

## **Animal Welfare Goods Consumption: May Intention-Behavior Gap Turns Into a Split?**

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### **Resumo**

Animal Welfare (AW) discussion regarding the relationship involving Consumption Intention ( and Consumption Behavior was chosen to be the main object of this study whose research field was laying poultry. The consumers' role of recognizing the AW goods value seems to perform a potential market solution for the imbalance between society pressure and producers resistance about adopting AW practices. In this context, the article brings the following research sentence: at what extent does AW Consumption Intention impact on AW Consumption Behavior? The work is underpinned by two main theoretic approaches: Animal Welfare Consumption and Theory of Planned Behavior (TPB) and adopts a quantitative strategy by utilizing Survey /Structure Equation Model to collect and to analyze the TPB attributes and Experiment/Logistic Regression to assess respondents' CB and its relationship to previous CI. The CI results complied adherently with the consulted literature, except for Subjective Norms, keeping out from the significance margin. TPB general model effect (R<sup>2</sup>) resulted in 69,5%, stating the TPB construct robustness. Logistic Regression results showed primarily a theoretical break when discharged AW CI as having a significant effect on AW CB. The work main finding brings up the concept of Intention-Behavior Split, a condition observed for AW eggs.

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**Keyword:** Animal Welfare, Consumption Intention, Consumption Behavior

### 1. Introduction

Animal Welfare is a quite relevant matter for several knowledge areas once there are specific technical and business involved questions able of being answered through scientific research (Yeates, 2017; Vanhonacker et al., 2012). AW Consumption Behavior discussion regarding the relationship involving Consumption Intention model was chosen to be this study main object.

Even it is not a recent theme, AW (as it is cited from now on) has been raised in importance over the last decades for either a substantial societal concern on the role of ethics through production and consumption chains or its theoretical similar approach with contemporary subjects like sustainability and social responsibility (Vanhonacker et al., 2012; Niamir-Fuller, 2016). This movement of discussing the food origin merits finds resonance in several research branches and encompasses diverse, manifold discussions over humankind role on protecting the environment, adjusting social relationships among different actors and increasing the concern on health and on wellbeing, which has been described as ethical food movement (Croney et. al, 2012).

The ethical food movement is related to ethical consumerism, a practice by which people get interested on how their food is produced, which elements were employed, how environment was impacted (including animals) and under which work conditions the employees were submitted (Croney et. al, 2012). A recurrent instance is presented by organic agriculture and livestock with their commendable features as chemical input decrease, soil conservation and underwater quality preservation (Scozafavva et al., 2020). Hermansen (2003), in this context, stands out society concern on how health and agricultural environmental impact lifts consumer's interest on organic practices and the producer's prestige for adopting them (Castellini et al., 2012).

It is correct mentioning that AW discussion has also disseminated dissent amongst its different surrounding stakeholders, especially when it comes to livestock producers which concern about raising incremental costs by adopting AW warranty conditions

(Costa et al., 2012; Wells et al., 2011; Goddard et al., 2006; Howel et al., 2016; Huertas, Gallo & Gallindo, 2014). In Europe, since the middle of the nineties, livestock producers and their commercial retailers have been confronted with world emergent AW subjects mainly managed by Non-Governmental Organizations (NGOs) whose purpose is to defend animals life quality and good ambience, especially those ones that make part of human diet and social living coexistence (Koerkamp & Bos, 2008). Some aspects of AW livestock producing method are criticized by traditional producers. Some of them highlight free range handling land increasing necessity and its indispensable deforesting in order to allocate the lesser density flocks (less animals per square meter) (Siegford, Powers & Grimes-Casey, 2008). Other common critics are worrisome productivity levels decreasing and bio sanitary control weakening.

Rausser, Sexton and Zilberman (2019) also depict controversies amongst ethical food movement and real environmental and AW effects. After them, the research about organic production, for instance, suggest a bigger soil carbon sequestration, a production cost increase and similar risk of pesticide contamination when compared to conventional food in terms of beyond allowable maximum concentration. Additionally, producers also usually state their concern on conventional to alternative production systems change because of the heavy financial migration costs, embedded technology systems invested values loss and technical livestock raising downgrade (Wells et al., 2010; Ventura, von Keyserlingk & Weary, 2015; Heleski, Mertig & Zanella, 2004).

In this context, Grandin (2014) states about a missing link between AW and society concern mainly due to the absence of the optimum (instead of maximum) production level determination. The author insists in his thought of deepening this discussion and finding the correct factor relationships in order to mitigate the deadlock through a mutually successful exit for both society and producers. The producers seem not to receive the necessary amount of information to comprehend the NGOs demands related to AW best practices adoption or even to organize strategies to adapt themselves to the new concepts requirements once their mindset has been historically directed to productivity and costs reductions by facing animals as mere production resources without assuming their sentience, this is, their conscientious capacity of experimenting sensations and feelings.

Nonetheless, there is a line of thought (Van Riemsdijk et al., 2017; De Graaf et al., 2016; Grandin, 2014; Vanhonacker & Verbeke, 2009) which considers consumption choices as a solution possibility for the clash between society and producers when it takes in account that consumers would naturally absorb the production costs increase of AW requirements attendance since they move towards a more conscious consumption perspective. In fact, the consumer's role of recognizing the AW goods value seems to perform an intelligent potential market solution once it would evidence a natural society movement of balancing the economic structures responsible for the production/consumption chain, excluding the need of governmental intervention at a higher extent (Grandin, 2014; Vanhonacker & Verbeke, 2009). However, such a proposition requires a complex comprehension of consumer's behavior towards the AW theory and practice changes, the relationship between purchasers' individual and surrounding partners Attitudes and their capacities/restrictions and also the ability of measuring the end consumer action in the supermarket shelves when confronted with

the decision among AW-friendly and regular products.

