



Go vegan! digital influence and social media use in the purchase intention of vegan products in the cosmetics industry

Rennan Carvalho dos Santos¹ · Marianny Jessica de Brito Silva² · Marconi Freitas da Costa¹ · Karen Batista¹

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Abstract

Social media have expanded the exposure of vegan consumption decisions and practices through the greater reach of opinions issued digitally by individuals concerned about ethical and environmental issues. Some of these people have reached considerable numbers of followers virtually, becoming digital influencers with built-in credibility that makes them opinion leaders. Considering them, this study aims to analyze the relationship between source credibility and the social media use in the purchase intention of vegan products endorsed by digital influencers, focusing on the cosmetics industry. We used the cross-sectional survey method and adopted Structural Equation Modeling to analyze the relationships between the variables from 190 valid questionnaires. We identified that both the social media use and the source credibility influence the purchase intention of vegan cosmetic products. The ability of digital influencers to shape consumer intentions was recognized, even though the products they endorse do not represent the follower's philosophy of life—for example, a nonvegan follower who intends to consume a vegan cosmetic from the digital influencer endorsement. Furthermore, we identified that the source credibility influences the social media use that is the influencer also shapes the individual digital behavior.

Keywords Digital influencers · Purchase intention · Vegan consumption · Source credibility · Social media use · Cosmetics industry

1 Introduction

Brazil is the fourth largest market in the world for beauty and personal care (Forbes 2020), a fact that points to Brazilians as avid consumers of cosmetics. Although the constant acquisition of beauty products reflects the consumerism present in postmodern society, such practice can be developed considering ethical and environmental issues. It can be seen that the consumer of these products may be migrating to

cleaner and greener consumption, from the search for connection with beauty brands that adopt ethical and sustainability standards in their organizational policies (Beck and Ladwig 2021). The search for vegan products, for example, is a global trend that affects all segments of consumer behavior, including the choice of cosmetics. According to a survey conducted in Brazil in 2019, approximately 53% of respondents were interested in natural beauty products, and 31% believed that products made with organic and natural ingredients were more effective than those that used chemical products (Statista 2022a, b).

In view of these changes faced by the market and with the rise of more sustainable and lasting markets, the development of the vegan cosmetics industry is observed. This market niche has a positive projection in the face of consumer trends worldwide. According to data from Statista (2022a, b), the vegan cosmetic product should grow approximately 6.3% of revenue per year, reaching the mark of 20.8 billion US dollars by 2025, emphasizing this trend in the coming years. The consumption of vegan cosmetics is carried out beyond the followers of the philosophy of veganism. Studies such as those by Martelli and De Canio (2021) emphasize

✉ Rennan Carvalho dos Santos
rennancarvalho0511@gmail.com

Marianny Jessica de Brito Silva
marianny.brito@ufpe.br

Marconi Freitas da Costa
marconi.fcosta@ufpe.br

Karen Batista
karen.batista@hotmail.com

¹ Postgraduate Programme in Management, Federal University of Pernambuco, Brazil, Recife

² Department of Management, Federal University of Pernambuco, Brazil, Caruaru

that, even with the growth of veganism in number, they still represent a small niche. Therefore, the exponential growth in sales of vegan products is not entirely attributable to the growth of people who follow veganism. Compacting on the same argument, Widyanto and Agusti (2020) emphasize the possible change in the consumer profile in relation to the intention to consume Cruelty Free products in cosmetic products.

Concerning the intention of this consumer, paying attention to factors such as the sensitivity of the consumer to his/her consciousness in the environment to which he/she is inserted, recent studies such as those presented by Costa et al. (2021) list some factors that should be considered in the purchase intention of green products, as is the case for vegan cosmetic products. Among these, social media can be highlighted. Scholars such as Bedard and Tolmie (2018) and Pop et al. (2020) were responsible for investigating the relationship between these social media and the consumer purchase intention of green products, obtaining as a result the relevance of external factors, such as such media in the formation of consumer motivation and the purchase of green cosmetics. Other researchers, such as Napoli and Ouschan (2020), have focused their studies on the intentions of these consumers of vegan products and paid attention to the consumer's relationships with these communication channels.

Still immersed in the digital environment, authors such as Weismueller et al. (2020) discuss the impact of the source credibility of the advertising on the consumer's purchase intention in the face of social media. According to the study, the subdimensions of source credibility, which are the source attractiveness, source trustworthiness, and source expertise, significantly increase the consumer's purchase intention. This result corroborates the findings of Silva et al. (2020), who also discuss important factors in the online engagement process and the role of opinion makers, known as digital influencers. Digital influencers are "individuals who have established a likable online personality by sharing their daily lives, tips, and tricks on social media" (Ki et al. 2020, p. 3).

Although there may be evidence of a possible conceptual relationship between the constructs discussed above, until the time of construction of this research, the concepts were not investigated together. The literature on the purchase intention of vegan products has attracted significant interest in academia (Martelli and De Canio 2021), as has the social media use (Jenkins-Guarnieri et al. 2013) and source credibility (Ohanian 1990; Phua et al. 2020). However, in this production, the need to analyze the latter constructs for the context of purchase intention of vegan products and this relationship in a joint manner is also highlighted, thus demonstrating a character of relevance and originality to the proposal of this research.

