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**“Not tested on animals”: How consumers react to cruelty-free cosmetics  
proposed by manufacturers and retailers?**

**Cindy G. GRAPPE, Cindy LOMBART, Didier LOUIS, and Fabien DURIF**

**Abstract**

**Purpose** – Animal welfare is increasingly favoured by consumers in their choice of food and cosmetic products, proposed by manufacturers and retailers. This study aims to investigate the impact of the “not tested on animals” claim on consumers’ attitude and behavioural intention towards a cosmetic product through an enriched version of Ajzen’s Theory of Planned Behaviour.

**Design/methodology/approach** – A between-subjects design has been used. 450 participants were recruited through the social network of a cosmetics and personal hygiene brand in Quebec, Canada, and answered a questionnaire. They were randomly assigned to either a manipulation group (n=226) or a control group (n=224). Data were analysed with Partial Least Squares Structural Equation Modelling.

**Findings** – This study shows that external (credibility and attitude towards marketing claims) and internal psychological variables (subjective norms and altruistic concerns with animal welfare) influence attitude towards and purchase intention of “not tested on animals” personal care products. More egotistic concerns, such as personal appearance, also explain the formation of attitude towards cruelty-free cosmetics.

**Research limitations/implications** – This research supplements Ajzen’s original model with internal psychological (individuals’ concerns with animal welfare and personal appearance) and external (general credibility of cosmetic products claims, credibility of the “not tested on animals” claim and attitude towards this claim) variables. These variables, as suggested by previous research on cosmetics and their claims, improve the understanding of consumer attitude and purchase behaviour patterns.

**Practical implications** – The study’s findings point out the role of companies to increase consumers’ knowledge on the significance and transparency of their messages, notably the “not tested on animals” claim. They also stress that policymakers in regions where regulation is unclear should at least punish untruthful communication pertaining to animal testing in cosmetic and personal care products.

**Originality/value** – Prior studies on cosmetic products did not investigate the difference of consumer attitude formation towards cruelty-free products compared to conventional cosmetic products. Consequently, this research shows that the construction of attitude towards cruelty-free products highly differs from conventional personal care.

**Key words** Animal welfare, cruelty-free, cosmetics, theory of planned behaviour, credibility, marketing claims

**Paper type** Research paper

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## Introduction

It is now obvious that consumers are increasingly aware of animal welfare in their daily choices. This tendency is observable all over the world. In the United States, 84% of citizens pay importance to better living conditions for animals (1). In Canada, 47% consider “very important” that companies treat animals humanly (2). In the European Union, 82% believe that it is important to protect the welfare of farmed animals and that these animals should be better protected than they are currently (3). The World Organization for Animal Health defines animal welfare as the physical and mental state of an animal, in relation to the conditions in which it lives and dies (4).

To guarantee animal welfare, the food industry offers consumers a plethora of claims and labels (Schröder and McEachern, 2004). This move has been closely followed by efforts in the hygiene and cosmetics sphere (Sheehan and Lee, 2014). A good amount of manufacturers move towards the adoption of “cruelty-free” or “not tested on animals” claims. Indeed, these messages appear as the major acquisition vector for 57% of Americans when selecting a cosmetic product (5). Retailers also commit to defend the animal cause, even if this pattern is more observable in the food industry.

Meanwhile, governments tend to a reduction, if not a ban of tests on animals (Sreedhar *et al.*, 2020). In 2020, 39 countries (including the entirety of the European Union) have already adopted laws banishing these tests in the cosmetics area. The rest of the world does not oblige nor forbid them (e.g., in Canada and in most US states). Animal testing is only legally required in China, whether a Chinese or a foreign brand wishes to market its products in mainland China. This can lead consumers to question the essence of their purchases. For example, a brand can be qualified as “cruelty-free” if it sells its products in the UE, but if it also distributes them in mainland China, some clients might stop considering it as cruelty-free.

Prior research on cosmetics and personal care products suggested that certain values may influence formation of consumers’ attitude and behaviour by encouraging them to look for products that will satisfy their values (Grunert and Juhl, 1995). For instance, health, environmental and appearance concerns may explain attitude towards buying organic cosmetics (Kim and Chung, 2011; Photcharoen *et al.*, 2020). Regarding cruelty-free cosmetics, they benefit very high attitudinal and behavioural evaluations, and concerns for animal rights and animal well-being may play a central role in these preferences (Sheehan and Lee, 2014).

However, prior studies on cruelty-free cosmetics lack reliable and sufficient explanation of the attitude and purchase intention towards products that have not been tested on animals (Sheehan and Lee, 2014). Consequently, the objective of this research is to investigate the impact of the “not tested on animals” claim on consumers’ attitude and behavioural intention towards a cosmetic product through Ajzen’s (1985) Theory of Planned Behaviour (TPB). The latter has been enriched by internal psychological (individuals’ concerns with animal welfare and personal appearance) and external (general credibility of cosmetic products claims, credibility of the “not tested on animals” claim and attitude towards this claim) variables, as suggested by previous research on cosmetics (Marcoux, 2000; Hamzaoui-Essoussi and Zahaf, 2008) and their claims (Wansink *et al.*, 2004; Binninger, 2017).

While altruistic and egoistic values have rarely been put together as explanatory cues of attitudinal formation of cosmetics preferences (Kim and Chung, 2011), this research will consider both concerns for animal welfare and personal appearance as potential and plausible influences in the development of positive attitude towards cruelty-free cosmetics (Sheehan and Lee, 2014). Moreover, prior studies in this field of research did not investigate the difference of consumer attitude formation towards cruelty-free products compared to conventional personal care (Schuitema and De Groot, 2015). Consequently, this research will show that the construction of attitude towards cruelty-free products differs from conventional cosmetics. It will apprehend attitudinal development through a cognitive progression where beliefs define attitude, leading to the delineation of intention, which guides behaviour (Ajzen, 1991). It will develop a linear model explaining attitude and purchase intention of cruelty-free personal care products based on credibility granted to claims used on cosmetics labels and ads in general as well as to cruelty-free claims credibility, leading to attitude towards the “not tested on animal” claim.

From a theoretical point of view, this research complements the founding work of Ajzen on prediction of an individual’s intention to engage in a behaviour with variables both internal and external to the psychology of the consumer (e.g., individuals’ concerns with animal welfare and personal appearance, and perceived credibility of claims and associated products). It also illustrates the differences in consumers’ attitude and purchasing behaviour formation for cruelty-free products compared to conventional cosmetics. From a managerial point of view, this research will point out the educational responsibility of brands to consumers to promote transparency, fluency and understanding ability regarding labels and messages, notably the “not tested on animals” claim. Brands should also reach for official, independent, third-party certifications and labelling systems to be perceived by consumers as more socially responsible.

The remainder of the article is organized as follows. First, a literature review on animal welfare and labelling referring to the “cruelty-free” notion is proposed. Then, the applied theoretical framework, the posited hypotheses and the research model are discussed. The executed data collection, the conducted experiment and the measurement scales used are described. Lastly, the results, their theoretical and managerial contributions as well as the limits of the research are considered. Future research avenues are also proposed.