In summary, it is expected to the consumers to advance in demanding the companies more transparency regarding the sustainability of their practices before consuming goods and services so this movement make part of a wider interplay web focusing on a recursive concern on conscious practices (Anderson Jr., & Cunningham, 1972). Nonetheless, modifying Consumption Behavior practices is not considered an ordinary task since it involves a wide range of consumer's internal characteristics and environmental external factors. The literature points out different theories aiming at explaining Consumption Behavior and, even though, the results so far do not fulfill the found empirical gaps. In such a context and as a lens to get along with this premise of experimenting consumers' behavior towards AW change practices the study alludes to the Theory of Planned Behavior as a means of measuring AW Consumption Intention and Consumption Behavior.

Based on the previous information, this paper points out the AW Consumption Behavior impacting factors as its central spotlight regarding the societal/producers discussion, which claims for a study capable of finding solutions for this research area deficiency or inconclusiveness (Heise & Theuvsen, 2018; Busse et al., 2019). Therefore, the present work deals with AW Consumption Behavior phenomenon and introduces the following research sentence as its core problem: ***at what extent does AW Consumption Intention impact on AW Consumption Behavior?***

## 2. Theoretical References

This theoretical reference arrangement aims at depicting the author's comprehension of his research mainstay. Whilst Animal Welfare Consumption is presented as the work main guideline once its discussion engenders the research question, the classic Ajzen's Theory of Planned Behavior works on scrutinizing the Consumption Intention and Behavior intercourses within the study subject.

### 2.1 Animal Welfare and Animal Welfare Consumption

Farm animal welfare is a common concern on human criteria for raising, handling and slaughtering animal for commercial purposes (Kaupinen et al., 2010). The concept arises from a contemporary strengthening understanding about animal rights and deals on conditions under which they are submitted in the livestock production practices (Koknaroglu & Akunal, 2013; Rushen, Butterworth & Swanson, 2011). In general terms, there were three distinct initial features that separately dealt on AW: body and physical environment, animal welfare to the mind or to feelings and emotions and natural live living (Koknaroglu, 2008).

While some researchers highlighted the ambience aspects worrying with animal good physical conditions apt for providing well-being (Broom, 1991), there were point of views whose concern targeted psychological aspects to determinate required welfare

level (Duncan, 1996) and authors for whom analyzing the availability of natural living behavior whilst confinement was of major relevance (Kiley-Worthington, 1989).

In 1979, the British FAWC (Farm Animal Welfare Council) becomes the first public bureau to deal with animal welfare issues at a national importance level once it advised the Great Britain's Rural Affairs Minister. In its General Guidelines documents the historic *Five Freedoms* appeared. According to this document, farm animals had the right of being free of hunger and thirsty; discomfort; pain, injury and disease; impediments of expressing natural behavior; fear and distress (Clark, Potter & Harding, 2006).

More recently, a framework settled by the Welfare Quality® project (Veissier, Boutreau & Perny, 2010) can be considered as the most popular AW index (Vanhonacker et al., 2012). Scholars, practitioners and labeling accreditations systems, which deal on the matter, have widely used it when proposing AW-related discussions. Basically, it encompasses a four principles range, which could determinate what is normally cited as wellbeing general animal condition: good feeding, good housing, good health and appropriate behavior (Vanhonacker & Verbeke, 2009). Table 1 depicts the cited framework.

**Table 1**

*AW Quality Project Framework*

Principles	Criteria
Good Feed	1. Absence of prolonged hunger
	2. Absence of prolonged thirst
Good Housing	3. Comfort around resting
	4. Thermal comfort
	5. Ease of movement
Good Health	6. Absence of injuries
	7. Absence of disease
	8. Absence of pain induced by management procedures
Appropriate Behaviour	9. Expression of social behaviors
	10. Expression of other behaviors
	11. Good human-animal relationship
	12. Absence of general fear

Veissier, Boutreau & Perny. (2010).

The good feeding principle comprises two other criteria: absence of prolonged hunger and absence of prolonged thirst. These elements concern on supplying animals' basic physiology like ready access to fresh water and a diet to maintain full health and vigor (Koknaroglu & Akunal, 2013). Beyond this, it protects them against farm livestock practices as hens forced molt. In turn, good housing principle splits into three new criteria. The first one, comfort around resting implies the conditions under which animals are submitted especially during resting. Laying hens narrow cages, sow uncomfortable crates and meat chickens light excess during the night are, in this context, criticized for disobeying such criterion.

Thermal comfort as good housing second criterion defends animals' right of not being submitted to distressing temperatures. Some practices like hens and chickens cage overcrowding (Howell et al., 2016) and bovine pre-slaughter overcrowding transportation reflect on a poorer ambience capable of decreasing AW by causing unnecessary suffering (Erian & Phillips, 2017). The last criterion related to good housing is ease of movement. In general, narrower cages, crates and stalls decrease their occupants' wellbeing (Uzea, Hobb & Zhang, 2011) and also impede them of depicting natural behaviors such as dust bathing, nesting and scratching (birds) and mud bathing and foraging (pigs) (Siegford, Powers & Grimes-Casey, 2008).

Good health is the third AW principle and is composed by other three criteria: absence of injuries, absence of disease and absence of pain induced by management procedures. (Miller, McNamara & Singer, 2006). The care about not producing injuries tells about preventing against abusive handling (piglets nose rings to avoid terrain foraging), inadequate facilities (hen/broiler footpad dermatitis lesion due to cages) (Rushen, Butterworth & Swanson, 2011; Gocsik et al., 2014) and insufficient veterinarian prophylaxis (cow/calf lameness).

The mention of absence of disease refers to an unhealthy general state caused by preventive veterinarian practices lack (Sinclair, Yan & Phillips, 2019). The avoidable illnesses or diseases manifested by abusive or neglected rearing are associated to practices, which do not comply with AW (Weible et al., 2016). Cow mastitis due to bad equipment conditions (McKendree, Tonsor & Wolf, 2018), equine muscular lesions provoked by exercise excess and broiler disease complications connected to absence of vaccination/medicines are common examples linked to this criterion (Clark, Potter & Harding, 2006).

