48 (SD = 13.11), with over half of the sample (N = 121, 54%) belonging to the age group 18 to 24. More than half of the respondents (N = 124, 56%) have obtained higher education degrees either from a scientific university or a university of applied science. Respondents were also asked to indicate their income, and 144 (65%) indicated to have a net monthly income of less than 2,000 euros, while 58 (26%) reported to have a net monthly income between 2,000 and 4,000 euros. Table 1 shows the complete demographic characteristics of the survey participants.

Table 1 Complete demographic information of the survey respondents

Demographic characteristics		Frequency	Percentage
Gender	Male	79	35
	Female	144	65
Level of education	High	124	56
	Low	97	43
	Others	2	1
Income	Low (< 2,000€)	144	65
	Middle (between 2,000 and 4,000€)	58	26
	High (> 4,000€)	5	2
	Preferred not to answer	16	7
Total		223	100

Measurements

Most items used to measure the research constructs were derived from previously validated scales. ‘Purchase intention’ was measured with three modified items by De Leeuw et al. (2014) and Onwezen et al. (2014). The three ‘attitude’ items were modified version of the statements formulated by the previously mentioned researchers.

Scales by Nolan et al. (2008) and Onwezen et al. (2014) inspired the items used for the ‘social norm’ construct. Items measuring the two dimensions of perceived behavioral control—financial capacity to pay for AWF meat products and AWF meat product availability—were based on the scales of Ajzen (1991) and De Leeuw et al. (2014). ‘Moral obligations’ items were modified versions of statements by De Leeuw et al. (2014) and Sunderer and Rössel (2012).

Finally, the items used to measure trust in and knowledge of AWF labels were inspired by the scales designed by several researchers (e.g. Andorfer and Liebe 2015; Nuttavuthisit and Thøgersen 2017; Zagata and Lostak 2012). All statements were translated from English to Dutch. Table 1 shows the items used to measure the research constructs.

Results

Measurement Validity and Reliability

Prior to testing the structural model, instrument validity and reliability requirements must be satisfied. Confirmatory factor analysis using AMOS 22.0 was performed to determine the scales’ discriminant and convergent validity. Hair et al. (2006) recommend a factor loading (FL) value higher than 0.50 for an item to be significant. Table 2 presents the factor loading values for the individual items.

Additionally, at the construct level, Hair et al. (2006) propose the calculation of composite reliability (CR) and average variance extracted (AVE) instead of

Table 2 Average variance extraction and composite reliability for the research constructs

Constructs	Items	FL	AVE	CR
<i>Intention to purchase AWF meat products (INT)</i>	I am planning to buy animal welfare-friendly meat products in the future.	0.77	0.69	0.87
	The next time that I will do my shopping, I will buy animal welfare-friendly meat products.	0.84		
	I am planning to consciously buy animal welfare-friendly meat products instead of products that are not.	0.87		
<i>Attitude towards purchasing AWF meat products (ATT)</i>	I think that it is good to buy animal welfare-friendly meat food products.	0.87	0.58	0.80
	I believe that consuming animal welfare-friendly meat products has a positive impact on the environment.	0.68		
	I believe that consuming animal welfare-friendly meat products has a positive contribution to animal welfare.	0.72		
<i>Financial capacity (FIN)</i>	I can afford to buy animal welfare-friendly meat products.	0.53	0.37	0.62
	I am financially able to buy animal welfare-friendly meat products.	0.44		
	I am willing to pay more for animal welfare-friendly meat products.	0.80		
<i>Availability of AWF meat products (AVA)</i>	I know where I can buy animal welfare-friendly meat products.	0.86	0.62	0.83
	Animal welfare-friendly meat products are sold in shops in my neighborhood.	0.78		
	I don't have to spend so much time looking for shops that sell animal welfare-friendly meat products.	0.72		
<i>Social Norm (SOC)</i>	People in my immediate environment buy animal welfare-friendly meat products.	0.76	0.51	0.76
	People in my town or city buy animal welfare-friendly meat products.	0.76		
	I notice that more people are buying animal welfare-friendly meat products.	0.62		
<i>Moral obligation to purchase AWF meat products (MOB)</i>	I feel it as my moral duty to regularly buy animal welfare-friendly meat products.	0.90	0.67	0.89
	I feel it as a moral duty to buy animal welfare-friendly meat products whenever they are available.	0.88		
	I feel it is wrong to buy meat products that are not animal welfare-friendly.	0.77		
<i>Knowledge about AWF labels (KNO)</i>	Whenever I buy meat that are not animal welfare-friendly, I have a bad conscience.	0.71		
	I know the meaning of labels that are stamped on animal welfare-friendly products.	0.84	0.67	0.80
	I am adequately informed to know what the labels on animal welfare-friendly meat products stand for.	0.79		