Given the aforementioned theoretical contribution, we carried out a study with followers of Brazilian fashion and beauty digital influencers, to analyze the relationship between source credibility and the use of social media in the purchase intention of vegan products endorsed by these digital influencers on Instagram. Instagram is a social media that has shown rapid growth and that companies use to reach different audiences (Djafarova and Trofimenko 2019). In 2022, there were 1.28 billion monthly active users on Instagram, and by 2025, it has been forecast that there will be 1.44 billion monthly active users (Statista 2023).

The remainder of the paper is organized as follows. First, the literature review and hypothesis development are presented. Second, we explained the research method, including the selection of the digital influencers and analysis procedure. Next, the findings and analysis are presented and, finally, we conclude with the theoretical and practical implications of the study, followed by limitations and directions for further research.

2 Theoretical framework

2.1 Purchasing intentions of vegan cosmetics

The concept of ethical beauty emerged in the 1980s with the idea of providing the consumer with less harmful products and respecting ecological guidelines, thus becoming a global trend (Conelly 2013). For Starr (2009), the concept of ethical consumption is linked to choices of purchase (and use) of products guided by a certain moral sense in the face of what is considered right, good, wrong and not only analyzed in an egocentric way. Thus, these products are directly related to nonharmful ingredients, natural fragrances, and ethical factors and are not tested on animals. Within this macro group, there are several labels, but the vegan label has stood out in academic research in recent years (Phua et al. 2020; Martinelli and De Canio 2021).

The vegan movement is defined as a philosophy of life that seeks to exclude all forms of animal exploitation from the daily life of practitioners, thus dispensing with all products derived wholly or partially from animals (Vegan Society 2021). Currently, the search for information on vegan and animal-free products has grown considerably, as indicated by data from Google Trends (2019), which shows an increase of 131% in the search for the word "vegan" between 2014 and 2019. The relevance of the behavior of this consumer in relation to cosmetics is also highlighted, as they have sought more information regarding the origin of the purchased product and especially if it was tested on animals or if it has ingredients of animal origin (Nielsen 2019).

In academia and specifically in the field of management, the first publication was recorded in the 1990s by

Beardsworth and Keil (1991), and according to Batista et al. (2021), in the following years, there was a slow growth in the number of publications, with a total of only 14 publications on the subject. Within this amount, it was counted that 9 articles are from 2020, which demonstrates the growing interest in research in recent years. Regarding the themes addressed in these studies, the following approaches were found: motivations, beliefs, values and attitudes of vegan consumers (Beardsworth and Keil 1991; Moreira and Acevedo 2015; Li et al. 2020); relationship between vegan and animal advocates (Bertuzzi 2020; Ploll and Stern 2020); religion, religiosity and veganism (Raggiotto et al. 2018; Lestar 2020; Li et al. 2020); celebrities (Phua et al. 2020); and bloggers (Napoli and Ouschan 2020).

Based on the studies listed and the growth numbers of this industry, there is a gradual expansion, and not only the followers of vegan philosophy have consumed this type of product, as was observed by Martinelli and De Canio (2021). These authors believe that the intensification in the search for this type of product can be fueled by the dissemination and media coverage of the lifestyle of various opinion leaders based on the ethics of consumption in social media (Martinelli and De Canio 2021).

Such opinion makers and their communication channels are also the targets of specific studies from the consumer behavior perspective to attest to source credibility and the possible endorsement of these influencers. Studies such as those by Phua et al. (2020) attempt to identify the effects of endorsements by celebrities on vegan products and their results on consumer behavior. Other authors also discuss the importance of using channels such as blogs to communicate trends in vegan products as well as the ownership of communicators in this discourse (Napoli and Ouschan 2020). Thus, social media can be great allies in the motivation and intention to buy vegan products (Pop et al. 2020). Since endorsement has the power to influence the consumers behavioral intention, it seems pertinent to discuss which factors could precede the purchase intention of the investigated object (Djafarova and Rushworth 2017).

2.2 Source credibility

Source credibility theory arising from advertising, more specifically from celebrity endorsements literature, which has been studied in broadcasting, marketing, and advertising since the 1960s (Todd and Melancon 2017) and received contributions from theories of communication, psychology, sociology, and marketing (Halder et al. 2021). The basic assumption of this theory is that people are more likely to be persuaded when the message source is credible (Silalahi et al. 2021). Source credibility can be understood as the sum of positive characteristics that can affect the reception by

the receiver (in this case, the consumer) of the transmitted message (Ohanian 1990). Despite being a topic much discussed in the literature, it has been adapted and applied in current contexts to investigate not only buying behaviors (Djafarova and Trofimenko 2019; Hsieh and Li 2020; Muda and Hamzah 2021) but also in research that explores even the influence of source credibility on attitudes toward vaccines (Jennings and Russell 2019) and adoption of COVID-19 prevention strategies (Adeitan et al. 2021).

Previous studies have devoted themselves to studying the source credibility and developing scales for its measurement, such as the studies by McCroskey (1966), Applbaum and Anatol (1972) and DeSarbo and Harshman (1985). Such studies were a reference for the scale constructed and validated by Ohanian (1990), which was used in the present study. This measurement scales have been adapted to include the context of social media, especially with regard to the digital influencers credibility. Recent studies have investigated the source credibility of digital influencers and their effect on travel intention (Yilmazdoğan et al. 2021), brand credibility (Leite and Baptista 2021) and purchase intention (Weismueller et al. 2020; Sokolova and Kefi 2019). In the internet era, people are increasingly looking for information about products they want to buy (Ismagilova et al. 2020). Digital influencers promote products, not only through advertising paid by companies, but also through the practice of product reviews, in which influencers opine about the product they tested and shared their perceptions with their followers.

