A RELAÇÃO HUMANO-ANIMAL ATRAVÉS DA PERSPECTIVA DOS LARES BRASILEIROS.

THE HUMAN-ANIMAL RELATIONSHIP THROUGH THE PERSPECTIVE OF BRAZILIAN HOMES.

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A RELAÇÃO HUMANO-ANIMAL ATRAVÉS DA PERSPECTIVA DOS LARES BRASILEIROS.

Objetivo do estudo

O objetivo central deste estudo é identificar as dimensões que mais explicam a relação humano-animal nos lares brasileiros.

Relevância/originalidade

Apesar dos estudos quantitativos sobre o caráter sociodemográfico das casas dos donos de animais de estimação, pouco se estudou sobre as dimensões da relação humano-animal.

Metodologia/abordagem

Foi realizado um inquérito com 690 entrevistados a nível nacional, elaborado com recurso a escalas psicométricas internacionais

Principais resultados

O estudo demonstrou que a maioria dos entrevistados já passou por algum tipo de estresse financeiro por causa do seu animal de estimação, sugerindo que os gastos com animais de estimação são subestimados no orçamento das famílias.

Contribuições teóricas/metodológicas

O artigo contribui para a literatura sobre escalas psicométricas ao validar a aplicação de escalas internacionais no Brasil, além de comprovar que, apesar de originalmente desenvolvidas para cães, com algumas considerações, as escalas também funcionam para donos de gatos.

Contribuições sociais/para a gestão

Os resultados do estudo também têm implicações gerenciais relevantes, sugerindo que o processo de compra de produtos e serviços para animais de estimação envolve uma esfera muito mais emocional do que racional.

Palavras-chave: Consumo e sociedade, Pets, Relação Humano-Animal, Comportamento do consumidor, Processo de decisão de compra

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Study purpose
The central objective of this study is to identify the dimensions that most explain the human-animal relationship in Brazilian homes.

Relevance / originality
Despite quantitative studies on the sociodemographic character of pet owners' homes, little has been studied on the dimensions of the human-animal relationship.

Methodology / approach
A survey was conducted with 690 interviewees nationally, prepared using international psychometric scales

Main results
The study demonstrated that most respondents have already experienced some type of financial stress because of their pet, suggesting that spending on pets is underestimated in families budget.

Theoretical / methodological contributions
The article contributes to the literature on psychometric scales by validating the application of international scales in Brazil, as well as proving that, despite being originally developed for dogs, with some considerations, the scales also work for cat owners.

Social / management contributions
The results of the study also have relevant managerial implications, suggesting that the process of purchasing products and services for pets involves a much more emotional sphere than a rational one.

Keywords: Consumption and Society , Pets, human-animal relationship, Consumer Behavior, Purchasing decision process

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1 INTRODUCTION

It is estimated that there were approximately 844 million dogs and cats in the world in 2018 (Statista, 2024). That same year, according to UN data (2023), there were 138 million children in the world, under the age of 1, which gave a ratio of more than 8 pets per child, under the age of one, on the planet. According to data from Health for Animals (2022), it is estimated that more than half of the world's population has at least one pet at home. In the United States, it is estimated that approximately 70% of households have at least one pet (American Pet Products Association, 2023), and in Brazil, approximately 65% of households have at least one dog or cat (PNS, 2019).

With a pet population close to 150 million, Brazil has the second largest number of dogs and cats in the world and represents the third largest pet market on the planet (IPB, 2023). According to the Instituto Pet Brasil (2020), the sector had revenues of BRL $35 billion in 2019. Data from the Brazilian Association of the Pet Products Industry (Abinpet, 2021) show that Brazil is in seventh position in countries with the highest rates of revenues in the pet market. According to data from SEBRAE (2019), the Brazilian pet sector is already larger in revenue than the white-goods appliances sector (refrigerators and stoves).

If dogs and cats were considered part of the Brazilian population, they would represent 23% of the population of this country, more than the number of children under 14 years of age, who represent 21% of the total population. Despite representing for almost 0.40% of the Brazilian Gross Domestic Product (GDP) (Abinpet, 2021), the pet sector is a segment that is still little studied. Despite quantitative studies on the sociodemographic character of pet owners' homes, little has been studied on the dimensions of the human-animal relationship. With the purpose of mitigating this gap, the objective of this study is to identify the main dimensions that explain the human-pet relationship in Brazilian homes.