Pain induced by management procedures is normally understood as an AW disorder related to ancient handling practices that impinge ache and suffering to the animal because of improper technique, cost reduction or only cultural habit (Cardoso, von Keyserlingk & Hötzel, 2016). The most common inducing pain practices are cattle dehorning without anesthetic (Grandin, 2014), hen beak trimming (Vanhonacker et al., 2012), old-day chick killing (Gangnat et al., 2018), calf tail docking, piglet castration without anesthetic, slaughtering without stunning and sheep mulesing (Wells, Sneddon, Lee & Blache, 2010; Baxter, Lawrence & Edwards, 2012).

Appropriate behavior is the last AW principle according to Welfare Quality and it encloses four criteria: expression of social behaviors, expression of other behaviors, good

human-animal relationship and absence of general fear (Bessei, 2018). The freedom of expressing natural behaviors deals with allowing animal to behave as they were in their natural habitat. Hen caging normally impedes the birds of dust bathing, scratching, wings stretching, nesting, walking, playing, turning, and preening (Vanhonacker et al., 2012; Costa et al., 2012). Pig stalling deprives them of walking, mud bathing and foraging (Gibson & Jackson, 2017).

Other behaviors get along with capacities and possibilities that are lost because of animal imprisonment condition (Christensen, Denver & Sandoe, 2019). The examples more common are not having a free and autonomous life in the nature, not being allowed to freely reproduce, not being allowed of maintaining close family contact (cow/calf early separation), not having right to sexual privacy (female commercial artificial insemination) (Weary, Ventura & von Keyserlingk, 2016).

Good animal-human relationship is the AW gauge for evaluating the interspecies conviviality (Goddard et al., 2006) and dictates that in general the human presence is not supposed to take fear to the animals (Bessei, 2018). Thus, animals should not feel threatened, coerced, constrained, or frightened before human beings (Costa et al., 2012). This criterion impedes bad treatment, violence, disproportionate strength use during livestock management and cruel slaughter (Li et al., 2018).

Finally, absence of general fear encircles the preoccupation of excluding all possible elements that could produce unnecessary animal fear or anguish like painful procedures, torture, depreciation, humiliation or forced drudgery (Vanhonacker et al., 2012).

It is possible to ascertain that Animal Welfare Consumption subject is a research field still in construction and, for such a reason, there is a more probable chance of finding thematic grouping papers instead of noticing a classical and well-developed theorization. After the literature analysis assembled in regard of AW Consumption, four different research guidelines were found and are described in the following paragraph: *AW Consumption moral discussion* (De Backer & Hudders, 2015; Tonsor & Wolf, 2019; Mathur et al., 2020; Lund et al., 2021), *AW consumers' perceptions and AW products willingness-to-pay* (WTP, from now on) (Carlsson, Frykblom & Lagerkvist, 2007; Napolitano et al., 2008; Xiaolin et al., 2014; Frey & Pirscher, 2018; Spain et al., 2018; Bozzo et al., 2019; Denver, Sandoe & Christensen, 2017; Alonso, González-Montaña & Lomillos, 2020; Kitano, Mitsunari & Yoshino, 2022), *AW products Labeling* (Kehlbacher, Bennet & Balcombe, 2012; Gerini, Alfnes & Schjoll, 2016; Cornish et al., 2020; Heinola et al., 2021) and *AW Consumption Attitudes-Behavior gap* (Cornish et al., 2019; Klink-Lehmann & Langen, 2019). Each group is described more properly below.

AW Consumption moral discussion is a thought guideline by which there is a preoccupation on understanding what exactly is behind the societal movement into AW practices that is gradually affecting the modern consumption standards. De Boer & Aiking (2022) point out different paths to contextualize the theme when explaining the subject approach increase. According to them, there are arguments remained from the sustainability paradigm as the meat consumption and its potential environmental damage generation as well as a moral inclination into animals' rights has risen up in

defense of protecting them against degenerative breeding conditions. Also, the researchers depict the short-term worries about zoonotic outbreaks citing COVID-19 global pandemic.

De Backer and Hudders (2015) gather ecological and animal health concerns in a category denominated moral motives by which people are stimulated to reflect about their eating habits in regard of environmental and social consequences. This moral category would be accompanied by a second one called human health, which is linked to concern about the risks associated to animal proteins (cholesterol, for instance) and their industrial processing (additives, for example). The authors cite vegetarianism and veganism lifestyles as samples of diet and ideology association once people whose eating habits drive into meat and animal-based nutrition reduction are normally more oriented towards questions as health, environment, farm animals, world hunger and altruism.

A similar approach is brought by Mathur et al. (2020) at the point of discussing the AW Consumption motivation under a moralist logic concerned more closely on two distinct aspects. In accordance with these researchers, both human health and ethic concern concentrate the AW Consumption discussion pillars. For them, in terms of human health, there is a crescent concern in regard of factors as cancer, cardiovascular disease, metabolic problems, obesity, stroke, and all-cause mortality. When it comes to ethical concern, they elicit the power of the societal movement towards sustainability shift, which evokes a natural turn into sensitive questions like animals handling.

A second AW Consumption guideline refers to a next stage regarding the theme deliberation, that is to say, Consumer's Perception and WTP. Herein, the subject motivations give way to the practical development mapping and the perception of the general consumers' comprehension towards AW products and their availability to dispose resources to acquire them are scrutinized. The studies are heterogeneous and executed in different countries in distinct time periods, so it is paramount to capture their consonant and dissonant narratives.

Firstly, it is uppermost to state that AW consumption still represents a thin slice in general farm products trade and the concept itself is not worldwide well known. A Chinese study (Xiaolin et al., 2014), for instance, unveils the AW definition unfamiliarity for two thirds of the surveyed participants. Not coincidentally, Napolitano et al. (2008) defend knowledge as the most important factor to develop AW products WTP and Alonso, González-Montaña and Lomillos (2020) highlight the importance of labeling system counting on clear information about AW goods benefits. Additionally, a Japanese paper conducted by Kitano, Mitsunari and Yoshino (2022) confirms consumer's knowledge and experience as having great influence on AW Consumption Behavior.