Table 2 (continued)

Constructs	Items	FL	AVE	CR
<i>Trust in AWF labels (TRU)</i>	I trust the labels that are stamped on animal welfare-friendly meat products.	0.79	0.79	0.92
	I believe that labels on animal welfare-friendly meat products are good indicators that those products came from farm animals that were humanely raised.	0.93		
	I believe that labels on animal welfare-friendly meat products are trustworthy.	0.93		

All items were measured on a five-point Likert scale, with 5 meaning 'strongly agree' and 1 'strongly disagree'

Cronbach's alpha when using structural equation modelling (SEM). CR values are adequate for all factors (>0.60 ; Bagozzi and Yi 1988), while AVE values are higher than 0.50 (Fornell and Larcker 1981) except for the construct 'financial capacity'. Hence, the constructs have convergent validity.

Inter-correlations among the seven constructs were also determined using correlation analysis before the structural model was tested. Values in Table 2 indicate that strong correlations (correlation values between 0.70 and 0.90; Burns and Burns 2008) among the constructs do not exist. To test for discriminant validity, all square roots of AVE must be higher than the interconstruct correlation estimates (Fornell and Larcker 1981). This criterion is fulfilled. Table 3 shows the correlations among the constructs, as well the values for the square roots of AVE.

Test of the Measurement Model

Model testing subscribed to the two-step approach Anderson and Gerbing (1988) recommend. The approach entails assessing the measurement model first using confirmatory factor analysis (CFA) prior to hypotheses testing with SEM. Based on the recommendations by Hu and Bentler (1999) and Schreiber et al. (2006), four indices were used to assess the fit of the measurement model and the full structural model: comparative fit index (CFI) and Tucker-Lewis index (TLI) to determine the model's incremental fit (values for both CFI and TLI must be higher than 0.90) (Hair et al. 2006), root-mean-square error of approximation (RMSEA) as a measure of absolute fit (RMSEA value must be lower than 0.08) (Hair et al. 2006), and normed chi-square (X^2/df), whose value must not exceed 5 for the model to be interpreted as acceptable (Wheaton et al. 1977). Test of the fit of the measurement model indicates that it has an acceptable fit: $X^2 = 364.02$, $df = 222$, $X^2/df = 1.64$, $RMSEA = 0.05$, $CFI = 0.95$, $TLI = 0.94$.

Table 3 Square root AVE values, mean scores, standard deviation values, and inter-correlations of the research constructs

	M (SD)	$\sqrt{\text{AVE}}$	INT	ATT	FIN	AVA	SOC	MOB	KNO	TRU
INT	3.20 (0.79)	0.83	1							
ATT	3.85 (0.74)	0.76	0.53**	1						
FIN	3.44 (0.69)	0.61	0.40**	0.34**	1					
AVA	3.69 (0.69)	0.79	0.30**	0.33**	0.20**	1				
SOC	3.20 (0.69)	0.71	0.32**	0.31**	0.07	0.26**	1			
MOB	2.58 (0.85)	0.82	0.61**	0.37**	0.39**	0.21**	0.29**	1		
KNO	3.11 (0.94)	0.82	0.26**	0.18**	0.18**	0.29**	0.21**	0.32**	1	
TRU	3.34 (0.88)	0.89	0.18**	0.31**	0.20**	0.28**	0.15*	0.19**	0.27**	1

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

Test of the Structural Model

Fit of the original model (Fig. 1), which assumes that 7 factors influence consumers' intention to purchase AWF meat products and that relationships exist among those factors, was subsequently tested after determining the fit of the measurement model. Test of this model indicates that it has an acceptable fit: $X^2=410.74$, $df=214$, $X^2/df=1.92$, $RMSEA=0.06$, $CFI=0.93$, $TLI=0.91$.