Zha et al. (2018) define source credibility in the social media context as the degree to which content producers (or digital influencers) are considered reliable, well-informed and credible by their audience. In this sense, the credibility of the person who conveys the message has great influence on the public, who shares similar values and attitudes (Sokolova and Kefi 2019), as is the case of digital influencers and their followers. Source credibility influences the acceptance of advertising, and recent studies indicate that social media is not different since ads in these media developed by influencers are seen as more reliable than traditional media ads designed and executed by organizations (Shareef et al. 2019).

Source credibility, proposed by Ohanian (1990), is a multidimensional construct divided into three subdimensions: expertise, trustworthiness and attractiveness. Expertise can also be understood as authority, skillfulness or qualification (Ohanian 1990), i.e., it indicates that the source has sufficient specific knowledge and skills on the subject being addressed (Yilmazdoğan et al. 2021). Expertise is important because it indicates how much endorsement is considered a source of valid information (Breves et al. 2019). Digital influencers are seen by their followers as experts in the field they work in, as they dedicate their careers to a specific area and, therefore, have knowledge and experience about

products in their field (Leite and Baptista 2021). Because they are experts in their field, influencers are considered reliable (Colliander and Marder 2018).

Trustworthiness refers to the degree of confidence of the message receiver and the acceptance of the source level and its message (Ohanian 1990). It is usually associated with the honesty and integrity of the endorser (Breves et al. 2019). Message effectiveness increases when the source is considered reliable (Keel and Nataraajan 2012). Digital influencers are considered trustworthy by their followers, because they usually use and test products before recommending them, which is valued by consumers (Leite and Baptista 2021). Thus, if the digital influencer is considered an expert and trusted by their audience, they are likely to influence the attitude and behavior of their audience, including their purchase intention (Sokolova and Kefi 2019). In the study by Wang and Scheibaum (2017), trustworthiness was the most important dimension of source credibility (Baudier et al. 2023).

The attractiveness of the source is the degree to which it is perceived as elegant, sexy, and beautiful by its audience (Weismueller et al. 2020). It concerns physical appreciation, the impression that a person makes on others. When a message is conveyed by a source considered attractive, the possibility of a positive impact on the opinions and attitudes of individuals is greater (Yilmazdoğan et al. 2021). Attracting communicators are more appreciated and positively influence the products with which they are associated (Ohanian 1990). Digital influencers of fashion and beauty, for example, can be considered attractive because of the appeal of the sector (Leite and Baptista 2021), which facilitates the communication and acceptance of the message by followers. Consumers are more likely to be influenced when they want to identify with the source, and the nicer the source is, the more consumers will identify with it. Therefore, the more attractive the source, the more persuasive it will be (Silalahi et al. 2021). The source attractiveness of digital influencers is also related to their ability to demonstrate empathy and benevolence (Baudier et al. 2023).

The study by Sokolova and Kefi (2019) found significant and positive relationships between credibility of beauty and fashion influencers and purchase intention. The results of the study by Weismueller et al. (2020) indicate that source attractiveness, source trustworthiness, and source expertise significantly increase purchase intention. In addition, the number of influencer followers positively affects the attractiveness and trustworthiness of the source, as well as purchase intention. Leite and Baptista (2021) investigated the effect of the credibility of digital influencers on the intention to buy products from the brand they endorse. The results of the study indicate that the relationship that the influencer builds with his audience has a greater effect than the source credibility. Yilmazdoğan et al. (2021) identified that the expertise and trustworthiness of Instagram digital

influencers impacted followers' intention to travel. Breves et al. (2019) analyzed the suitability between influencer and endorsed brand. The results showed that this suitability is important for the influencers' expertise and trustworthiness. A stronger influencer-brand fit increases consumers' brand attitudes and behavioral intentions through influencer credibility.

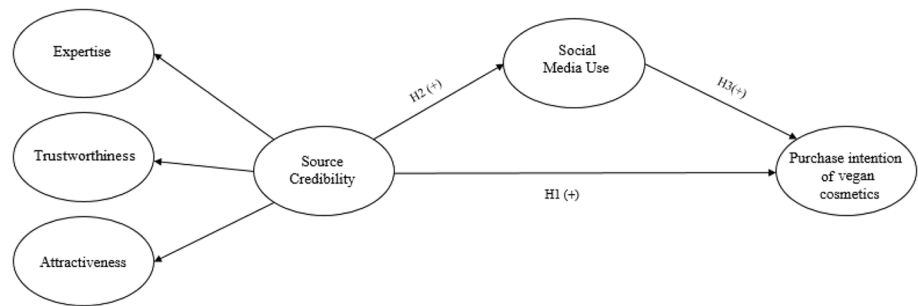
Credibility also affects what content people choose to consume or ignore on social media (Sokolova and Kefi 2019). The credibility of the digital influencer can increase consumer confidence and reduce the perceived risk of purchasing the product (Chung and Cho 2017). In the case of vegan cosmetics, credibility is an important factor, as it requires confidence that the brand does not actually use any animal ingredients, and the credibility of the digital influencer can help in this regard. In the model developed in this study, the impact of the credibility of digital influencers on the intention of their followers to buy vegan cosmetics was tested. It is assumed that by considering that the digital influencer has expertise and is reliable and attractive, the follower can be influenced to buy the indicated or advertised product. In this sense, the following research hypothesis was developed:

H1: Source credibility directly and positively influences the purchase intention of vegan cosmetics.