## **Claims and labels about animal welfare**

### *Animal welfare*

Animal welfare has benefited from a lot of researchers’ attention, but principally in the food industry. They pointed out that consumers were dissatisfied with breeding and animal well-being standards (e.g., Fernqvist and Ekelund, 2014; Ortega and Wolf, 2018). Consumers require brands that go beyond these norms (Te Velde *et al.*, 2002) such as giving access to “natural” living conditions, ensuring the health of the animals, respecting their biological functions (Spooner *et al.*, 2014) or prioritizing small family-scaled farming (Gracia and de-Magistris, 2016).

In order to encourage improved practices, some consumers declared to be ready to spend more (e.g., from 19 to 23% according to Gracia *et al.* (2011)). Animal welfare has indeed a purchase leveraging effect for organic products (Honkanen *et al.*, 2006; Zander and Hamm, 2010; Akaichi *et al.*, 2019) and stands for quality and food well-being (Binnering,

2017). However, a lack of knowledge subsists concerning animal welfare (Schröder and McEachern, 2004; Spooner *et al.*, 2014). The concept is recurrently confused with organic, local perceptions (Dahlhausen *et al.*, 2018), good taste, health, pleasing sensations (Van Riemsdijk *et al.*, 2017) and naturality (Borkfelt *et al.*, 2015).

### *Claims and labels*

In the personal care area, few researchers reflected upon the question of animal welfare (Liobikienė *et al.*, 2016; Photcharoen *et al.*, 2020). However, brands offer consumers a myriad of labels (e.g., logos with bunnies) and claims, including negatively framed messages (e.g., “cruelty-free,” “not tested on animals”), shedding light on the absence of dangerous or controversial ingredients or processes because of a public opprobrium (Darke and Ritchie, 2007). This aims to transform consumers’ emotional response into an actual act of purchasing (Li and Chapman, 2012). Animal-friendly claims and labels elevate brands’ perceptions (Sheehan and Lee, 2014). For instance, Lancendorfer *et al.* (2008) proved that a simple iconography depicting a dog led consumers to have a positive brand image. Labels and claims referring to the “cruelty-free” idea often call on emotional pondering, the same way do products playing with pastoral visuals (Amos *et al.*, 2014) or even with cuteness appeals via a graphic dynamic (Wang *et al.*, 2017). Yet, they may fail to provide tangible proofs (Carlson *et al.*, 1993).

Some consumers are easily affected by animal-friendly claims and associated labels (Honkanen *et al.*, 2006). The wording “cruelty-free” has been proved to be a “call-for-action” term. It acts as a powerful heuristic in consuming choices, and proves to be a purchasing vector especially when egoistic attributes (price, familiarity, knowledge) are fulfilled (Schuitema and De Groot, 2015). In general, consumers find these “negatively framed” messages substantiated, instructive and important (Newburger, 2009). This is supported by established typology of cosmetics (Fowler *et al.*, 2015). Allegations referring to the absence of tests conducted on animals (e.g., “not tested on animals”) are largely considered as acceptable from a semantic standpoint, and thus easily decryptable by consumers. These messages as well as associated labels (e.g., logos with bunnies) hit an almost unanimous recognition rate (Ormandy and Schuppli, 2014).

## **Theoretical framework, hypotheses and research model**

### *Theory of planned behaviour*

To grasp consumers’ attitude and behaviour towards the purchase of products with a “not tested on animals” claim, the TPB (Ajzen, 1985) has been favoured. In this research, the universally understood claim “not tested on animals” (Sheehan and Lee, 2014) has been preferred to the “cruelty-free” wording. Although more popular in the industry, more often do consumers perceive it as vague (Hastak and Mazis, 2011). The TBP is largely recognized as a valuable tool to shed light on deciding factors of purchase intention in the cosmetic and hygiene area for organic cosmetics (Kim and Chung, 2011; Photcharoen *et al.*, 2020), green skincare (Hsu *et al.*, 2017) or even conventional products (Lu and Chen, 2017). Although prior research has covered the understanding of some cosmetic claim trends, it is void of interest towards cruelty-free products.

The TPB explains the adoption or non-adoption intention of a behaviour through the attitude held towards this behaviour, perceived behavioural control and subjective norms.

This model allows the study of the influence of consumers' attitude on their behavioural intention as well as the influence of normative beliefs, subjective norms, and perceived behavioural control. Moreover, Ajzen's original model has been supplemented with both internal psychological (individuals' concerns with animal welfare and personal appearance) and external (general credibility of cosmetic products claims, credibility of the "not tested on animals" claim and attitude towards this claim) variables. These variables, suggested by previous research on cosmetics (Marcoux, 2000; Hamzaoui-Essoussi and Zahaf, 2008) and their claims (Wansink *et al.*, 2004; Binninger, 2017), will improve the understanding of consumers' attitude and purchase behaviour.

### *Perceived behavioural control, subjective norms, attitude and purchase intention*

Attitude towards a behaviour denotes "the level of favourable or unfavourable evaluation of a certain behaviour" (Ajzen, 1991). Consumers' attitude often acts as mediator in the link between their values and their behaviour (Shim and Eastlick, 1998) and the more a person has a positive attitude towards the adoption of a behaviour, the more he will be prone to adopt it (Ajzen, 1985). As far as the cosmetic and personal hygiene industry is concerned, it has been shown that attitude positively influences purchase intention of an organic cosmetic product (Kim and Chung, 2011; Photcharoen *et al.*, 2020), of green skincare (Hsu *et al.*, 2017), of free from parabens cosmetics (Hansen *et al.*, 2012) and even conventional hygiene products (Lu and Chen, 2017). Considering these previous works, this research posits the following hypothesis:

*H1: Consumers' attitude towards a "not tested on animals" cosmetic product has a positive influence on their purchase intention of this product.*

Behavioural control is "the perceived easiness or difficulty in adopting a behaviour." The more a person perceives a high level of personal control, the more he tends to reveal high behavioural intention relating to the adoption of a given behaviour (Ajzen, 1991). Previous research has used different variables pertaining to situational factors when delineating perceived control of cosmetics buying such as price (Kim and Chung, 2011), confidence and time (Hsu *et al.*, 2017), and convenience (Photcharoen *et al.*, 2020). However, an important part of labeled products choice making lacks thorough insight: level of involvement and trust brought by comprehension (Petty and Cacioppo, 1986; Chaiken *et al.*, 1989). A high level of involvement in the buying decision positively influences messages' efficacy.