Regression estimates show that of the seven factors hypothesized to influence consumers' intention to purchase AWF meat products, only the effects of moral obligation ($\beta=0.51$, $p<0.001$) and attitude ($\beta=0.39$, $p<0.001$) are statistically significant. Hence, only hypotheses are 5 and 1 are supported, respectively. Additionally, as shown in Table 4, several hypothesized relationships among the predictors of AWF meat product purchase intention are also supported.

Test of the Modified Model

As the effects of the two dimensions of perceived behavioral control (financial capability and availability) on the dependent variable are not significant, a modified model was created without the two predictors. Model modification is one of the five steps (aside from model specification, model identification, parameter estimation, and model evaluation) of structural equation modelling (Kline 2010). Models are modified to improve their fit and improve their congruence with the phenomenon being investigated (Mueller and Hancock 2008). A condition for model modification is that the act is theoretically grounded (Guo et al. 2006). In the case of the modified

Table 4 Summary of results of hypothesis testing

Hypothesis	β (p value.)
Hypothesis 1: Attitude \rightarrow Intention	0.39 ^{***}
Hypothesis 2: Social Norm \rightarrow Intention	0.01 ^{ns}
Hypothesis 3: Financial Capacity \rightarrow Intention	-0.01 ^{ns}
Hypothesis 4: Availability \rightarrow Intention	0.09 ^{ns}
Hypothesis 5: Moral Obligation \rightarrow Intention	0.51 ^{***}
Hypothesis 6: Knowledge about AWF Labels \rightarrow Intention	0.03 ^{ns}
Hypothesis 7: Trust in AWF Labels \rightarrow Intention	-0.06 ^{ns}
Hypothesis 8: Knowledge about AWF Labels \rightarrow Trust in AWF Labels	0.31 ^{***}
Hypothesis 9: Knowledge about AWF Labels \rightarrow Moral Obligation	0.31 ^{***}
Hypothesis 10: Knowledge about AWF Labels \rightarrow Attitude	0.05 ^{ns}
Hypothesis 11: Trust in AWF Labels \rightarrow Attitude	24 ^{**}
Hypothesis 12: Social Norm \rightarrow Moral Obligation	0.30 ^{***}
Hypothesis 13: Social Norm \rightarrow Attitude	0.19 [*]
Hypothesis 14: Moral Obligation \rightarrow Attitude	0.31 ^{***}

ns: not significant

* $p<0.05$; ** $p<0.01$; *** $p<0.001$

model for this research, the only change is the removal of paths that are not statistically significant. Hence, the modified model, with the paths among the variables that are retained, is still supported by previous literature.

The removal of ‘financial capability’ is also justified due to its insufficient AVE value. Although social norm, knowledge about AWF labels, and trust in those labels are not statistically significant predictors of AWF meat product purchase intention, they were retained in the modified model given their statistically significant links to moral obligation and attitude.

Test of this modified model reveal that it has an excellent fit: $X^2=196.31$, $df=126$, $X^2/df=1.56$, $RMSEA=0.05$, $CFI=0.97$, $TLI=0.96$. Figure 2 shows that both moral obligation and attitude towards purchasing AWF meat products are still significant predictors of AWF meat product purchase intention.

The modified model also shows that moral obligation is a function of two factors, namely knowledge about AWF labels and social norm, whereas attitude towards purchasing AWF meat products is predicated on three factors: moral obligation, trust in AWF labels, and social norm. Moreover, consumers’ trust in AWF labels is derived from their knowledge of those labels’ meanings.