2.3 Social media use

"Social media are applications, services and systems that allow users to create, remix and share content" (Junco 2014, p. 6). Since they were introduced in their initial form in 1997, several types have emerged, and there is currently a significant number of social media (Boyd and Ellison 2007). Over time, these online communication tools have improved and evolved to rely on different resources. The social network MySpace was the first to become popular among young people and was later replaced by Facebook. At the same time, other social media emerged, such as Twitter and YouTube, which began to attract users to share and consume media (Jenkins-Guarnieri et al. 2013). Social media have developed and are now part of the identity of people, whether individual identity (Grasmuck et al. 2009) or social identity (Manago et al. 2008). They are also an important way for the development and maintenance of affective bonds and social connections because through these, it is possible to communicate with friends and family (Ellison et al. 2007).

Instagram, the social media chosen for this study, was created in 2010, and in 2019, it reached the number of more than one billion active user accounts, and it is estimated that 90% of users follow at least one commercial account (Doney et al. 2020). Instagram has a visual appeal of the images and videos that are shared, which is important for the promotion

Fig. 1 Proposed theoretical model.

and sale of beauty products, in addition to being one of the social media most used by digital influencers (Almeida et al. 2018). In this sense, this study sought to investigate the influence of the social media use on the purchase intention of vegan cosmetics. The social media use refers to the “degree to which social media is integrated into the social behavior and daily routines of users, and the importance and emotional connection for this use” (Jenkins-Guarnieri et al. 2013, p. 39).

Recent studies have found that the messages conveyed on social media increase the desire to buy (Wang et al. 2012), in addition to the interactions between users directly affecting consumer purchasing decisions (Pop et al. 2020). Digital influencers also play an important role in the influence of purchases through social media, since consumers tend to rely more on green brands based on experiences published on social media (Kang and Hur 2012). Social media are perceived as reliable and useful by consumers (Rauniar et al. 2014), and the endorsement of celebrities and digital influencers is considered more reliable than traditional media advertising (Roy et al. 2021). In this sense, it is expected that the credibility of the digital influencer influences the social media use, and therefore the following research hypothesis was developed:

H2: The use of social media is directly and positively influenced by source credibility.

Social media are an important source of information about the products that consumers seek (Heinonen 2011). The interactions of social media users affect their purchase decisions because consumers seek to resemble their peers, as well as the amount of time spent searching for products (Wang et al. 2012). Bedard and Tolmie (2018) found that the social media use positively influences green purchase intention, and Murwaningtyas et al. (2020) identified that the credibility of celebrities has a positive impact on the intention of organic cosmetics through Instagram. Thus, the present study aimed to investigate whether the social media use influences the purchase intention of vegan cosmetics endorsed by digital influencers on Instagram. Therefore, the following research hypothesis was established:

H3: The social media use directly and positively influences the purchase intention of vegan cosmetics.

2.4 Propositions of the theoretical model

Based on the development of the hypothesis resulting from the construction of the theoretical framework, this study proposed the following theoretical model represented in Fig. 1.

3 Method

3.1 Research characterization

Initially, a bibliographic survey was conducted in several academic portals, such as Science Direct, SPELL, IEEE, Emerald, Capes Journals and Google Scholar. In the field research phase, to understand the purpose of investigating the influence of independent variables on the dependent variable, we used the online survey research strategy (Leeuw et al. 2008). Then, for data collection, we used the cross-sectional survey method, as Churchill (1979) recommends, and Structural Equation Modeling (SEM) was adopted to analyze the relationships between the variables (Kline 2011).

3.2 Population and study sample

The study focused on a Brazilian population because of the importance and relevance of evaluating the consumption behavior of emerging countries with a great impact on the worldwide consumption of cosmetic products, such as Brazil (Forbes 2020). The study population consisted of Brazilian individuals over 18 years old since Brazilian citizens are only qualified to practice all acts of civil life from the age of 18. Another characteristic inherent to the population of this study is that individuals should have an active account on Instagram. Given the diversity of media available to users (Kietzmann et al. 2011), from which influencers emerge (Abidin 2016; Juntiwarakij 2018), we choose Instagram. According to Ihsanuddin and Anuar (2016), this platform allows the production, editing and sharing of photographs

Table 1 List of digital influencers

Name of the digital influencer	Profile	Number of followers (millions)
Gabriela Sales	@ricademarre	4.7 M
Camila Coutinho	@camilacoutinho	2.9 M
Bruna Santana Martins	@niinasecrets	3.5 M
Camila Coelho	@camilacoelho	9.5 M
Marina Saad	@marisaad	3.7 M
Thássia Naves	@thassianaves	3.8 M

and videos, in addition to being in the national ranking of the most accessed social networks in Brazil, which emphasizes the relevance of choosing it.

In addition, for individuals to be able to compose the population of this study, it was also considered prudent for them to be followers of at least one digital influencer, following the fashion and beauty of Brazil, on their personal Instagram profile. Within the universe of national influencers, we decided to select the six mega influencers (Table 1) because they all have more than 1 million followers (CMS Wire 2018) and call themselves fashion and beauty influencers. The "Other" option was also available, where the interviewee could choose any other influencer who inspired him/her within the same segment."

Among the sampling options legitimized by the academy, the nonprobabilistic sampling method by the judgment was selected, in which, in the case of an infinite population or contexts of constant change, the statistical study can be performed with the collection being made from part of a population, which is accepted as a sampling. The nonprobabilistic sampling model considers the personal judgment of the researcher rather than selecting the sampling elements (Malhotra 2011). In other words, there is no need to calculate to define the sample size that is expected for a probability sample.