Whilst Frey and Pirscher (2018) found positive significant correlation between German consumers' WTP for AW goods and concern, altruism and less apathy, Bozzo et al. (2018) define price as the most relevant variable in order to predict purchasing behavior as well as highlight the role of education level in developing concern about AW. Complementarily, Denver, Sandoe & Christensen (2019) underline the AW products pricing as a key factor for them to gain market share.



In turn, Carlsson, Frykblom and Lagerkvist (2007) surveyed Swedish inhabitants in order to find out their monetary disposition of paying for mobile abattoirs (so as to avoid animal rude transportation before slaughtering) and uncovered a higher intention of paying extra for the facility if it is to be used by cattle when compared to pigs and broilers. These results seem to indicate that even an explanation variable (like pricing) depends on different context and outlooks (in this case, concern about different kinds of species) to be understood.

Taken in this study as a third guideline, AW Products Labeling shows off to be a relevant literature flank in regard of AW Consumption matter. It deals with the question of the AW goods identification, hierarchy and proper information in order to orientate potential consumers about AW practices value recognition. Cornish et al. (2020) defend the labeling process as a means of strengthening the information giving role at the same time the authors ascertain that AW knowledge increase AW Consumption Intention. In this sense, Spain et al. (2018) are attentive for the labeling relevance as, in their research, 70% of the respondents reported paying attention to labels that indicate how animals were raised.

On the other hand, several studies warn of the labeling power of fostering AW consumption. Kehlbacher, Bennet and Balcombe (2012) indicate AW products WTP decrease in light of AW labeling multiple levels as well as they concluded an AW rating system to be the preferred choice by the respondents when asked about it. Following this point of view, Gerini, Alfnes and Schjoll (2016) write about the labeling premium meaning loss when there is concepts superposition like organic and AW concomitant labeling. Finally, Heinola et al. (2021) when comparing the German food labeling system point out the difficulty imposed to consumers brought by the heterogeneity of the labeling systems.

As the final factor of the quadruplet AW Consumption literature research grouping, Attitudes-Behavior Gap emerges as a thematic worried about trying to comprehend a phenomenon already observed in other specific consumption areas as green consumption and fair trade, that is to say, the unexplained blanks between intention postures and real behaviors. Klink-Lehmann and Langen (2019), in this context, call attention for a certain poverty in regard of AW concept in reference to its meaning extent. In accordance with the authors, animal wellbeing is understood simply as animal husbandry, putting aside important technical questions as transportation and slaughtering and this conceptual lack contributes for a weak Consumption Behavior when it comes to animal welfare goods.

Cornish et al. (2019) analyze this situation through a framework based on a triplet basis made by capabilities, opportunities and motivation. They consider price as a crucial impeditive element against AW Consumption Behavior, but present elements capable of intervene to minimize the gap as education, persuasion, incentivization, coercion, training, restriction, structuration, modelling and enablement.

From now on, the Theory of Planned Behavior (TPB) is highlighted and describes the formation of Consumption Intention as well as Consumption Intention ability of explaining Consumption Behavior.

## 2.2 Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is a Psychology theory whose goal is comprehending the human behavior from a range of antecedents determinants. It depicts the complex role of explaining the human actions and choices presenting a framework by which the behavior is mainly a result from prior intentions (Ajzen, 1985, 1991; Madden, Ellen & Ajzen, 1992). According to its author, Professor Icek Ajzen, the theory aims at contributing to the difficult task of understanding the dispositional prediction of human behavior and accomplishes it when its framework overcomes the previous studies by which only the behavioral aggregates were understood and succeeds estimating the determinants of specific behaviors (Ajzen, 1985, 2011, 2020).

By the Theory of Planned Behavior (TPB), there are three internal salient beliefs capable of modelling our cognitive process of information organization and, mainly, attitude yielding. This comprehension derives from a previous study by which an expectancy-value binomial product once summed up for several interpretations of beliefs results on those Attitudes formation (Ajzen, 1985, 1991, 2008, 2011, 2012, 2014; Fishbein & Ajzen, 2010).

Yet according to the TPB, these three kinds of internal beliefs which define the Attitudes generation are *behavioral beliefs*, *normative beliefs* and *control beliefs*. Put together, they are sufficient to organizing our behavior intention (Ajzen, 1985, 1991; Ajzen & Fishbein, 2000; Ajzen & Sheikh, 2013). The behavioral beliefs represent the internal positions towards a given object and are related to the way each individual receives and interprets external stimuli, to his previous experience towards the object and his connection between himself, the object and the world. In sum, his subject evaluation towards it (Ajzen, 1985, 1991).

The normative beliefs, in turn, regard our value interpretations of other individuals positioning about a given object. Herein, one does not take in account his own perception, but the implication of persons who are important, namely, the ones whose judgments and standpoints matter. (Ajzen, 1985, 1991). At last, control beliefs deal with the capacity and ability one trusts he possesses in order to perform a given action towards an object. For instance, a control belief may make someone to believe he can succeed or not doing a task, passing a test or finding a partner (Ajzen, 1985, 1991).