Discussion of Results, Implications, and Future Research Directions

Discussion of Results

One point that resonates from the results of this survey is that people’s AWF meat product purchase intention is a result of a seemingly complex process. The modified model tested for this study challenges the notion that AWF meat product purchase intention is influenced by several factors in a straightforward manner.

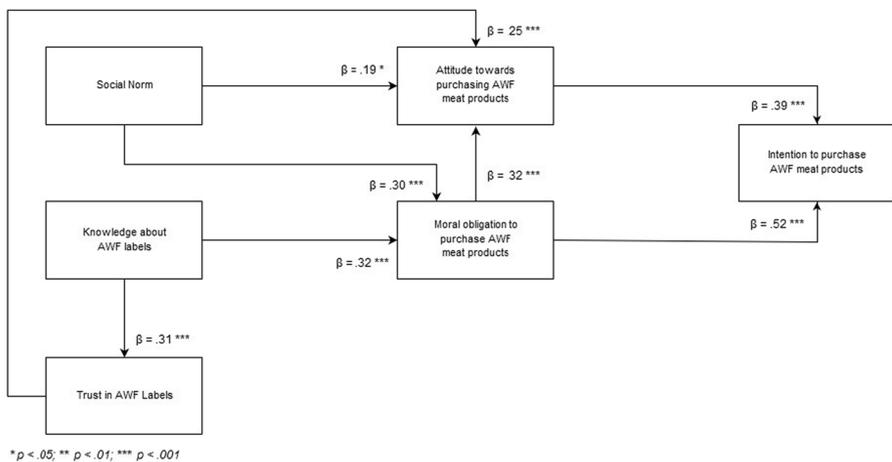


Fig. 2 Revised research model

It is unsurprising that the effect of moral obligation on AWF meat product purchase intention is stronger than that of attitude towards the purchase intention since the purchase is characteristically ethical, especially as the ideal of consuming food products from humanely raised animals is tied to the view of animals as deserving moral considerations (Garner 2003).

The hypothesized effects of the two dimensions of perceived behavioral control—financial capability and availability—are not statistically significant. The price difference between meat products with Beter Leven labels and those without depends on the level of welfare associated with labeled products. In 2019, a one-star welfare chicken meat was 28% or 2.36 euros per kilo more expensive than its non-welfare counterpart (Autoriteit Consument and Markt 2020). The Autoriteit Consument & Markt also reported that, in the case of chicken meat consumption, purchase primarily focused on products with one-star welfare, which is more affordable than a three-star welfare product. It is possible that survey participants had this one-star welfare product in mind and not a three-star welfare product when completing the survey.

As income determines the purchase of ethical products (Andorfer 2013; Starr 2009), it would be tempting to attribute the finding to the financial status of the respondents, as a majority indicated to have a net monthly income of less than 2,000 euros, considering the average net monthly income in the Netherlands in 2017 at approximately 1,903 euros (2,855 euros of average gross monthly income) (Gemiddeld Inkomen 2020). However, it is also claimed that it is not only consumers' income that shapes purchase intention but also their evaluation of the prices for ethical goods (e.g. AWF meat products) as substantially high (Andorfer and Liebe 2015) when compared to 'non-ethical' counterparts. Price itself might not be an issue if consumers can justify the premium price of an ethical product (Bray et al. 2011). One can only speculate whether individuals from a high-income cluster would still be sensitive to the premium prices of AWF meat products when contemplating on a purchase.

That the availability of AWF meat products has no bearing on consumers' intention to purchase those products is primarily due to the ease of finding them, as almost all major grocery stores in the Netherlands have AWF meat products on their shelves. Consumers then do not have to exert so much time and effort if they want to purchase AWF meat products. This echoes what is already known in the study of Bray et al. (2011)—that availability concerns are negligible for decisions to purchase ethically produced commodities that have increasingly populated grocery shelves.

The need to conform to trends is a possible explanation for the impact of social norms on ethical purchase behavior. The effect of social norms on people's decision to buy ethically produced food items has been documented in several studies (e.g. Biel and Thøgersen 2007; Starr 2009). However, results of our study show that people's purchase intention is not grounded on social norms, although these norms contribute to consumers' feelings of moral obligation to buy AWF meat products.