The sample size was defined based on the guidance of Hair et al. (2015) to have at least five respondents for each question in the questionnaire and follow the recommendations of Tanaka (1987) for the sample size with the use of SEM so as not to exceed 400 respondents. Thus, in the initial sample, there were 215 participants, but the final number was reduced because 25 questionnaires were not approved after the analysis of the filter questions, and the final sample consisted of 190 participants ($N=190$).

3.3 Procedure for data collection

The primary data were collected using an online survey collection instrument composed of closed questions (Hair et al. 2015). In addition, this questionnaire was developed

based on several authors using scales already validated. We opted for the Vegan Cosmetic Products Purchase Intention scale, adapted from Toni and Mazzon (2014). For the other variables of this study, the social media use scale was adapted from Jenkins-Guarnieri et al. (2013), and source credibility was adapted from Ohanian (1990). Table 2 presents a summary of what the collection instrument represented, as suggested by Creswell (2010).

The survey contained 22 items for response to the scales, in addition to questions about the respondent's profile. The constructs purchase intention of vegan cosmetic products, source credibility, and social media use were measured using a Likert scale, with a score ranging from 1 (strongly disagree) to 7 (strongly agree).

A pretest was applied with 20 respondents, all of whom were masters and doctors in the field of management, to evaluate the robustness of the predetermined instrument, as recommended by Marconi and Lakatos (2010). After confirming the clarity and foundation of the questionnaire, the collection was initiated via the Google Form questionnaire. For this purpose, a link was sent to the respondents available on the WhatsApp, Instagram, and Facebook platforms.

3.4 Data treatment

We used the statistical software SPSS and AMOS to analyze the data. First, we analyzed the descriptive statistics: mean, frequency, standard deviation, and coefficient of variation (Hair et al. 2015). We used Cronbach's alpha to assess the scales reliability, and an index starting at 0.6 was considered acceptable (Hair et al. 2015). We used Structural Equation Modeling (SEM) to analyze the relationships between the variables and test the hypothesis. For the reliability and validity of the constructs included in the measurement model, we used confirmatory factor analysis (CFA). Subsequently, we analyzed the structural model to verify the fit adequacy indices to test the adequacy of the model (Hair et al. 2015).

4 Presentation and analysis of results

4.1 Profile of respondents

To characterize the demographic profile of the sample, we collected data regarding the following variables: gender, age, marital status, monthly income, number of individuals who shared the same residence and education level.

Initially, we performed a survey using the basic descriptive statistics of frequency (f) and percentage (%). Thus, we found that of the 190 respondents, the majority were women (80.5%), 46.3% had completed higher education, and 67.9%

Table 2 Items of the collection instrument

Construct	Items (dimensions and variables)	Code
<i>Source Credibility</i> Translated from Ohanian (1990)	<i>Dimension 1: Expertise</i>	EXP01
	Expert	EXP02
	Experienced	EXP03
	Knowledgeable	EXP04
	Qualified	EXP05
	Skillful	TRU01
	<i>Dimension 2: Trustworthiness</i>	TRU02
	Dependable	TRU03
	Honest	TRU04
	Reliable	TRU05
	Sincere	ATRA01
	Trustworthy	ATRA02
	<i>Dimension 3: Attractiveness</i>	ATRA03
	Attractive	ATRA04
	Elegant	ATRA05
<i>Social media use</i> Translated and adapted from Jenkins-Guarnieri et al. (2013)	Beautiful	
	Classy	
	Sexy	
	<i>Dimension: Integration into personal routines</i>	SMU01
	I like to check my social media account	SMU02
<i>Purchase Intention of Vegan Cosmetic Products</i> Adapted from Toni and Mazzon (2014)	I do not like using social media*	SMU03
	Using social media is part of my daily routine	SMU04
	I respond to the content that others share using social media	
	There is a high probability that I buy vegan cosmetic products advertised by (name of digital influencer)	INTVEG01
	I would recommend the vegan cosmetic products announced by (name of the digital influencer) to my friends or relatives	INTVEG02
	The vegan cosmetic products announced by (name of the digital influencer) would be a good purchase	INTVEG03

were single. The other demographic variables were analyzed using the mean and standard deviation for greater numerical precision. Thus, we found that the mean age of the respondents was 30.53 years with a PD of 9.543 years, the average family income was R \$ 8431.72 with a PD of R \$ 7279.188, and the number of individuals sharing the same household was approximately three inhabitants per respondent, with a per capita income of R\$ 2810.57. We also calculated the coefficient of variation (CV) to characterize the data dispersion in terms of its mean value.

Another point identified in the analyses was the preferences of influencers of the fashion and beauty of this consumer. The results show that the influencer of Fashion and Beauty highlighted in this sample was Camila Coutinho—@camilacoutinho (32.6%). The other influencers were indicated in the following proportion: (23.2%) @ricademarre, (3.7%) @niinasecrets, (3.2%) @camilacoelho, (4.7%) @marisaad, (2.1%) @thassianaves, and (30.7%) other digital influencers. In the category others, we observed that local digital influencers (Macro, Micro and Nano Influencers) emerged from the most diverse country regions and male fashion and beauty digital influencers.