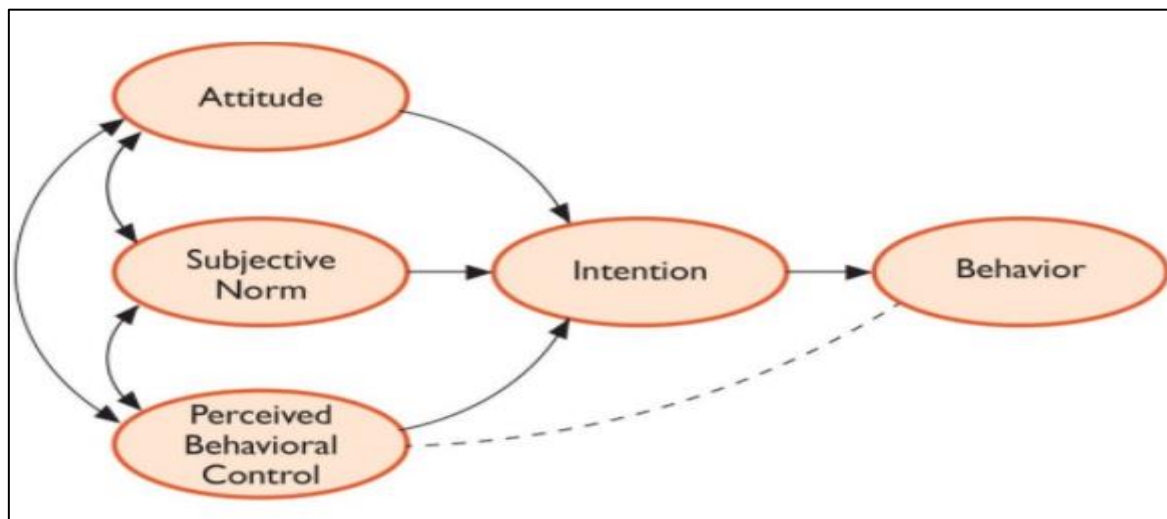
The conjunct of targeted beliefs times the weighted power of our subject evaluation models every behavioral belief, which, in turn, result in persons' Attitudes regarding whatever, this is, individual's prime positioning regarding an object (Fishbein & Ajzen, 1975, Ajzen, 1985, 1991; Washio, Ohashi & Saijo, 2019).

Similarly, the normative beliefs originate from the products sum of a set of other individuals' perceptions calibrated by persons' necessity or wish to comply with them. The conjunct of other person's beliefs times the weighted power of our subject motivation to comply with formats every normative belief, which, in turn, result in the surrounding Subjective Norms one experiences; this is, the others' positioning regarding an object (Fishbein & Ajzen, 1975, Ajzen, 1985, 1991).

To close the subject, the control beliefs emerge from the original image one produces about his capacity, ability and dominion of dealing with an object. The products sum of the different object spectra and person's related self-perception weigh molds the control beliefs, which subsequently formats the individuals' Perceived Behavioral Control, this is, their capacity and ability outlooks (Fishbein & Ajzen, 1975; Ajzen, 1985, 1991). Once known the origins of the Attitudes, Subjective Norms and Perceived Behavioral Control, TPB ascertains their sufficient power to explain the behavior intentions and the behaviors themselves as Figure 3 demonstrates (Ajzen, 1985, 2011, 2020; Fishbein & Ajzen, 2010).

**Figure 1**

*The Theory of Planned Behavior*



Ajzen. (1991).

Attitudes are defined as the extent by which a person has a favorable or unfavorable position before a given object. They can be considered as a subject evaluation or even appraisal, an internal judgment, classification, value appreciation or depreciation (Ajzen, 1985, 1991, 2008, 2011, 2012, 2014, 2020; Ajzen & Fishbein, 1980, 2000; Ajzen & Kruglanski, 2019; Ajzen & Sheikh, 2013; Hagger, Chatzisarantis & Biddle, 2002).

Subjective Norms are a person's perception of other relevant surrounding people regarding a given object. Differently from the Attitudes, the Subjective Norms may be understood as an internal filter and therefore interpretation of external reality by the lenses of proximate people's point of view.

Normally they are persons who are important to an individual such as parents, general relatives, spouse, close friends, relevant work colleagues, teachers, boss, spiritual or political leader and so on (Ajzen, 1985, 1991, 2008, 2011, 2012, 2014, 2020; Ajzen & Fishbein, 2000; Ajzen & Kruglanski, 2019; Ajzen & Sheikh, 2013; Hagger, Chatzisarantis & Biddle, 2002).

Finally, the Perceived Behavioral Control behaves as the internal comprehension of someone's general capabilities, potentiality, competence, proficiency, aptness and skillfulness, which are understood to allow performing a behavioral (Ajzen, 1985, 1991, 2008, 2011, 2012, 2014, 2020; Ajzen & Fishbein, 2000; Ajzen & Kruglanski, 2019; Ajzen & Sheikh, 2013; Hagger, Chatzisarantis & Biddle, 2002).

It is different from volitional control because this latter indicates the wish or desire one possesses towards accomplishing a behavior whilst the former points out the ability perception about performing it (Ajzen, 1985, 2011, 2020; Fishbein & Ajzen, 2010). A man may desire making a transoceanic flight, but he may never succeed having enough money for doing so or even never surmount a claustrophobia diagnosis, for instance. TPB is useful to map the correct determinants set to predict a behavior intention and, in turn, behavior intentions would be good predictors of behaviors themselves.

### 3. Method

The methodological purpose adopted in this study can be understood from the social sciences scientific methodology classical deployment. As to nature, it is a quantitative approach research once it deals with indicators quantification to conduct to results by using mathematical and statistical tools to test hypothetical theory relationships (Minayo, 2000).

In its methodological core, this work approaches the relationships amongst animal welfare goods consumption standards by measuring the quantitative statistical significance tests regarding the TPB model in two levels. The first, the classical dimensions structure by which Attitudes, Subjective Norms and Perceived Behavioral Control predict Consumption Intention. The second goes beyond and intends to capture a research gap by testing variables whose interrelation may predict the real AW Consumption Behavior.

As to the method, both descriptive and experimental methods were used. The former, in accordance with Richardson (1999) concerns on analyzing in detail a phenomenon existence. The latter, in the words of Fachin (2017), defines variables apt of being previously manipulated and whose effects are sufficiently controlled and known by the researcher for the study observation. Whilst the descriptive method was used to the aforementioned first methodology part of the study, the experimental tool was invoked to perform the second one. The TPB phenomenon existence delineation motivates the former and its controlled effects regarding the Consumption Behavior are manipulated in the latter.