As a result, this study suggests that men tend to spend more on pets than women, even though men prefer to be called pet owners, while women like to be called their pet's mothers. The study also has relevant managerial contributions by demonstrating that spending on pets does not seem to be completely included in the budget of pet owners. The results also suggest that the process of purchasing products and services for pets involves a much more emotional sphere than a rational one. It is recommended, for future studies, the application of these scales to owners of other pets.

This article is organized as follows: in the first session a literature review was presented on anthropomorphism, then on the human-animal relationship and finally on the dimensions of the human-animal relationship. We then highlight the method used in the empirical phase of the research. The penultimate section of this article presents the discussion about the results, and finally, the authors' final conclusions are presented.

2 LITERATURE REVIEW

For the theoretical support of this work, no literature was found that brought together, in a single previous study, the themes of anthropomorphism, the human-animal relationship and the dimensions of the human-animal relationship. Therefore, it was decided to work with the

three themes in this review, with the purpose of ensuring theoretical alignment between these three concepts.

2.1 Anthropomorphism

Anthropomorphism is "the attribution of human mental states (thoughts, feelings, motivations and beliefs) to non-human animals" (Serpell, 2003, p. 56). It is also understood as the attribution of human characteristics to inanimate forms (including brands) or animals (Khan, Anas, & Uddin, 2024).

According to Thomas (2010), it was at the beginning of the Renaissance that the concept of pet began to be developed, and what would later be called pet. This preference for Pets according to their pedigree, size, fur, exclusivity and lineage (Ryder, 2019) reveals how the very concept of the Pet itself has become an additional component in the construction of a lifestyle (Warder, 2005; Bourdieu, 2008; Ryder, 2019).

This stratification, segmentation and preference for pets, as part of the composition of a lifestyle, which represent a set of preferences that express, in the specific logic of each individual, symbolic subspaces, brings us closer to the literature of Bourdieu (2008), as well as by Warde (2005), who understands that the meaning of the pet has gone beyond its meaning as a product/object and its functionality, and points to an intricate system of meanings in the relationship between the individual, the social environment and the pet itself.

Deepening the debate about this new human-animal relationship, Belk (1996) and Hirschman (1994) observed how Pets represented a kind of "extended self" of their owners. For Belk (1996), pet owners expect their animals to conform to their personality, family and lifestyle. To this end, a whole range of products and services have been offered for Pets, products that mimic the human lifestyle and consumption, however, transmuted into the animal universe.

Pets are located in an extremely ambiguous place between the human and animal spheres (Belk, 1988, 1996; Leach, 1983; Osório, 2019; Ingold, 1995), or, as Belk (1988) states, they are both at the same time. They are neither fully animal nor fully human, pets live in a separate category, sometimes anthropomorphized, sometimes (re/hyper) animalized or zoomorphized (Osório, 2019). Thus, it is worth saying that the more disconnected we become from other people, the deeper the bonds we form with pets (Dotson; Hyatt, 2008). The greater the bonds with pets, the more humanized this relationship becomes.

2.2 The Dimensions of the Human-Animal Relationship

Hirschman (1994), Belk (1996) and, later, Solomon (2008), through qualitative studies, made the first sketches to profile pet owners, through their behavior. It is clear that these profiles, to a greater or lesser extent, are strongly intertwined in the concept of "extended self" by Hirschman (1994) and Solomon (2008). Belk (1996) was one of the pioneering authors to apply the concept of "extended self" to pets. According to the author, pet owners expect their animals to conform to their personality, family and lifestyle. Hirschman (1994) also contributed to this debate and stated that pets can play different roles in the lives of their owners, whether in the individual, family or social sphere.

In a pioneering quantitative study, in which they attempted to stipulate the main dimensions of the human-animal relationship, Dotson and Hyatt (2008) proposed seven key

dimensions, which best explained the relationships between humans and animals. They are: (1) Symbiotic Relationship; (2) Dog-Oriented Extended Self; (3) Anthropomorphism; (4) Activity/Youth; (5) Barriers; (6) Specialty Purchases and (7) Willingness to Adapt (see Figure 1). Advancing the model designed by Dotson and Hyatt (2008), Boya et al. (2012) proposed that, in fact, there are six dimensions that best explain the animal-human relationship, namely: (1) Dog-oriented lifestyle; (2) Anthropomorphism; (3) Structure and discipline; (4) Utility oriented; (5) Company limits and barriers; and (6) Appearance.