The absence of social norms' direct effect on behavioral intention can be explained from a cultural standpoint. The highly individualistic nature of our survey respondents (Hofstede 2001) might have rendered social norms less instrumental for people's predisposition to act in a specific way. Various studies (e.g. Bond

and Smith 1996; Murali et al. 2005) show that people from highly individualistic cultures are less sensitive to various forms of social influence and are less likely to socially conform.

While consumers do not resort to social cues when deciding whether to purchase AWF meat products, those cues tend to function as relevant heuristics for consumers' assessment of the morality of buying AWF meat products (Bamberg and Möser 2007; Cialdini 2007). This suggests, then, that in the context of AWF meat product purchase decision, social norms still matter since the factor partly determines feelings of moral obligation, which strongly predict AWF meat product purchase intention.

Although the direct effects of consumers' knowledge of and trust in labels on their intention to buy 'ethically produced' food products are already known (e.g. Hoek et al. 2013; Perrini et al. 2010; Taufique et al. 2017; Toma et al. 2011; Vecchio et al. 2012), results of our study indicate that both variables do not predict consumers' intention to purchase AWF meat products. However, the variables affect the two predictors (moral obligation and attitude) of purchase intention.

Consumers' level of knowledge of the Better Life Trademark's meaning partly shapes their feelings of moral obligation to purchase AWF meat products. One can speculate that the degree to which consumers know what the labels represent suffices to trigger their awareness of the issue concerning the treatment of animals as food sources, which subsequently translates to consumers' moral concerns.

Additionally, despite consumers' trust in the Better Life Trademark, the hypothesized impact of the variable on AWF meat product purchase intention is also not statistically significant. This finding, however, does not diminish the value of consumer trust in the label because it has a significant effect on consumers' attitude towards purchasing AWF meat products. A positive attitude towards purchasing AWF meat products, hence, is a function of consumers' confidence in the certification mechanism confirming the ethical aspect of meat food products. As underscored in the theoretical discussion, one could not expect consumers to have a positive view on buying AWF meat product if the ethical label stamped on it is deemed untrustworthy.

Implications

The pivotal role consumers' feelings of moral obligation play in their willingness to purchase AWF meat products signifies that efforts to understand the foundations for those feelings should be pursued. From a practical standpoint, insights into the impetus of moral obligation will be relevant for designing social interventions to promote prosocial behaviors (Thøgersen 2002) such as the conscious purchase of AWF meat products.

While consumers may be familiar with an AWF logo (e.g. Better Life Trademark), strengthening consumers' knowledge of what such a logo stands for must be pursued, given the influence of knowledge on feelings of moral obligation and trust in labels. The star system used by the Better Life Trademark, for example, must be adequately explained to a wider segment of consumers in a more accessible way. Currently, an official website for the label provides the pertinent information about

the star system. However, this mode of information dissemination might exclude consumers who are not inclined to actively seek the relevant information.

Campaigns that aim at prompting consumers to buy AWF meat products should also explore the role of social norms. The impact of social norms as persuasion strategies, however, might depend on how messages capitalizing on social proof are framed and constructed. As social norms are known to shape consumers' feelings of moral obligation to purchase AWF meat products, marketers and campaign designers should carefully consider how various forms of social norms could be utilized to trigger perceptions of moral obligation. In their study on environmental conservation behavior among hotel guests, Goldstein et al. (2008) found that describing an act as something already performed by a group enhances people's motivation to perform the act.

Directions for Future Research

Despite several limitations (e.g. small sample size, the focus on respondents from one cluster, the high number of highly educated respondents, nonrandom selection of survey participants), results of this study can still provide valuable insights into the mechanisms behind consumers' AWF meat product purchase intention. Nonetheless, future research could still improve on this study's limitations.