Strategies based on logic and sound demonstrations are the most efficient and influent concerning purchase behaviour, especially when a consumer's level of involvement is high, and conversely, one with low levels of involvement will use peripheral signals and heuristics (Chaiken *et al.*, 1989). Some have tested such variables in cosmetics (Lu and Chen, 2017) or green products buying contexts (Liobikienė *et al.*, 2016). In this research, perceived behavioural control is thus envisioned as the level of reading and of comprehension of labels and tags of cosmetic products (Roe *et al.*, 1999), as well as the interest in reading deciphering them (Petty and Cacioppo, 1986; Hsu *et al.*, 2017). According to Ajzen (1991), it should positively affect attitude and purchase intention of cruelty-free cosmetic products even if few studies apprehend perceived behavioural control as inducing both positive attitude and behavioural intention – only the latter has been scrutinized (Kim and Chung, 2011). Accordingly, we hypothesize that:

*H2: Perceived behavioural control has a positive influence on consumers' attitude towards a "not tested on animals" cosmetic product (a) and their purchase intention of this product (b).*

Finally, subjective norms reflect peer influence and characterize "*the perceived social pressure in the adoption or non-adoption of a behaviour*" (Ajzen, 1991). Peer pressure and the desire to be positively perceived by others have been proved as a valid influence of purchase intention of organic (Kim and Chung, 2011; Photcharoen *et al.*, 2020), free from parabens (Hansen *et al.*, 2012), green (Hsu *et al.*, 2017), and conventional cosmetic products (Lu and Chen, 2017). Indeed, psychosocial perspectives are significant reasons for positive attitude and purchase intention of cosmetic products (Hillhouse *et al.*, 2000). Still, previous research has mainly only grasped subjective norms influence on behavioural intention and rarely on attitude as well. However, we offer the following hypothesis:

*H3: Subjective norms have a positive influence on consumers' attitude towards a "not tested on animals" cosmetic product (a) and their purchase intention of this product (b).*

#### *Personal concerns with animal welfare and appearance*

In order to sharpen the understanding of attitude and purchase behaviour towards cosmetics displaying claims, and especially the "not tested on animals" allegation, it has been considered appropriate to include variables reflecting personal interests. Indeed, if consumers purchase cosmetic products for hygiene purposes, they also do so to modify their appearance (Marcoux, 2000) or/and because they aspire to be eco-friendly and respect animal welfare (Hamzaoui-Essoussi and Zahaf, 2008).

Literature has often classified these motivations into two major categories: "egoistic" concerns, based on individualism, appearance and personal health, and "altruistic" concerns, referring to the protection of the environment or of animals (Padel and Foster, 2005). Researchers have validated the influence of such values on attitude towards cosmetics, specifically health concerns when choosing organic or natural products (Kim and Chung, 2011; Photcharoen *et al.*, 2020), appearance consciousness and hedonism, materialism, self-identity and self-transcendence for free from cosmetics or environmental concerns and conservation values for organic, eco-friendly beauty products (Kim and Chung, 2011; Hansen *et al.*, 2012). However, none focuses on a value system effect on intention.

In regard to cruelty-free personal hygiene products, Sheehan and Lee (2014) have preliminarily posited, by means of a qualitative research, that support of animal rights is positively correlated with both attitude and purchase intention of cruelty-free brands. Consequently, preoccupations about animal welfare (Honkanen *et al.*, 2006; Nisbet *et al.*, 2009) and personal appearance (Todd, 2004) have been incorporated in our research model. We consider that these psychological variables, internal to consumers' personal beliefs, can have an influence on their appreciation and behaviour. According to Fishbein (1963), beliefs influence the adoption intention of a behaviour as well as the adoption in itself. Thus, we posit the following hypotheses:

*H4: Concerns pertaining to animal welfare have a positive influence on consumers' attitude towards a "not tested on animals" cosmetic product (a) and their purchase intention of this product (b).*

*H5: Concerns pertaining to personal appearance have a positive influence on consumers' attitude towards a "not tested on animals" cosmetic product (a) and their purchase intention of this product (b).*

*Credibility and attitude towards the « not tested on animals » claim*

Ajzen's original model has also been enriched with external variables to the consumer's psychology envisioned as a linear model explaining attitude and purchase intention of cruelty-free cosmetic products. This is substantiated by the exploration of the level of credibility granted to claims used in personal care in general and to the "not tested on animals" message specifically. Indeed, the credibility of a given message is considered as a key factor in its own understanding (Heesacker *et al.*, 1983).

Several factors are likely to influence beliefs accorded to claims, comprising familiarity with the product or the brand. For instance, prior knowledge of a claim helps to simplify the information and can lead to a fairer interpretation. MacKenzie and Lutz (1989) have tested and validated the fact that perceived credibility of ads in general positively influenced credibility of a particular advertising stimulus on a given exposition occasion as well as consumers' attitude towards this stimulus. A person not believing in the veracity of a message will be less likely to adopt a positive attitude towards the product displaying it and to embrace any kind of buying intention. This reasoning could be extrapolated to cosmetic claims and, most specifically, to those referring to the lack of animal testing. Therefore, we hypothesize that:

*H6: General credibility of cosmetic products claims has a positive influence on credibility of the "not tested on animals" claim (a) and consumers' attitude towards this claim (b).*

For a label or a claim to be efficient and plausible, it is critical that it rapidly translates into a personal relevant interest for the consumer, whether pertaining to his health, the quality of the product or cost-effectiveness (Binninger, 2017). Since short and simple claims are considered as more persuasive cues during purchase decision, it is because they often refer to a particular attribute and not to the product in its entirety. Moreover, more concise and straightforward claims reach out to all consumers whether they are concerned and interested in the message or not (Wansink *et al.*, 2004). Holbrook (1978) has also shown that perceived credibility of a given message significantly contributes to the prediction of an attitude towards a claim. Furthermore, a message credibility has a direct and significant positive impact on attitude towards this message (Choi and Rifon, 2002). Consequently, we propose the following hypothesis:

*H7: Credibility of the "not tested on animals" claim has a positive influence on consumers' attitude towards this claim.*

Lastly, several studies indicated that consumers' attitude towards a particular ad has a positive and significant influence on their attitude towards the brand (Goldsmith *et al.*, 2000; Choi and Rifon, 2002). Indeed, ad perception and favourable or unfavourable attitude have a direct effect on attitude towards the brand related to the ad (MacKenzie and Lutz, 1989). Building upon this analogy, we conjecture that:



*H8: Consumers' attitude towards the claim "not tested on animals" has a positive influence on their attitude towards the product displaying this claim.*

Figure 1 offers a synthesis of the research hypotheses.

[insert Figure 1 around here]

## **Methodology**

### *Data collection*

A cosmetics and personal hygiene brand in Quebec, Canada allowed us to use its social network to post a link with our questionnaire. We asked the brand's customers to answer questions on cosmetic/personal care products and their habits. With the help of a filter question on their purchasing and consumption habits of cosmetics and personal care, only users of this product category were allowed to answer the questionnaire. 450 actual buyers and consumers of cosmetic/personal care products were integrated in our research (response rate: 94%).

The respondents' average age in our sample is 30.6 years old and most are women (82.6%), which corresponds to the brand's target. 50.7% are single and 48.5% common-law or married. Both groups are homogeneous in terms of sex ( $\chi^2=1.113$ ; p-value=0.291), age ( $\chi^2=0.127$ ; p-value=0.722) and status ( $\chi^2=2.277$ ; p-value=0.685). Table 1 presents the respondents' socio-psychographic characteristics of the experimental groups formed.

[insert Table 1 around here]

### *Experimental design*

A between-subjects design has been used. The 450 participants of our research were randomly assigned to either a manipulation group (n=226) or a control group (n=224). When answering our questionnaire, the participants of the manipulation group (n=226) had to consider a shampoo bottle with the claim "not tested on animals" added on it, whereas the participants of the control group (n=224) had to reflect on the same product, but without any claim on the bottle.