Figure 1 – The seven dimensions of the human-animal relationship
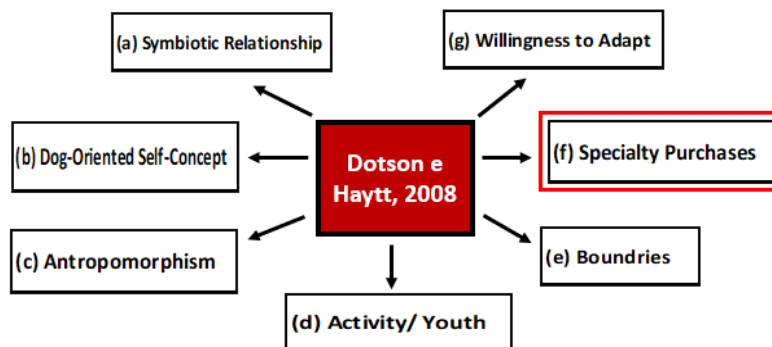
Source: Dotson e Hyatt (2008)

One of the greatest innovations of the model proposed by Boya et al. (2012) was the theoretical framework for hat would become the first variables that explained the consumption behavior of these pet owners. In the study by Dotson and Hyatt (2008), Special Purchases (Figure 3) were considered as a construct, or an additional dimension of the human-animal relationship. In Boya et al. (2012), this was called Consumption Behavior and clusters the dimensions of the human-animal relationship in the face of consumption behavior (see Figure 2). The article by Boya et al. (2012) was written in partnership with Dotson and Hyatt.

**Figure 2 – The six dimensions of the human-animal relationship**
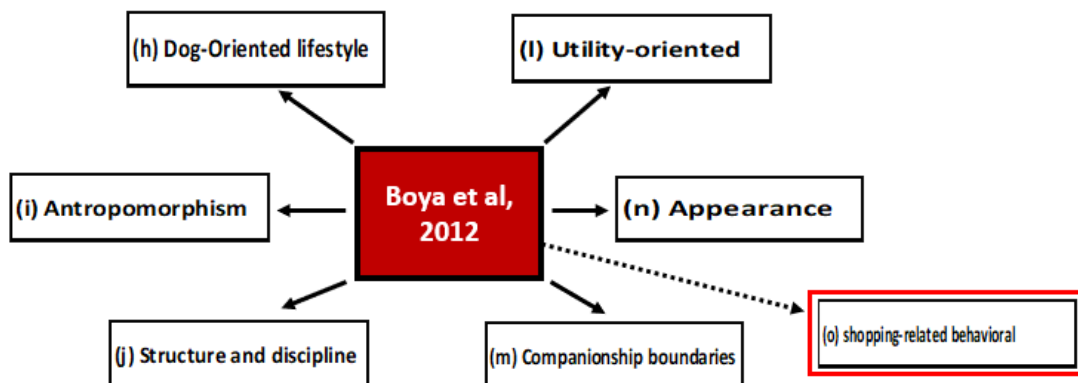
Source: Boya *et al* (2012)

In the model proposed by Chen et al. (2012), there are three types of relationships

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between humans and pets, namely: Attachment, Interaction and Human Substitute. These three are highly in line with what Dotson and Hyatt (2008) and Boya et al (2012) had proposed. The great contribution of the new model was in the sphere of consumer behavior of pet owners. The authors segmented the pet owner into three clusters: Consumption value, Information collection method and Retail choice criteria. In this sense, Chen et al. (2012) went further than Dotson, Hyatt and Boya, as they managed to cluster the profiles of pet owners into certain consumption patterns. About this, see Figure 3.