According to the Vegan Society (2021), veganism is a philosophy of life that seeks to exclude all forms of animal

exploitation from the daily life of practitioners, thus dispensing all products derived wholly or partially from animals. Based on this statement, another question arose for the respondents concerning the philosophy of life adopted. The following results were obtained: (7.9%) ovolactovegetarian, (0.5%) lactovegetarian, (1.1%) ovovegetarian, (1.6%) strict vegan, (0.5%) vegan, (85.8%) none of the options and (2.6%) others. The result of 85.8% of the responses opting for the item “none of the options” demonstrates the significant number of respondents who do not live in the philosophical universe of veganism or the other variations.

In general, the majority of respondents can be characterized as single women of around 30 years of age, with a high degree of education. The average income per capita salary was approximately R\$ 2810.57 (\$ 541.87), which represents a little more than the national minimum wage of R\$ 1302.00 (\$ 251.02) (Ministry of Economy 2022), giving this consumer an advantage in their purchasing power. Another relevant data for the research is the respondents' interest in digital influencers of the digital universe, especially Instagram. Additionally, 85.8% of the respondents are not following a lifestyle of veganism or any of its variations, which corroborates the findings of Martelli and De Canio (2021)

when emphasizing the growing consumption of vegan products by non-vegans.

4.2 Measurement model

As indicated by Maroco (2014), to verify the existence and removal of outliers from the sample, we used the Mahalanobis distance ($D2$), but no observation showed high values that were necessary to remove from the analysis. Subsequently, we performed factor analysis of the measurement model. The results initially found, with the first rounds of the measurement model analysis, suggested the removal of only one item from the constructs so that the model could achieve better fit indices. Thus, we removed item SMU02 from the construct social media use. After refining the composition of the items of the constructs, we performed a new analysis, and the indices resulting from the measurement model were $\chi^2/df(299.517/176) = 1.702$ ($p = 0.001$); GFI = 0.875; IFI = 0.976; TLI = 0.971; CFI = 0.976; NFI = 0.944; PCFI = 0.818; RMSEA = 0.061; PCLOSE = 0.066; ECVI = 2.167; and MECVI = 2.243.

Thus, it is possible to affirm that the values present a good fit of the model. Reliability (Cronbach) and composite (CC) analysis were used, as well as the mean variance explained (AVE), to investigate the level of adequacy of the scales of each construct. Cronbach's alpha above 0.6 allows the internal consistency of the items to be affirmed on each scale. Table 3 shows that all constructs have values higher than this rate. The composite reliability also has the definition of an index equal to or greater than 0.7 (Hair et al. 2015), which is achieved by all constructs, according to Table 2. The calculation of the mean and standard deviation of the constructs was performed for the variables that were created using the summated scale for this purpose.

Reliability (Cronbach's alpha) and composite reliability (CC) were used, as well as the mean variance (AVE). The Cronbach's alpha values for all the constructs studied were above 0.6, thus showing internal consistency of the items (Hair et al. 2015). Still considering reliability, the composite reliability indices (CC) were evaluated, which to be considered in desirable format should have values greater than 0.7, following the recommendations of Maroco (2014) and Hair et al. (2015). It is possible to observe that the social media use construct only achieved an acceptable value of 0.650.

Table 3 shows the mean and standard deviation (SD) measures of responses to the variables, where the Likert scale from 1 to 7 was considered. For this purpose, it was necessary to create composite variables using the summated scale, where the items belonged to each construct in a single variable. Thus, when verifying the mean of the variables, there was a tendency to agree with the assertions, since it ranged from 5 to 6.

Table 3 Descriptive statistics, reliability and validity

Variables	Mean	SD	Cronbach	WC	CVA
Trustworthiness (TRU)	5.342	1.740	0.984	0.984	0.751
Expertise (EXP)	5.486	1.702	0.974	0.972	0.878
Attractiveness (ATRA)	5.473	1.609	0.952	0.952	0.666
Social Media Use (SMU)	5.907	1.082	0.641	0.650	0.384
Purchase Intention of Vegan Products (INTVEG)	5.328	1.466	0.875	0.881	0.713

CC composite reliability, AVE mean extracted variance, SD Standard deviation; CC Composite reliability, AVE Mean extracted variance

Table 4 Fornell-Larcker matrix

Variables	TRU	EXP	ATRA	SMU	INTVEG
TRU	0,751	0,740	0,654	0,020	0,072
EXP	0,860	0,878	0,812	0,051	0,059
ATRA	0,809	0,901	0,666	0,037	0,025
SMU	0,142	0,225	0,193	0,384	0,086
INTVEG	0,268	0,242	0,157	0,293	0,713

The values of the AVEs are in the diagonal of the table (in bold), the values below the diagonal are the correlations, and the values above are the shared variances (squared correlations)

For Kline (2011), it is important to evaluate the validity of the scales and constructs; thus, three validities were performed, namely, factorial, convergent and discriminant. In the factorial, the values represented by the standardized coefficients for each item of the constructs are taken as a base, where all had coefficients above 0.5. Conversely, for the convergent validity, the mean variance values were used as a parameter, which for Kline (2011) are defined as values above 0.5, as shown in Table 4. Therefore, based on the AVE values, it is possible to state that the convergent validity was met, although the value obtained for the construct Social Media use only shows an index considered acceptable of 0.384.