Respectively, the collection techniques are survey and experiment. Cooper and Schindler (2003) define surveys as self-administered questionnaires, which aim at yielding quantitative data for later analysis. Martins and Teóphilo (2009) conceptualize an experiment as a planned observation process whose goal is drawing conclusions from manipulated controllable variables.

The survey at this point works as a psychometric tool to capture and guard the

respondent's perspective in reference to TPB framework as well as measuring demographic and particular control features to be used in future analytical progress. On the other hand, the experiment is supposed to put to the test the consumer's behavior in terms of AW goods purchase when this player is forced to decide between limited choices.

The first chosen collection technique is a survey whose goal is apprehending the sample configuration regarding TPB model in order to measure the theory framework features, namely, Attitudes, Subjective Norms, Perceived Behavioral Control and Consumption Intention. An Italian study on buying organic food (Canova, Bobbio & Manganelli, 2020) whose applied questionnaire utilizes exactly the Theory of Planned Behavior construct was adapted for such an attempt.

The second collection technique is an experiment, which aims at depicting the effective consumer's behavior, pretending a real purchase decision experience. The choice process consists in a second task the respondent is supposed to do in the research application types for which, after receiving an egg tray bonus for having answered the survey, the participant has to decide between a fifteen traditional raising chicken eggs tray (AW Non-Consumption Behavior) and a ten AW raising chicken eggs tray (AW Consumption Behavior).

Both survey and experiment were managed though the use of an application especially developed for the research. Pamphlets were distributed in four different supermarkets in Fortaleza (half of them in peripheral neighborhoods and half of them in prime areas) from October to December 2021 with instructions to the application download, survey filling and experiment participation (disguised of reward bonus). The chosen eggs were sent to participants' houses.

The chosen analysis techniques were the SEM (Structural Equation Modeling) and Logistic Regression. According to Hair Jr. et al. (2014), SEM allows to evaluate a latent variable measure as well as to test the relationship among multiple latent variables. When SEM is utilized, it increases at its maximum the explained variance by performing an iterative approach of endogenous constructs. SEM technique evaluates the TPB Model constructs gathered in the survey when disclosing the theoretical construct dimensions exploration at the Factor Analysis edge (latent variable measure) as well as highlighting the independent variables power of predicting Consumption Intention through the Multiple Regression edge (relationship among variables).

In turn, Field (2009) classifies Logistic Regression as a sort of multiple regression, which possesses a categoric, dichotomic output variable and continuous or categoric input variables. This analysis technique is useful when a research intends to predict a dichotomic dependent variable. For this study, Logistic Regression collaborates as the AW goods Consumption Behavior is shaped in a categorical, dichotomic decision: to buy or not to buy the AW goods, for instance.

## 4. Results

In terms of gender participation, 59,82% were women and the remaining 40,18% were men. 59,82% of the sample was made by the 18-38 years age group, 32,65% of the respondents belonged to 39-54 years interval and the last 7,53% were older than 54 years. When it comes to marital status, an expected prevalence may be noticed in two categories: altogether, single and married respondents represented almost 95% of the sample.

A relevant evidence was a close numerical draw involving bachelors and espoused percentages (46,58% and 48,4% respectively). Almost two thirds of the answers sum was provided by high school alumni (63,70%) followed in importance by people who attended to university classes (23,29%). According to the outcomes, more than one third of the surveyed receive R\$ 1.100,00, that is to say, Brazilian minimum salary by the law at the research period. Other 28,1% earn twice this value and for 17,35% the cypher equivalent of three minimum salaries.

### 4.1 SEM Analyses

The work utilizes the SEM method aiming at verifying the classical Theory of Planned Behavior relationships in animal welfare discussion seara given its adherence to the preached theoretical intricacies, this is, to validate the capacity of Attitudes, Subjective Norms and Perceived Behavior Control at predicting Consumption Intention behavior. The SEM analyses evokes a threefold methodology scrutiny as to validate the model by assessing the data quality and statistical rigor, namely, constructs reliability and validity, discriminant validity and model indexes. For such an attempt the study used the software SMART PLS v. 3.3.5.

The constructs reliability and validity indicator might be watched in Table 2 when for each TPB construct (AT – Attitudes, CI – Consumption Intention, PBC – Perceived Behavioral Control, SN – Subjective Norms), four measures are displayed. The first three are equivalent gauges regarding construct reliability (Cronbach's Alfa, rho\_A and Composite Reliability). They all are variables intercorrelation measures. For them, values bigger than 0,7 are enough to consider the construct validity.

**Table 2**

*Structure Equation Model – Constructs Reliability and Validity*

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	AVE
AT	0,905	0,906	0,929	0,725
CI	0,936	0,938	0,951	0,796
PBC	0,906	0,906	0,934	0,781
SN	0,910	0,935	0,932	0,731

The TPB Model constructs, according to above mentioned parameters, evidence a strong reliability for all the measures tested, indicating robust theoretical background what is, given the TPB history sturdiness, an expected performance. In turn, the convergent validity (AVE) is measured by the extracted variances average and from it one can assess the statistical relationship between the latent variable and its observable variables set. According to this criterion, Fornell and Lacker (1981) admit 0,5 as a minimum score for each construct to consider it satisfactory (Wetzels, Oderkerken-Schröder & Oppen, 2009). The TPB Model validity was also expected taken the numerous scholar works whose methodological approach made use of its background. Thus, regarding AW Consumption Intention, the AVE index presented strength for all analyzed components.

Table 3 develops the structure model discriminant validity aiming at assessing the constructs interdependency through a comparison amongst each construct AVE square root (matrix diagonal) and interconstructs Pearson's correlation index. In order to warrant the constructs interdependency, the diagonal values are supposed to be the biggest when compared to the other latent constructs paired values. The table data depict exactly this scenario designating the necessary model discriminant validity.