Figure 3 – The three dimensions of the human-animal relationship
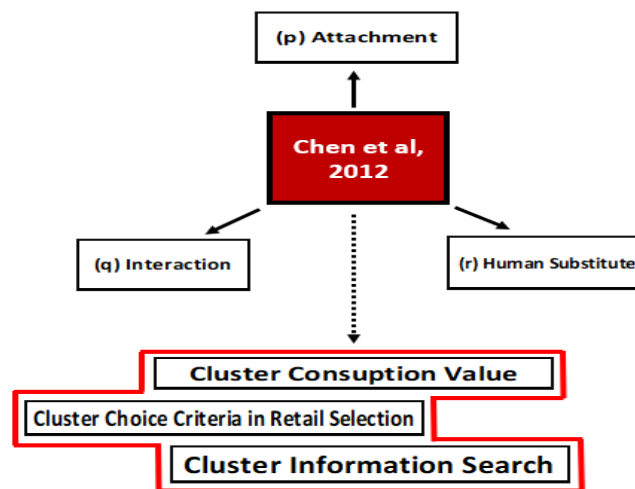
Source: Chen *et al*. (2012)

Given the similarity of the concept of some constructs, for this work, was done an adaptation of the scales proposed by Dotson and Hyatt (2008), Boya et al. (2012) and Chen et al. (2012). In Table 1, it is possible to see the description of the main dimensions of the human-animal relationship that the literature addresses, and which this work used as a reference, as well as the main characteristics and authors who provided the theoretical framework.

Table 1 - Description of the main dimensions of the human-animal relationship

Dimension of the Human-Animal Relationship	What it is?	Characteristics	Author(s)
Symbiotic Relationship	Mutually beneficial bond between human and animal	In such a relationship, the human is happier, less stressed, less lonely, safer and calmer, while the dog is treated like a child/person.	Dotson and Hyatt, 2008 and Boya *et al*., 2012
Pet-Oriented Lifestyle	The animal is an extension of its owner and seen as the human being's best friend	Individuals in this dimension tend to spend less time with other people in general, due to their relationship with their pet. However, these individuals may have better relationships with other pet owners. The pet plays a central role in these people's lives.	Dotson and Hyatt, 2008 and Boya *et al*., 2012

Anthropomorphism	The animal is perceived as a substitute for a child or as a member of the family and has the power to communicate with humans	The dog owner who scores high on this dimension is likely to talk to his dog.	Dotson and Hyatt, 2008; Holbrook *et al*. 2001; Hirschman, 1994 and Belk, 1996
Structure and Discipline - Utility Oriented	Animals serve as an incentive to make their owners more physically active	This dimension corresponds to the "childish and playful" theme of Holbrook et al. (2001). It captures how these owners may feel younger or like children.	Holbrook et al. (2001); Dotson and Hyatt, 2008; Boya et al., 2012 and Chen et *al*., 2012
Companionship – Limits	This dimension reflects the lack of limits imposed on pets by their owners at home.	The animal walks freely around the house, on the furniture and can sleep in bed with its owners. Here it is also possible to observe that the configuration of the house was adapted for the presence of pets.	Dotson and Hyatt, 2008 and Boya *et al*., 2012
Special Purchases	Purchasing behavior	It highlights consumption habits, purchasing behavior and the special effort made to purchase products for pets.	Dotson and Hyatt, 2008 and Boya *et al*., 2012
Willingness to adapt	Analyzes how willing the pet owner is to change their living and consumption patterns to adapt to their pet	These changes may be in relation to the configuration of the household, the vehicle and changes in consumption as a whole.	Dotson and Hyatt, 2008 and Boya *et al*., 2012
Appearance & Social Value	Analyzes the extent to which pet owners choose their pet based on appearance and social acceptance	The pet gives social approval and recognition, just as the pet's physical characteristics are the most preponderant.	Boya et al, 2012 and Chen *et al*., 2012

Source: the authors (2024)

3 METHOD

To achieve the objective of this study, a survey was carried out, whose data collection instrument presented the variables of eight constructs, which explain the pet-human relationship. They are: Symbiotic Relationship, Pet Oriented, Anthropomorphism, Structure and Discipline - Utility Oriented, Companionship - Limits, Willingness to adapt and Appearance and Social Value. These eight constructs are the consensus between the three international reference scales (Dotson and Hyatt, 2008; Boya et al, 2012; Chen, et al 2012), which had similar concepts, constructs and items among each other, as can be seen in table 1. To optimize these scales, we created a consensus scale, which is the adaptation of these three reference scales.

These eight constructs were measured through 69 statements, which can be seen in Table 3, and were estimated using a five-point Likert scale anchored by 1- Strongly Disagree and 5- Strongly Agree. The survey also included 23 questions related to the sociodemographic characteristics of the pet owner, the pet, the home and its routine, the pet owner's behavior on social networks and their consumption behavior. The statements used were based on studies by Boya et al. (2008), Boya et al. (2012) and Chen et al. (2012).