In the case of discriminant validity, Fornell and Larcker (1981) suggested that the AVE of each construct should be compared with the shared variance. Thus, it was evaluated whether the items of a construct did not present high correlation with other constructs that are theoretically different. Thus, the AVE values should remain above the shared variances (Fornell and Larcker 1981). As can be observed in Table 4, the AVE values were above the shared variances, and the discriminant validity is within the recommended values, except for the AVE of the attractiveness dimension (0.666) with the shared variance of the expertise dimension

Table 5 Model fit indexes

Indexes	Results	Criteria
χ^2/GI (308.437/180)	1.714	[1; 2] Very good fit
p value	0.001	> 0,05 Accept fit*
GFI	0.873	> 0.80 Acceptable adjustment
IFI	0.975	> 0.95 Very good fit
TLI	0.971	> 0.95 Very good fit
CFI	0.975	> 0.95 Very good fit
IFN	0.942	> 0,90 Ajuste bom
PCFI	0.836	> 0.80 Acceptable adjustment
RMSEA	0.061	< 0.08 Very good fit
PCLOSE	0.056	> > 0.05 Very good fit
IVCI	2.172	The lower the better
SEMI	2.243	The lower the better

*Large samples are more sensitive to significance in the p value

(0.812), but these dimensions are part of the same construct (source credibility).

4.3 Analysis of the structural model and discussion of hypothesis

In the second step of Structural Equation Modeling (SEM), the measurement model was evaluated by evaluating the validity of the structural model and incorporating relationships between the latent variables into the model. For this purpose, the adjustment indexes were recalculated and are presented in Table 5.

Therefore, it is possible to note that the values obtained show adequate adjustment indexes, according to the level

recommended by Hair et al. (2015). In addition, the hypothetical model was evaluated from the trajectory diagram with the aid of standardized regression weights (β) and p values to evaluate the influence of independent or predictor variables on the dependent variables in a model similar, as shown in Table 6. Thus, it can be verified by the p value that all four hypothesis were confirmed, namely, H1, H2 and H3, since they had values lower than 0.5.

Thus, to provide a better graphical visualization of the relationships between the hypothesis and the constructs analyzed, Fig. 2 shows the relationships of the theoretical model with their respective coefficients and significance.

According to the model and the results presented in this study, H1 was supported. Thus, it can be said that the intention to buy vegan products from consumers is influenced by the source credibility of their digital influencers, which corroborates the studies by Phua et al. (2020). In this study, the effects of the endorsement of celebrities on vegan products and their results on consumer behavior were identified. However, with the results of the current research, it can also be stated that, similar to celebrities, digital influencers also endorse and credit vegan cosmetic products, awakening the consumer the intention to buy them.

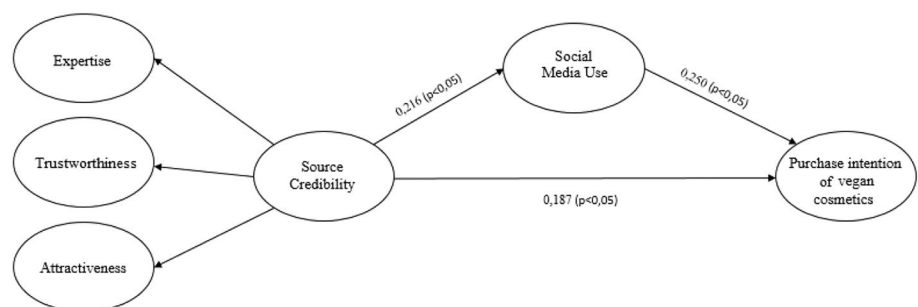
As observed in the model, Source credibility has three subdimensions, which together represent and complement the examined theory. Thus, we can also corroborate the studies by Leite and Baptista (2021), which show the significance of the expertise of these opinion makers as being identified by this consumer as experts in the field, since they have ownership when talking about issues related to the food industry cosmetics. Moreover, they were also considered reliable, which agrees with the studies of Colliander

Table 6 Hypothesis test

Hypothesis	Standardized coefficient	Non-standardized coefficient	SE	CR	p	Status
H1(+): CRED→INTVEG	0.187	0.169	0.071	2.380	0.017	Supported
H2(+): CRED→MDS	0.216	0.112	0.049	2.311	0.021	Supported
H3(+): MDS→INTVEG	0.250	0.433	0.172	2.515	0.012	Supported

$p < 0.05$; marginal significance = $p < 0.10$; SE standard error; CR critical ratio

Source: Prepared by the Author (2020)

Fig. 2 Theoretical model with coefficients.

and Marder (2018), since they usually use and test products before recommending them, which is valued by consumers (Leite and Baptista 2021). Therefore, if the digital influencer is, in addition to being an expert, a source of reliability for their audience, it will influence their purchase intention from the follower (Sokolova and Kefi 2019). Finally, these fashion and beauty influencers can also be considered attractive, an aspect that converges with the thoughts of other authors (Leite and Baptista 2021). Thereby, this attribute facilitates the communication and acceptance of the message by followers and enhances the purchase intention of the products endorsed by these professionals (Silva et al. 2020).

Regarding H2, “The social media use is directly and positively influenced by source credibility” obtained a $p < 0.05$, which is therefore confirmed. This finding corroborates the studies by Jenkins-Guarnieri et al. (2013), in which they state that the social media use concerns the level of integration to which the media is associated with the social behavior of the consumer and their routine, in addition to the importance and emotional connection with the digital influencer for this use. For this purpose, the use of Instagram, as advocated by Almeida et al. (2018), offers a special connection to the consumer with its influencer because the platform has a visual appeal among those involved and a high rate of promotions of beauty products. Thus, the consumption intention is also affected by the high degree of connectivity of this receiver by its communicator, since the endorsement of these influencers is seen as more reliable than traditional media advertising (Roy et al. 2021).