A shampoo bottle had been chosen for its suitability for all kinds of consumers, indiscriminately of sex, age or other characteristics. The penetration rate of hair products is high worldwide (i.e., more than 80% in North America). The same shampoo bottle, without reference to any brand to avoid introducing bias into the judgment of the cosmetic product proposed, was submitted to the respondents of the control group and manipulation group, except that the bottle of the manipulation group had the claim "not tested on animals" added on it.

### *Measurement scales*

Attitude towards the cosmetic product was measured by three items adapted from the brand attitude measurement scale of Lombart and Louis (2012). Consumer purchase intention of the cosmetic product was measured by four items taken from the behavioural-intentions battery proposed by Zeithaml *et al.* (1996). Subjective norms and perceived behavioural control were measured respectively by three and two items adapted from the scales of Redondo Palomo *et al.* (2015) that measure these two variables towards green skincare products. Consumers' concerns with animal welfare were measured by three items taken from the scale of Herzog *et al.* (1991) developed to measure consumer attitudes towards the use of animals. Consumers' concerns with personal appearance were measured by four items taken from the appearance schemas inventory proposed by Cash and Labarge (1996).

The credibility of claims displayed on cosmetic products in general was measured by three items adapted from the general advertising credibility scale proposed by MacKenzie and Lutz (1989). The credibility of the studied claim was assessed through four items adapted from the perceived credibility of a quality label developed by Moussa and Touzani (2008). The attitude towards the "not tested on animals" claim was measured by four items adapted from the scale introduced by Maheswaran and Meyers-Levy (1990) to determine consumers' attitude towards the adoption of an advocated behaviour. Both groups answered to all our questionnaire's items, except to those related to the presence of claims on cosmetic products (in general or the one studied) for the control set. The items used in this study are available in table 2.

### *Data analysis*

In this research, we used partial least squares structural equation modelling (PLS-SEM) and a bootstrap procedure with 5,000 replications (Tenenhaus *et al.*, 2005), to analyse our data. We used PLS-SEM (with the software XLSTAT 2020), referred to as variance-based, instead of covariance-based structural equation modelling (CB-SEM) (Hair *et al.*, 2017), for two main reasons stressed by Hair *et al.* (2012, 2014) in their meta-analyses on the use of PLS-SEM in marketing research. PLS-SEM does not require the variables to follow a multivariate normal distribution. Computed Mardia's coefficient is superior to  $|3|$  in this research. PLS-SEM allows working with small samples. The sample sizes are equal to 224 and 226 for the two groups considered in this research (control and manipulation respectively) with a mean of 211.29 in the marketing field. PLS-SEM also allows working with models that include a large number of latent variables; indeed, our research model contains nine variables with an average number of 7.94 in the marketing field.

First, the measurement models were tested. Confirmatory factor analyses examined the unidimensional factor structure of the measurement scales used. Their reliabilities (Cronbach's alpha (Cronbach, 1951) and Jöreskog's  $\rho$  (Jöreskog, 1971) coefficients) as well as their convergent (average variance extracted (AVE); Fornell and Larcker, 1981) and discriminant (heterotrait-monotrait (HTMT) method; Henseler *et al.*, 2015) validities were also assessed. Then, the structural models were tested. We followed the recommendation of Hair *et al.* (2019) to report our results. To test the mediating effects postulated, the procedure advocated by Cepeda *et al.* (2018), specifically developed for PLS-SEM, was used. The significance of a direct effect ( $c'$ ) and an indirect effect ( $a \times b$ ) were estimated.

## **Results**

### *Test of the measurement models*

Confirmatory factor analyses established the unidimensional factor structure of the measurement scales used. The loadings, that are greater than 0.5 and statistically significant at the 1% level, are satisfactory (Table 2). Then, Cronbach's alpha (Cronbach, 1951) and Jöreskog's  $\rho$  (Jöreskog, 1971) coefficients indicated the reliability of the measurement scales used. The coefficients calculated are above the threshold of 0.7 and thus satisfactory (Table 3). Lastly, the approach advocated by Fornell and Larcker (1981) established the convergent validity of the measurement scales used. The AVE are above the threshold of 0.5 (see Table 3). The discriminant validity of the measurement scales used was established through the HTMT method, as recommended by Henseler *et al.* (2015) for variance-based SEM. The values in table 4 are below the 0.85 threshold.

[insert Tables 2, 3 and 4 around here]

### *Test of the structural models*

The SEM method enables to estimate complex models with many variables and structural paths. Linear independent-dependent relationships between several variables are examined in a path model. The structural model path coefficients (PC) for the relationships between the variables are thus derived from estimating a series of regression equations. The path coefficients have standardized values approximately between -1 and +1. Estimated path coefficients close to +1 represent strong positive relationships (and vice versa for negative values) that are usually statistically significant. The closer the estimated coefficients are to 0, the weaker are the relationships that are usually not statistically significant. Whether a coefficient is significant depends on its  $t$  value. When a  $t$  value is larger than a critical value, researchers can conclude that the coefficient is statistically significant at a certain error probability, i.e., significance level (i.e., a  $t$  value greater than  $|2.575/1.96|$  indicate that the path coefficient is significant at the 1/5 % level). The examination of the values of the path coefficients and their significance level in table 5 indicates the causal relationships between the different variables considered.

Hereafter, we present the results related to the manipulation group (n=226) (Figure 2), with the claim "not tested on animals" on the cosmetic product.

Firstly, the credibility of claims on cosmetic products in general has a positive and significant impact on consumers' attitude towards this claim (PC=0.373;  $t=3.792$ ;  $p<0.01$ ). Hypothesis H6b is supported by our data. The credibility of the studied claim has also positive and significant impact on consumers' attitude towards this claim, but to a lesser extent (PC=0.230;  $t=2.365$ ;  $p<0.05$ ). Hypothesis H7 is validated. By contrast, the credibility of claims on cosmetic products in general does not have a significant impact on the credibility of the studied claim (PC=0.179; non-significant (ns)). Hypothesis H6a is not supported by our data. In this research, the impact of the credibility of claims displayed on cosmetic products in general on consumers' attitude towards the studied claim (i.e., "not tested on animals") is direct. It is not mediated, partially or fully, by the credibility of the studied claim, as MacKenzie and Lutz's (1989) seminal work might have suggested.

In essence, the credibility of claims on cosmetic products in general and the credibility of the studied claim (i.e., "not tested on animals") explain 21.3% of consumers' attitude towards this claim.