**Table 3**

*Structure Equation Model – Discriminant Validity (Fornel & Lacker)*

Constructs	Attitudes	Subjective Norms	Perceived Behavior Control	Consumption Intention
Attitudes	0,851			
Subjective Norms	0,405	0,855		
Perceived Behavior Control	0,608	0,389	0,884	
Consumption Intention	0,662	0,384	0,804	0,892

Table 4 presents the discriminant validity under the HTMT criterion. According to it, the constructs interactions are not supposed to present scores higher then 0,9. This can be exactly observed in the shown data.

**Table 4***Structure Equation Model – Discriminant Validity (HTMT)*

Constructs	Attitudes	Subjective Norms	Perceived Behavior Control	Consumption Intention
Attitudes				
Subjective Norms	0,718			
Perceived Behavior Control	0,673	0,871		
Consumption Intention	0,423	0,397	0,412	

Finally, Table 5 highlights specific indicators to measure the structure model quality. The Stone-Geisser coefficient concerns about the prediction power quality and is supposed to be bigger than 0. The TPB model converged to the sufficient cypher of 0,544.

**Table 5***Structure Equation Model – Indexes*

Constructs	Stone-Geisser Q2	Cohen f <sup>2</sup>	GoF
Attitudes		0,139	
Subjective Norms		0,003	
Perceived Behavior Control		0,786	
Consumption Intention	0,544		0,744

Cohen's indicator, in turn, evaluates each construct utility for the model and each construct to be considered useful must present at least 0,35, a situation found in the three constructs measured. GoF (goodness of fit) measures the general adjust model quality and might present 0,36 as minimum score, a condition verified in the model, which reached 0,744 (Wetzels, Oderkerken-Schröder & Oppen, 2009).

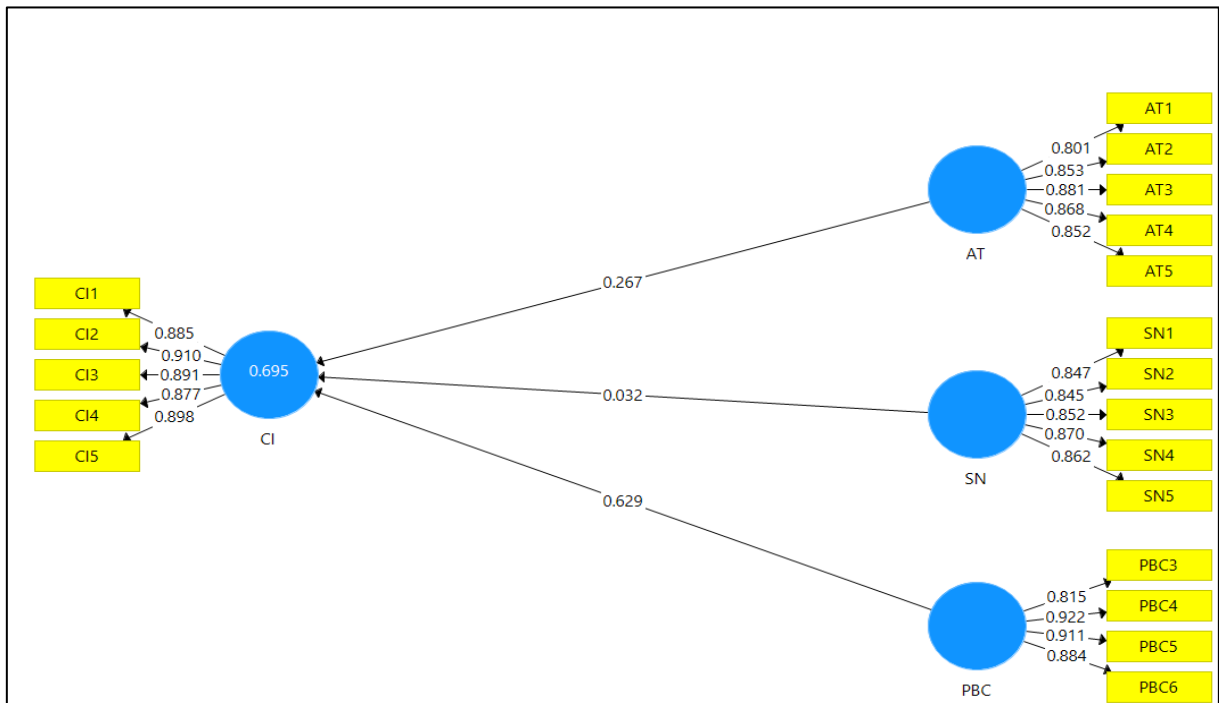
After the preliminary analysis (SEM Model may be observed in Figure 2) by which the variables are disclosed in yellow squares and the constructs in blue circles. The arrows that depart from the circles to the square carry the EFA factor loads and the ones connecting the constructs



(circles) indicate the regression coefficients in the regression equation. Inside the blue circle for the which the arrows point out it is depicted regression R2, that is, the regression or multiple correlation coefficient.

Figure 2

SEM – TPB Model



In the practical case herein discussed, the results bring to light important findings at ratifying high factor loads in the formative constructs (all events higher than 0,8) deepening the recognition of Attitudes, Subjective Norms, Perceived Behavioral Control and Consumption Intention as valid constructs.

Proceeding the evaluation, the equation regression coefficients for the formative constructs display the following scores: Attitudes (0,267, p value 0,000), Subjective Norms (0,032, p value 0,322) and Perceived Behavioral Control (0,629, p value 0,000). It is worth mentioning those index taken individually for each variable indicate its unitary capacity of predicting the dependent variable, in this case, the Consumption Intention.

The above-mentioned indexes unveil a strong prediction capacity of PBC facing Consumption Intention and also a moderate and very weak foreseeing ability of, respectively, Attitudes and Subjective Norms driven to the dependent variable. It is important to mention that the Subjective Norms presented no significance in the model. Finally, the R2 magnitude depicted as 0,695 points out the model strength given the interpretation by which it is correct to ascertain that when it comes to animal welfare, the classical Ajzen model explains in almost 70% the

Consumption Intention behavior.