First, the focus on behavioral intention has its issues. Studies into consumption behavior often rely on measures of behavioral intention under the premise that intention is a good indicator of actual behavior (Sun and Morwitz 2010). Moreover, in a review of the literature on ethical consumption, Hassan et al. (2016) underscore that empirical studies anchored on the Theory of Planned Behavior do not examine the theory completely since the focus is primarily on the effects of attitude, subjective norm, and perceived behavioral control; and not on the impact of intention on actual behavior.

However, in the context of ethical, sustainable, or green consumption, a review of various empirical studies indicate that consumers who expressed their intention to consume ethically or sustainably do not often translate their intentions to actual behaviors (ElHaffar et al. 2020; Park and Lin 2020), resulting in the phenomenon referred to as the 'green gap' (ElHaffar et al. 2020) or ethical consumption gap (Bray et al. 2011). Carrington et al. (2014) argue that the translation of behavioral intention to actual behavior depends on how consumers prioritize ethical concerns, given variations in the value attached to different ethical concerns. Realizing this intention-behavior gap, the results of the cross-sectional study must be interpreted with caution. Future research could, therefore, explore the potential intention-behavior gap in the context of AWF meat product consumption, and to identify the factors prompting this gap.

Second, the study exclusively focused on the roles of rational factors in people's AWF meat product purchase intention. This emphasis on the rational grounds for ethical consumption is constrained by its failure to consider the potential impact of non-rational factors such as emotions (Yacout and Vitell 2018). Anticipated emotions such as guilt (for failure to perform the desirable behavior) or pride (for

successfully doing the socially approved act) could very likely trigger AWF meat product purchase intention.

Third, the approach for measuring attitude could be reconsidered by operationalizing the construct as having two distinct components—*affective* (performing behavior X is pleasing) and *cognitive* (performing behavior is harmful/beneficial) (Dean et al. 2008). However, one must be careful in measuring the second component as the emphasis on a behavior's positive attribute might be similar to how moral obligation is operationalized. A limitation of the attitude measurement in our study is that the statements used only focused on a cognitive assessment of the desirability of the behavior.

Fourth, in this study, consumers were lumped into one homogenous category, while in the context of AWF meat product purchase, consumers might either be categorized as regular, irregular, or casual (Rana and Paul 2017). One can expect significant variations in the factors influencing their AWF meat product purchase. It is likely that for regular consumers, moral obligation would be an important consideration; while for irregular consumers, the effects of social influence and price might be more salient.

A regular consumer might have already internalized the values associated with AWF meat product purchase and might be less sensitive to price-related issues. Additionally, a regular consumer might have already developed a strong view of himself as an animal-welfare advocate, and he might even regard his willingness to pay more for a three-star AWF meat product as a strategy to reduce the psychological tension between meat eating and adhering to the belief that farm animals are entitled to live comfortably before heading to the slaughterhouse.

Fifth, the convenience sample used for the study constrains the generalizability of the survey research. Most of our survey participants are highly educated and women constituted the majority. They are also relatively young, and most participants had a net monthly income lower than 2,000 euros. It has been reported in previous studies that people who are inclined to reduce their meat consumption or purchase 'ethical meat products' are typically female (Mulder and Zomer 2017; Sanchez-Sabate and Sabate 2019), belong to a younger demographic cluster (Sanchez-Sabate and Sabate 2019), and highly educated (Mulder and Zomer 2017). Those with lower education are less likely to pay the premium price for AWF meat products (De Jonge et al. 2015). Future studies, therefore, should focus on identifying the factors that could influence the AWF meat product purchase intention of male, older, and lower educated consumers. The interaction effects of AWF purchase intention factors and consumers' demographic characteristics should also be determined with a more representative, larger sample. Such a larger sample increases statistical power and leads to more generalizable results (Heidel 2016).

Finally, future research could also focus on the role of different levels of welfare in relation to AWF meat product purchase intention. As price variations are to be expected when considering meat products with different welfare levels, the extent to which certain factors will influence the purchase of products from ethically raised farm animals might either be enhanced or weakened by the welfare level associated with those products. It is likely that price considerations might matter for decisions to buy meat products with higher welfare than those with lower welfare levels.

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