Secondly, consumers' attitude towards the "not tested on animals" claim has a positive and significant impact on their attitude towards the cosmetic product with this claim (PC=0.356;  $t=3.747$ ;  $p<0.01$ ). Hypothesis H8 is supported by our data. Subjective norms have also a positive and significant impact on consumers' attitude towards the cosmetic product with the claim "not tested on animals" (PC=0.387;  $t=3.852$ ;  $p<0.01$ ). Hypothesis H3a is validated. Although it can be assumed that shampoo is a product used in a private, intimate setting, the sample's young age could eventually lead to a group purchase context and explain these results. Finally, consumers' concerns with animal welfare have a positive and significant impact on consumers' attitude towards the cosmetic product with the claim "not tested on animals" (PC=0.314;  $t=3.343$ ;  $p<0.01$ ). Hypothesis H4a is supported by our data. Similarly, consumers' concerns with personal appearance (PC=0.281;  $t=3.330$ ;  $p<0.01$ ) have also a positive and significant impact on consumers' attitude towards a cosmetic product displaying the claim "not tested on animals". Hypothesis H5a is validated. Our study confirms the founding work of Todd (2004). By contrast, perceived behavioural control does not have an impact on consumers' attitude towards the cosmetic product with the claim "not tested on animals" (PC=0.001; ns). Hypothesis H2a is not supported by our data.

Fundamentally, consumers' attitude towards the "not tested on animals" claim, subjective norms and consumers' concerns with animal welfare and personal appearance explain 42.6% of consumers' attitude towards the cosmetic product with the claim "not tested on animals". According to computed path coefficients, the impacts of these four variables on consumers' attitude towards the cosmetic product with the claim "not tested on animals" seem similar.

Thirdly, consumers' attitude towards the cosmetic product with the claim "not tested on animals" has a positive and significant impact on their purchase intention of this product (PC=0.406;  $t=5.202$ ;  $p<0.01$ ). Hypothesis H1 is validated. This finding is consistent with previous conclusions relating to conventional hygiene products (Lu and Chen, 2017), green skincare (Hsu *et al.*, 2017), organic cosmetics (Kim and Chung, 2011; Photcharoen *et al.*, 2020) or free-from parabens personal care products (Hansen *et al.*, 2012) while broadening them to cruelty-free cosmetics. Subjective norms have also a positive and significant impact on consumers' purchase intention of a "not tested on animals" cosmetic product (PC=0.360;  $t=4.253$ ;  $p<0.01$ ). This finding supports hypotheses H3b while confirming and extending to cruelty-free cosmetics the previous relations formulated in the works of Lu and Chen (2017) on conventional and green cosmetics, Kim and Chung (2011) and Photcharoen *et al.* (2020) on organic personal care products, and Hansen *et al.* (2012) on free-from parabens products. Finally, consumers' concerns with animal welfare have a positive and significant impact on consumers' purchase intention of a "not tested on animals" cosmetic product (PC=0.260;  $t=3.663$   $p<0.01$ ), supporting hypotheses H4b.

Conversely, consumers' concerns with personal appearance does not have an impact on consumers' purchase intention of this cosmetic product (PC=-0.028; ns), rejecting hypothesis H5b. This impact is fully mediated by consumer attitude. This significant mediating effect has been confirmed by the procedure developed by the Cepeda *et al.* (2018). Preoccupations regarding personal appearance, as suggested by Marcoux (2000) for conventional cosmetics, have only an indirect impact in our study, mediated by the concept of attitude. Similarly, perceived behavioural control does not have a significant impact on consumers' purchase intention of a "not tested on animals" cosmetic product (PC=-0.029; ns). Hypotheses H2b is not supported by our data. Recall that in this research, perceived behavioural control was envisioned as the level of reading and comprehension of labels and

tags of cosmetic and personal care products (Roe *et al.*, 1999), as well as the interest in deciphering them (Petty and Cacioppo, 1986; Hsu *et al.*, 2017). Low levels of involvement could explain this outcome (Petty and Cacioppo, 1986; Chaiken *et al.*, 1989). According to Anderson and Lavallee (2008) and Hansen *et al.* (2012), consumers' involvement level in their choice of cosmetic and hygiene products is oftentimes low.

Essentially, consumers' attitude towards the cosmetic product with the claim "not tested on animals", subjective norms and consumers' concerns with animal welfare explain 63.2% of consumers' purchase intention of a "not tested on animals" cosmetic product. According to computed path coefficients, consumers' attitude towards the cosmetic product with the claim "not tested on animals" and subjective norms have the strongest impacts. The impact of consumers' concerns with animal welfare is significant but seems less important.

For the control group (n=224) (Figure 3), the analyses performed indicate that subjective norms have a strong positive and significant impact on consumers' attitude towards the claim-free conventional cosmetic product (PC=0.748;  $t=10.969$   $p<0.01$ ) and on their purchase intention of this product (PC=0.596;  $t=6.184$ ;  $p<0.01$ ). Then, to a lesser extent, consumers' attitude towards the cosmetic product without a specific claim has a positive and significant impact (PC=0.289;  $t=2.862$ ;  $p<0.01$ ) on their intention to buy it. The model tested explains 62.9% of consumers' attitude towards the claim-free conventional cosmetic product and 62.1% of their purchase intention of this product.

[insert Table 5 around here]  
[insert Figures 2 and 3 around here]

## Discussion

The research's main goal was to explain attitude and behaviour towards cruelty-free products, compared to conventional products, through the theory of planned behaviour (Ajzen, 1985), enriched with external variables to the consumer's psychology such as credibility and attitude towards the "not tested on animals" claim, both linked to the brand's manipulation of the claim, as well as variables internal to the reasoning process, in our case, concerns with animal welfare and personal appearance.

Firstly, our study illustrates that when consumers disclose a positive perception of credibility of cosmetics claims in general and specifically the "not tested on animals" one, their attitude towards the cosmetic product with this claim will increase. This research thus confirms and extends to cosmetic claims and, most specifically, to those referring to the lack of animal testing, the founding work of MacKenzie and Lutz (1989) who indicated that perceived credibility of ads in general positively influenced credibility of a particular advertising stimulus on a given exposition occasion as well as consumers' attitude towards this stimulus. Similarly, it confirms and extends to personal care labelling, and most specifically to the claim "not tested on animals", the works of Holbrook (1978) and Choi and Rifon (2002). These authors highlighted that perceived credibility of a given message has a direct and significant positive impact on attitude towards this message. Further, our results establish an likeness between a claim and a product in the relationship between attitude towards a stimulus (i.e., an ad) and the positive attitude towards the related brand it creates, as illustrated by Goldsmith *et al.* (2000).

Our results also indicate that when consumers unveil psychosocial internal values for animal well-being and personal appearance, it will have a positive impact on their attitude towards a cosmetic product with a cruelty-free message, and subsequently on their purchase intention (directly or mediated by attitude.) This research thus quantitatively confirms Sheehan and Lee's (2014) preliminary conclusions about cruelty-free personal care products supporting that endorsing animal rights is positively correlated with both attitude and purchase intention of cruelty-free brands. In essence, consumers have the intention to purchase "not tested on animals" cosmetics because of concerns pertaining to animal welfare, as suggested by Hamzaoui-Essoussi and Zahaf (2008). Preoccupations regarding personal appearance, as suggested by Marcoux (2000) for conventional cosmetics, have only an indirect impact in our study, mediated by the concept of attitude.