#### 4.2 Logistic Regression Analyses

Logistic Regression is an inferential statistic able to measure the capacity of independent variables to predict a categorical variable behavior. A categorical variable is a particular species whose position has a mandatory dichotomic value: yes or no, positive or negative, present or absent (Field, 2009).

It was chosen to this work specially because the Consumption Behavior feature was planned to be captured through an experiment based on a dichotomic choice (regular egg choice/ AW egg choice) and the study is based exactly on how different characteristics and constructs drive, moderate or mediate its behavior. Thus, a multiple regression obeying to a loglinear distribution seems to be the fittest methodology. The statistical exams were executed in the software SPSS v. 26.

A direct inquiry was run in order to test the variables relationship. Based on the Theory of Planned Behavior, Consumption Intention and Perceived Behavioral Control were tested as independent variables and Consumption Behavior as dependent dichotomic variable (according to the chosen egg in the experiment).

In this context, a Logistic Regression is normally presented by three indicators necessary to interpret the outcomes: B, sig and Exp (B). B is the regression coefficient for each variable, that is to say, the product factor to be used in the equation to predict a determined position of the categoric variable. Sig means the test statistical significance and is the most important index to be analyzed once, for this study, 0,05 (or 5%) is the edge for accepting the variable as a predictor. Finally, Exp (B) is the ratio by which the predictor changes the chance of the dichotomic variable occurrence.

As it can be seen in Table 6, neither Consumption Intention nor Perceived Behavioral Control presented significant impact on Consumption Behavior conduct. The Consumption Intention presented a positive B value (0,315), its standard error can be faced as relevant (0,216), which explains a reduction in the Wald Statistic. This variable points out a direct relation for impacting Consumption Behavior chances prevision when signaling an Exp(B) value of 1,37, but the significance is hugely superior to the maximum tolerance of 5% and makes unfeasible the Consumption Intention impact on the Consumption Behavior.

Even more surprising was the Perceived Behavioral found data. The variable showed a negative B and an Exp(B) inferior to 1, that is to say, its impact would rule an inverse proportion in regard of Consumption Behavior. Nonetheless, its significance was completely unfeasible to point out a reliable relationship.

Table 6

*Logistic Regressions for Consumption Behavior*

Variable	B	S.E	Wald	gl	Sig.	Exp(B)
Consumption Intention	0,315	0,216	2,115	1	0,146	1,37
Perceived Behavioral Control	-0,149	0,203	0,54	1	0,463	0,861
Constant	-2,03	0,9	5,09	1	0,024	0,131

Additionally, Table 7 indicates the model robustness, even though the previous results already debunk any further result. On the face of it, it is also not a surprise model explanation indexes so low. These results only confirm what has already been concluded, the unsustainability of the relationship Consumption Intention-Consumption Behavior for this research.

Table 7

*Logistic Regression General Model*

Likelihood Log -2	R square Cox & Snell	R square Nagelkerke
513,601	,006	,009

The work results have clearly depicted the Consumption Intention construct model confirmation and an emphatic denial in regard of the Consumption Intention-Consumption Behavior theoretical connection. Instead of finding a partially explained liaison (the so-called Gap), the study encountered an uncomfortable Split. This subject will be more properly discussed in the next section.

## 5. Conclusions

When it comes to analyzing the TPB Model, the research found extreme high scores for consumers' AW Attitudes and AW Perceived Behavior Control, but more modest scores for AW Subjective Norms. This means a very relevant positive attitudinal comprehension of the respondents towards the AW cause and a robust understanding of self-capacity of purchasing AW goods in terms of resources and product availability. In contrast, the respondents do not care so strongly about family and close friends when deciding for an AW product choice. AW Consumption Intention scores were also extremely high and this indicate an interesting approval state in regard of AW products. They are not rejected in their concept and presentation.

When testing Consumption Behavior regarding AW farm goods, the results found a ratio of 25/75 respectively in percentage for AW and Traditional Consumption. The interpretation is not an easy task given the scarcity of similar research in AW seara, but the outcomes might indicate a

relevant cypher when taking in account the product novelty and the product cost difference (signalized in the experiment by the eggs amount in each offer). Nonetheless, the work results showed primarily a theoretical break when discharged Consumption Intention as having significant effect on AW Consumption Behavior. This broken assumption was supported by the denial of the consecrated theoretical model by which the willingness to pay for a specific product had a moderate effect on its real purchase.

Indeed, the research outcomes bring a different reality forward. Instead of confronting an Intention-Behavior Gap, an Intention-Behavior Split was observed. According to the study approach, the buying behavior is not stronger in the consumers for whom the purchase planning or the willingness to pay for the AW raising chicken eggs is higher. Herein, the term Split intends to give the idea of scission, full separation, complete alienation for the Intention and Behavior constructs for reasons ignored by this study, which was not, not even by a long shot, counting on this situation. The natural path would be to deepen the results by inquiring the reality under new methodological arsenal aiming at scrutinizing the results antecedents, but for the programmed scope this was not possible.

Even though, the work is expected to have contributed to Consumer Behavior field, especially dealing with its sustainable and ethical branch as well as to have awakened the Brazilian Academy disposition to give more attention to Animal Welfare discussion and its deployments. For such an attempt, it is pertinent to inquiry about four different research perspectives risen out of this study category: how the consumption behavior may be understood in face of increasing complex sustainable and ethical questions arrival, the importance of methodological discussions deepening in regard of Consumption Behavior field, the impacts the AW consumption might address to the ethical consumption field given its importance and the Intention-Behavior Split perspective.

When it comes to the consumption practices complexity increase, the postulates under which this work has dealt with call attention to the necessity of development for the current consumption behavior theoretical frames in order to expand the field frontiers, especially taking in account that seminal models might be insufficient to explain the consumption ethical sophistication and to trace the supportive reasons heading the purposeful purchase practices.

As a closing, the study looks forward to having brought light into Animal Welfare discussion and to having granted in a lucid, fair and well-intentioned manner in the search of solutions for a world where animals are properly treated, protected and respected.

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