Regarding hypothesis H3, which assumes that the social media use directly and positively influences the purchase intention of vegan cosmetics, its confirmation was considered, starting at $p < 0.05$. This result agrees with the studies by Bedard and Tolmie (2018) and Murwaningtyas et al. (2020), since in both studies, the results showed the relevance of the social media use in the relationship of purchase intention of green products, which applies to the reality of vegan products. Another important finding was corroborated by the studies by Napoli and Ouschan (2020), which presented a perspective for vegan. Thus, this study goes beyond the results obtained previously and adds the relevance of these media to all consumers of vegan products, whether vegan or nonvegan.

5 Conclusions

Studies on marketing and consumer behavior have grown, as have studies on consumer purchase intent, especially regarding vegan products, due to the change in consumer behavior due to issues related to sustainability and consumer ethics. This study sought to highlight the peculiarities of consumer behavior of vegan cosmetic products and the influences on

their intention to buy vegan products endorsed by digital influencers. For this purpose, the social media use and the source credibility were evaluated, which positively influenced the intention to buy vegan cosmetic products. With this study, we contribute to the theoretical development of the topic and highlight practical implications about the endorsement of vegan products by digital influencers and how organizations can benefit from it.

5.1 Theoretical contributions and practical implications

Among the results achieved by this research, it is considered that both the social media use and source credibility, in its three subdimensions (Expertise, Trustworthiness and Attractiveness), demonstrate a certain influence on the purchase intention of vegan cosmetic products. Thus, this study contributes to the advancement of consumer behavior studies in some ways. Firstly, we highlighted the importance of influencers in the endorsement process of vegan cosmetic products, given that the consumer is attracted to the persona of the influencer, and confident in observing the use of such products in a reality relatively close to their own, or desired, and by deposit their beliefs in the expertise of this individual who has knowledge about the product offered.

Accordingly, the ability of these opinion makers to influence consumers in the intention to buy vegan cosmetic products was recognized, even if such items do not represent their life philosophies, in the case of nonvegan. Thus, the power of persuasion of these influencers in their field of action was demonstrated, taking their opinions and experiences to the consumer sharing their ideologies and beliefs with the consumer behavior that shapes the followers' beliefs and consumer behaviors. Secondly, although studies were found in the research databases that related social media and source credibility, as well as the source credibility and the intention to buy, these were not investigated in the context of vegan products and especially in the purchase intention by nonvegan. This is a growing market due to global changes in conscious consumption and its impact on the future of future generations. In short, the article fills a theoretical gap by identifying the impact of digital influencers on their followers' purchase intention to adopt vegan consumption, shaping their values and principles.

Regarding the practical contributions, the study provides strategic information for decision-makers to develop actions for the specific needs of this emerging consumer. The market for vegan products still does not dominate the cosmetics industry, but according to the data, there is a tendency for it to represent a significant portion of the purchases and purchase intentions of consumers in the coming years. Therefore, executives and marketing managers in the beauty area should think about the development of natural cosmetics

products, promoting them from digital strategies that involve digital influencers as aggregators of value to the communicated message. We were able to identify the potential of these endorsers in exposing vegan cosmetics to consumers with philosophies close to or far from veganism.

For practitioners, the study also allows reaffirms the relevance of the use of media channels by consumers as a source of information and inspiration, and organizations and their brands must develop effective digital presences, capable of being found by individuals and communicating with them in a way organic, taking them from attraction to apology. The use of digital influencers is a way to achieve this purpose, as these virtual actors act as bridges that connect brand and consumer (Silva et al. 2020), using expertise, attractiveness, and trustworthiness to indicate products, philosophies, and ways of life to thousands of followers.

5.2 Limitations and further research

Despite its innovative character, the limitations of the study should be mentioned as a criterion for the reliability of the research. We highlight the single cross section, which prevents the visualization of a temporality of the study that is able to evaluate the evolution of consumption behavior at different times of restrictions. So, we recommend that future research assess data trends across different time points. In addition, as the sample was not probabilistic it is not possible to generalize the results for the population under analysis, because the non-probabilistic sample does not meet the statistical criterion of randomness of the elements that compose the sample.

As an agenda for future research, we suggest the development of investigations that analyze other dimensions that make up digital influence in addition to source credibility, such as authenticity and fun personality. Other constructs can be used in conjunction with source credibility to analyze its influence on the purchase intention of vegan products, such as brand image, brand love and brand trust, which can mediate the relationship between source credibility and purchase intention. We also propose studies that evaluate the effective buying behavior of vegan products by consumers, also observing factors related to the consumer profile, such as activism, environmental awareness and green attitude. We recommend that future research evaluate other market niches linked to veganism, such as food, in addition to studies on pet-friendly experiences provided by organizations (i.e., hotels, restaurants).

Future research may explore the relationship between source credibility and purchase intention of vegan products in other social media, such as TikTok and Youtube, in addition to identifying whether there are differences in the relationship between the influence of digital influencers

and purchase intention in different social media. It is also interesting to investigate whether there are differences in the relationship between the influence and purchase intention of vegan products, as well as the relationship between the credibility of digital influencers and purchase intention between different age groups and between different genders. In addition, we encourage researchers from countries outside the WEIRD axis to carry out research on the subject, to understand how cultural and socioeconomic issues can influence the intention and purchase of vegan products. Experiments can be carried out with social media posts by digital influencers recommending products to identify the effects of exposure to advertising and indication of vegan products on consumers' purchase intention.

Author contributions Santos and Batista wrote the main manuscript text; Silva and Costa reviewed the manuscript.

Declarations

Conflict of interest The authors declare no competing interests.

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