Finally, in addition to substantiating the impact of external (situational) and internal (individual) variables to the consumer's psychology, this research also shed light on consumers' willingness to consider others' opinion, measured through Ajzen's subjective norms. This study thus enriches previous research as the latter has mainly considered the influence of subjective norms on behavioural intention and rarely on attitude (Kim and Chung, 2011; Hansen *et al.*, 2012; Hsu *et al.*, 2017; Lu and Chen, 2017; Photcharoen *et al.*, 2020). This research also reveals that consumer evaluation of cruelty-free vs. conventional cosmetic products differs in terms of social and personal values. Thus, it supplements prior studies on cosmetic products as the difference of consumer attitude formation towards cruelty-free products compared to conventional cosmetic products has not been examined (Schuitema and De Groot, 2015).

### *Theoretical implications*

Initially, this research highlights the difference of consumer attitude and buying behaviour formation when encountering cruelty-free products compared to conventional cosmetics. While consumer attitude and purchase intention are only based on subjective norms (i.e., peers' opinions) for personal care free from logos or credence claims, their constructions are far more complex as far as cruelty-free products are concerned. It aligns with the literature that underperforms in explaining attitude and behaviour towards general cosmetics (Lu and Chen, 2017).

In addition, this work supplements Ajzen's original model with internal psychological (individuals' concerns with animal welfare and personal appearance) and external (general credibility of cosmetic products claims, credibility of the "not tested on animals" claim and attitude towards this claim) variables. These variables, as suggested by previous research on cosmetics (Marcoux, 2000; Hamzaoui-Essoussi and Zahaf, 2008) and their claims (Wansink *et al.*, 2004; Binninger, 2017), improve the understanding of consumer attitude and purchase behaviour patterns. Consistent with previous research, our study supports the idea that certain value systems are explanatory factors of attitude in the cosmetics area (Grunert and Juhl, 1995; Kim and Chung, 2011; Hansen *et al.*, 2012), and that altruistic and egoistic considerations are not necessarily at odds. Alongside this system, credibility granted to cosmetics claims plays a substantial role in attitudinal development (MacKenzie and Lutz, 1989), proving that message manipulation and situational circumstances can indirectly influence purchase intention and potentially behaviour of cruelty-free personal care. Even though subjective norms also explain a significant part of attitude and buying intention of claim-free cosmetics, importance given to the animal cause, positive attitude towards the "not tested on animals" claim and credibility given to the latest also delineate attitude towards

cruelty-free products, on top of peer opinion. Seeking others' acceptance reveals a certain social pressure in the consumption of cruelty-free cosmetic products (Sheehan and Lee, 2014; Schuitema and De Groot, 2015). Alternatively, our results could suggest that pursuing consumerism promoting animal welfare is also based on feelings of morality as dictated by the social group (Thøgersen and Ölander, 2003).

Lastly, this study points out that behavioural control, or consistency in reading and the level of understanding labels and claims, has no impact whatsoever on choice of our tested products, unveiling a lack of consumer knowledge pertaining to the meaning of claims and graphic labels used by the industry (Hansen *et al.*, 2012). According to the theory of information economics, we can hypothesize that consumers are imperfectly informed about properties, claims, labels and ingredients of a cosmetic product (Ford *et al.*, 1990). Since personal care is a fast-moving consumer good, it seldom reflects high involvement levels from consumers (Shamsher and Chowdhury, 2012). Consequently, when involvement levels are low, consumers oftentimes use peripheral signals and heuristics, which cruelty-free claims have proved to be (Petty and Cacioppo, 1986; Sheehan and Lee, 2014).

#### *Managerial and public policy implications*

First, our results point to a strong need for companies' education duty related to the significance and transparency of their messages as a consequence of the lack of client recognition and understanding ability regarding claims and existing communication on labels. This is all the more preoccupying as certain "conventional" brands are establishing themselves in the natural and animal well-being market (e.g., by offering vegan formulations) while still testing their products on laboratory animals in places where law compels it or does not forbid testing, creating a double standard that becomes difficult to apprehend from the consumer's point of view. The use of credence claims leads consumers to encounter hardship and hazard when judging the veracity and authenticity of messages and to mix different information pertaining to animal welfare (i.e., vegan (referring to the absence of animal products) vs. cruelty-free (referring to the lack of testing on animals)). However, some brands and retailers have surpassed the "label only" concept by adopting a branding strategy fully integrative of their vision and their attachment to animal welfare (e.g., The Body Shop). Another pertinent strategy, as suggested by previous research, is to collaborate with relevant stakeholders, such as animal-interest organizations, in order to gain additional trust on the product in general (Schuitema and De Groot, 2015).

Second, the stronger a consumer believes a brand or retailer is engaged in sustainable manufacturing or retailing, such as fighting animal testing and promoting animal welfare, through TV spots or in-store digital displays (van Giesen and Leenheer, 2019), with or without underlying proofs and regardless of their interpretation of the claim, the stronger he agrees that this brand or retailer is safer and more socially responsible (Sheehan and Lee, 2014). In the same vein, whether retailers pertain to grocery stores or more specialized channels, offering consumers "responsible" products such as cruelty-free cosmetics and personal care would permit them to enhance their ethical image (Bezençon and Etemad-Sajadi, 2015) to the most committed clients in the first place. Subsequently, referencing and putting forward cruelty-free products on shelves would enable retailers to attract and create a relationship with these proactive consumers in order to develop trust, raise their satisfaction levels and retain them provoking loyalty to all their sales points (Lombart and Louis, 2014; Louis *et al.*, 2019).

Third, in terms of public policies, there exist as many regulations as countries. Consequently, no universal formula can be applied. To sum up, in the European Union, animal testing for cosmetics has been banned in 2013 and the use of claims or logos referring to the absence of thereof has been prohibited in 2019 (6) for remedying the proliferation of misleading cruelty-free claims. Brands have thus an education responsibility and should reach for official, independent, third-party certifications and labelling systems (e.g., Leaping Bunny, PETA, CCF Rabbit) that set a universal standard and combat misleading messages. The latest solution should also be envisioned by companies marketing in countries that do not forbid nor require animal testing of cosmetic products, such as the United States or Canada, as they represent the only truthful engagement and assurance for consumers. Brands have a real interest in putting additional efforts in terms of animal well-being given the power of the “not tested on animals” allegation. Indeed, the terms “cruelty-free” and “not tested on animals” are so highly motivating that consumers use it as a valuable heuristic, even with evidence that the terms may be meaningless (Sheehan and Lee, 2014). Also, policymakers in regions where regulation is unclear should at least punish untruthful communication pertaining to animal testing in cosmetic and personal care products.

### *Limitations and research avenues*

To begin with, only behavioural intention has been scrutinized in this research. The study of effective behaviour in a retail context or online could lead future research to refine our results, especially in terms of possible differences between intention and adoption, as observed in the responsible consumption literature pertaining to consumers’ contradictions, or “green gap” (ElHaffar *et al.*, 2020).

Then, it would be relevant to repeat the experiment with other subjects to reach an age mean and level of education that are more representative of the Quebec (Canada) population, but also in other countries than Canada, with different legislation and regulatory backgrounds. Larger sub-sample sizes would also allow testing of moderation effects, regarding sex (Herzog *et al.*, 1991) and age (Spooner *et al.*, 2014). Further studies could also investigate the respective impacts of the “cruelty-free” and “not tested on animals” claims, and even graphic labels such as homemade bunny logos or official labelling systems, on the enriched model of attitude and purchase intention formation proposed in this research.

Ultimately, additional work could also focus on other external variables such as those linked to the store’s environment (merchandising, price, atmosphere, etc.) or to the transactional website’s (user experience, price, etc.). This would provide more specific recommendations for retailers and brands. In the same vein, in terms of social influence, it is possible that the apprehension of cosmetic products use in a private sphere could relativize our results. For the purposes of exploring this hypothesis, a group purchase experiment, with or without the presence of accompanying people, could accurately measure the influence of subjective norms for cruelty-free cosmetics in different contexts.

### **Footnotes**

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(2) The Hartman Group. (2015). Sustainability practices: Animal welfare. Sustainability – Transparency.



- (3) TNS Opinion & Social. (2015). Attitudes of Europeans toward Animal Welfare. Special Eurobarometer 442.
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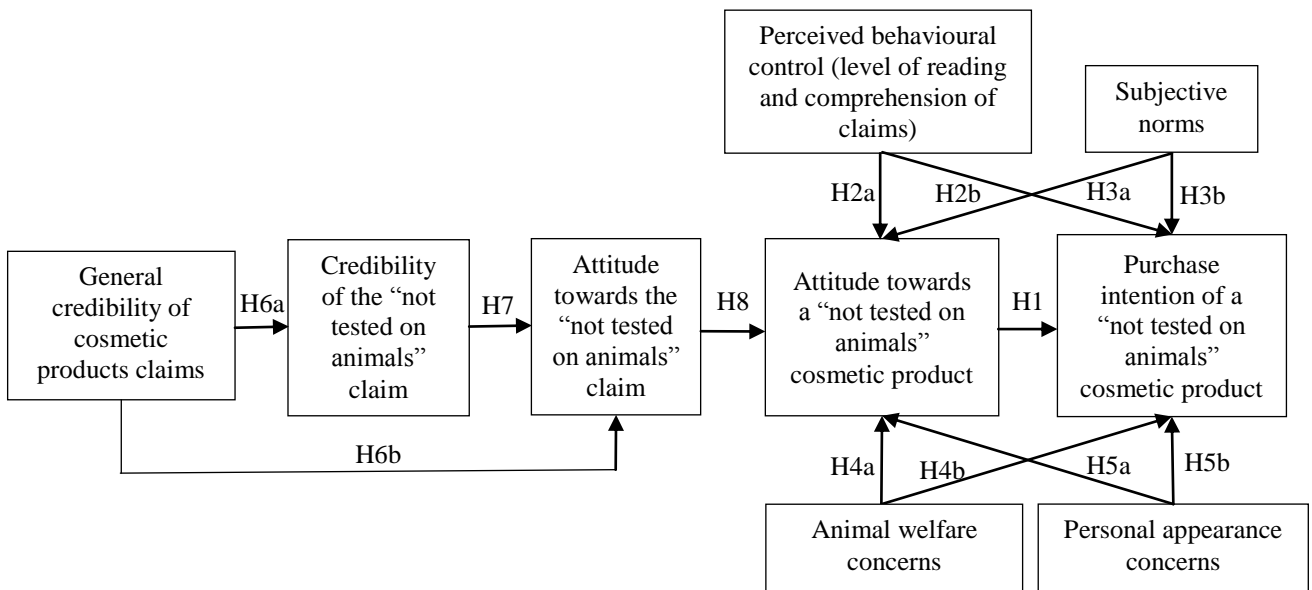
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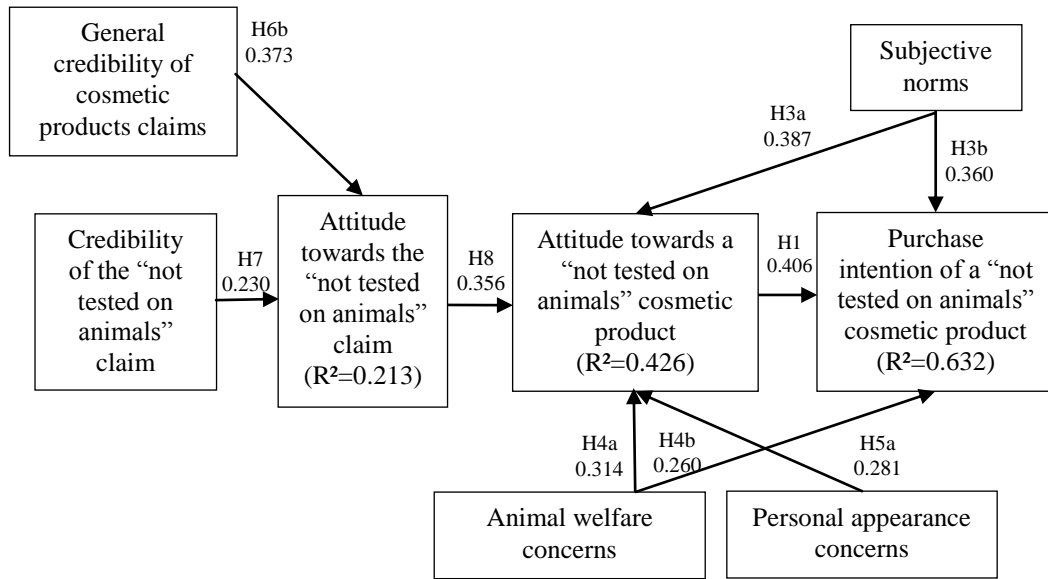
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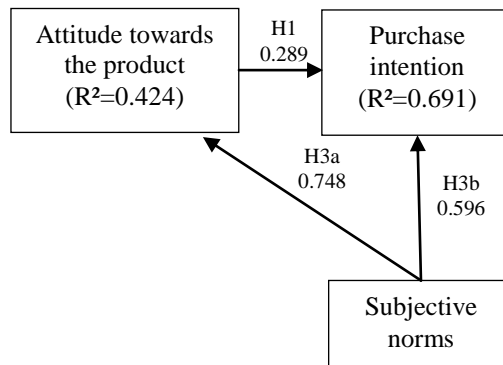
**Figure 1: Research model**



**Figure 2: “Not tested on animals” claim model**



**Figure 3: Control group model**





**Table 1: Socio-demographic characteristics of the control and manipulation groups**

		Total sample (n = 450)	Control group (n = 224)	Manipulation group (n = 226)
Sex	Female	82.6%	85.7%	79.8%
	Male	17.4%	14.3%	20.2%
Age group	Under 24	26.1%	30.8%	31.3%
	25–44	67.2%	62.6%	61.9%
	Over 45	6.7%	6.6%	6.7%
Occupation	Single	50.7%	51.6%	49.4%
	Common-law or married	48.5%	47.2%	49.6%
	Separated or divorced	0.8%	1.2%	1%

**Table 2: Results of confirmatory factor analyses**

		Control group (n = 224)		Manipulation group (n = 226)	
		Loadings	<i>t</i>	Loadings	<i>t</i>
Credibility of claims on cosmetic products in general	In general, I find claims displayed on cosmetic products... convincing			0.884	7.711***
	credible			0.843	8.241***
	honest			0.687	4.934***
Credibility of the claim	After looking at this cosmetic product, I find the claim "not tested on animals" displayed on its packaging ... reliable			0.890	9.526***
	sincere			0.907	12.010***
	upstanding			0.935	10.835***
	trustworthy			0.934	9.806***
Attitude towards the claim	After looking at this cosmetic product, I formed an opinion about the claim "not tested on animals" and I find that this claim is ... useful			0.913	8.978***
	important			0.942	10.907***
	relevant			0.914	8.670***
	interesting			0.907	11.207***
Attitude towards the cosmetic product	Overall, ...				
	I find this cosmetic product interesting	0.922	11.362***	0.957	11.669***
	I appreciate this cosmetic product	0.963	13.105***	0.974	12.631***
	I have a favourable attitude towards this cosmetic product	0.953	11.967***	0.940	11.504***
Purchase intention of the cosmetic product	After looking at this cosmetic product with the claim "not tested on animals", I could, in the near future ... buy this cosmetic product with the claim "not tested on animals"	0.917	7.254***	0.847	11.794***
	recommend this cosmetic product with the claim "not tested on animals" to my friends	0.906	8.943***	0.909	10.968***
	buy cosmetic products with the claim "not tested on animals"	0.928	7.991***	0.905	12.207***
	recommend cosmetic products with the claim "not tested on animals" to my friends	0.925	8.640***	0.908	11.134***
Concerns with animal welfare	Basically, humans have the right to use animals as we see fit (reverse item)	0.725	3.981***	0.645	5.501***
	Much of the scientific research done with animals for cosmetic products is unnecessary and cruel	0.722	3.359***	0.743	5.860***
	Too much fuss is made over the welfare of animals these days when there are many human problems that need to be solved (reverse item)	0.703	2.976***	0.859	8.126***
Concerns with personal appearance	My appearance is an important part of who I am	0.752	3.384***	0.813	9.436***
	I believe that by controlling my appearance I can control many of the social and emotional events in my life	0.817	3.120***	0.868	8.649***
	I should do whatever I can to always look my best	0.863	3.250***	0.882	11.720***
	I usually pay attention to my appearance	0.800	4.059***	0.786	7.591***
Perceived behavioural control	In general, ...				
	I read the claims on cosmetic products but I don't always understand everything	0.823	3.220***	0.876	8.858***
	I read the claims on cosmetic products and I understand almost everything (reverse item)	0.950	3.560***	0.882	8.784***
Subjective norms	After looking at this cosmetic product with the claim "not tested on animals", I think that ...				
	Most others who are important to me would think I should use this cosmetic product with the claim "not tested on animals"	0.968	13.677***	0.953	12.845***
	Most of the people I take into consideration would think I should use this cosmetic product with the claim "not tested on animals"	0.991	13.134***	0.976	13.641***
	My relatives (family, friends, ...) would advise me to buy this cosmetic product with the claim "not tested on animals"	0.985	12.527***	0.916	14.877***

Note: Student's *t* test values greater than |2.575| indicate loadings significant at the 1% level (\*\*\*).

**Table 3: Tests of reliability and convergent validity**

	Control group (n = 224)			Manipulation group (n = 226)		
	Cronbach alpha	Jöreskog rho	AVE	Cronbach alpha	Jöreskog rho	AVE
Credibility of claims on cosmetic products in general				0.743	0.859	0.655
Credibility of the claim				0.934	0.954	0.840
Attitude towards the claim				0.938	0.956	0.845
Attitude towards the cosmetic product	0.941	0.962	0.895	0.954	0.971	0.916
Purchase intention of the cosmetic product	0.939	0.956	0.845	0.915	0.941	0.796
Concerns with animal welfare	0.777	0.747	0.513	0.730	0.814	0.569
Concerns with personal appearance	0.835	0.893	0.655	0.837	0.907	0.703
Perceived behavioural control	0.753	0.890	0.790	0.706	0.872	0.773
Subjective norms	0.981	0.988	0.963	0.944	0.964	0.900

Note: AVE = Average Variance extracted.

**Table 4: Test of discriminant validity**

Control group (n = 224)	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Credibility of claims on cosmetic products in general									
2. Credibility of the claim									
3. Attitude towards the claim									
4. Attitude towards the cosmetic product									
5. Purchase intention of the cosmetic product									
6. Concerns with animal welfare									
7. Concerns with personal appearance									
8. Perceived behavioural control									
9. Subjective norms									
	1								
	0.765	1							
	-0.423	-0.189	1						
	0.046	0.183	0.018	1					
	-0.081	-0.044	0.178	0.266	1				
	0.789	0.836	-0.220	0.207	-0.120	1			
Manipulation group (n = 226)	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Credibility of claims on cosmetic products in general	1								
2. Credibility of the claim	0.123	1							
3. Attitude towards the claim	0.409	0.294	1						
4. Attitude towards the cosmetic product	0.162	0.534	0.572	1					
5. Purchase intention of the cosmetic product	0.361	0.241	0.671	0.702	1				
6. Concerns with animal welfare	0.197	0.091	0.474	0.158	0.509	1			
7. Concerns with personal appearance	0.232	0.173	0.087	0.145	-0.113	0.202	1		
8. Perceived behavioural control	-0.235	-0.096	-0.075	-0.033	-0.019	-0.078	-0.023	1	
9. Subjective norms	0.143	0.197	0.537	0.590	0.725	0.431	0.184	0.038	1

**Table 5: Results of structural equation model**

	Control group (n = 224)			Manipulation group (n = 226)		
	PC	<i>t</i>	R <sup>2</sup>	PC	<i>t</i>	R <sup>2</sup>
Credibility of claims on cosmetic products in general → Credibility of the claim				0.179	ns	0.024
Credibility of the claim → Attitude towards the claim				0.230	2.365**	0.213
Credibility of claims on cosmetic products in general → Attitude towards the claim				0.373	3.792***	
Attitude towards the claim → Attitude towards the cosmetic product				0.356	3.747***	
Concerns about animal welfare → Attitude towards the cosmetic product	0.145	ns	0.424	0.314	3.343***	0.426
Concerns about personal appearance → Attitude towards the cosmetic product	-0.077	ns		0.281	3.330***	
Perceived behavioural control → Attitude towards the cosmetic product	-0.041	ns		0.001	ns	
Subjective norms → Attitude towards the cosmetic product	0.748	10.969***		0.387	3.852***	
Concerns about animal welfare → Purchase intention of the cosmetic product	-0.028	ns	0.691	0.260	3.663***	0.632
Concerns about personal appearance → Purchase intention of the cosmetic product	0.011	ns		-0.028	ns	
Perceived behavioural control → Purchase intention of the cosmetic product	-0.103	ns		-0.029	ns	
Subjective norms → Purchase intention of the cosmetic product	0.596	6.184***		0.360	4.253***	
Attitude towards the cosmetic product → Purchase intention of the cosmetic product	0.289	2.862***		0.406	5.202***	

Notes: PC = path coefficient. Ns = non-significant. Student's *t* test values greater than |2.575/1.96| indicate path coefficient significant at the 1/5 % level (\*\*\*/\*\*).