The definition of the sample size followed the assumption established by Figueiredo et al. (2010), in which it is recommended that, for each psychometric variable, between five and

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ten interviews be carried out. Given that the data collection instrument consisted of 69 statements, the sample size was 690, of which 345 respondents were people who lived alone and the other half were people from other household arrangements. This decision was made because, according to a study carried out by Grupo ZAP and DogHero (2017), 53% of singles said they wanted to have a pet, with this number rising to 57% when the group was made up of divorced or widowed people. Therefore, it seemed appropriate to compare the consumption behavior of different family arrangements.

The National Household Sample Survey (PNAD) 2021 (PNAD, 2023) was used as a reference for the sample design. To make data capture feasible in all States of Brazil, the market research company Brazil Panels (https://www.brazilpanels.com.br/) was hired, which collected data between the months of February and March. 2023.

Regarding the inclusion criteria, people over the age of 18, who had a dog and/or cat for at least six months, were considered eligible to participate in the sample. Regarding the exclusion criteria, marketing or market research professionals, professionals involved in the marketing of products and/or pets and owners of other types of pets other than dogs or cats were considered unfit. Data were analyzed using descriptive statistics, confirmatory factor analysis and cluster analysis using Jamovi software.

4 RESULTS

This session will present the results of the survey that was applied for. To facilitate data interpretation, this chapter is organized as follows. First, an analysis of the general results of the socio-demographic data of the sample's interviewees was carried out, then the results were analyzed from the perspective of household arrangements and finally, the dimensions of the human-animal relationship were analyzed in a clustered manner.

4.1 Socio-Demographic Results

Of the 690 respondents, 261 declared themselves male and 426 declared themselves female, which accounted for 38% and 62% of the sample, respectively. The distribution of sex by region was as follows: North – 62% women and 38% men; Northeast – 58% women and 42% men; Midwest – 69% women and 31% men; Southeast – 64% women and 36% men and South – 59% women and 41% men. In Figure 4, it is possible to see the geographic distribution of the sample.

The overall average age of the sample was 40.8 years (Minimum= 18 years; Maximum = 76 years; SD = 12.6), with male respondents having an average age of 42.2 years (Minimum = 18 years; Maximum = 76 years; SD = 12.3) and female aged 40.0 years (Minimum = 18 years; Maximum= 72 years; SD = 12.7).

Income from 1 to 3 minimum wages was the most frequent in the sample, with this income range being the most cited in all regions (42% of women and 40% of men). Subsequently, income of up to 1 minimum wage was the second most cited in all regions and represented 33% of the average income of women and 20% of the income of men in the sample. It is concluded that the income of 70% of the 690 interviewees ranges from less than one minimum wage to 3 minimum wages, respectively.

Completed high school was the level of education observed in 40% of the entire sample and was also the most selected level of education in all regions of the country. Completed high

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school was selected by 40% of the women and men in the sample. Analyzing the sample by living arrangement, 345 respondents stated that they lived alone, which represented 50% of the sample. The second and third largest household arrangements were households with 5 and 3 people, which represented 15% and 14% of the sample, respectively. These three groups represented 79% of all respondents.

Figure 4 – Distribution of the sample by region, percentage participation of the sample, gender, age, education and income

North Region
55 Interviewees
8% of the total sample
21 Man | 34 Women
38,4 years old
1 to 3 minimum wages
Complete high school

Midwest Region
55 Interviewees
8% of the total sample
17 Man | 38 Women
41,4 years old
1 to 3 minimum wages
Complete high school

Northeast Region
186 Interviewees
27% of the total sample
78 Man | 107 Women
41,6 years old
1 to 3 minimum wages
Complete high school

Brazil
690 Interviewees
100% of the total sample
261 Man | 426 Women
40,8 years old
1 to 3 minimum wages
Complete high school

South Region
104 Interviewees
15% of the total sample
41 Man | 61 Women
39,3 years old
1 to 3 minimum wages
Complete high school

Southeast Region
290 Interviewees
42% of the total sample
104 Man | 186 Women
41,2 years old
1 to 3 minimum wages
Complete high school

Source: the author (2023).

Of the 690 respondents, 58% were owners of dog(s), 25% of respondents were owners of cat(s) and the remaining 18% were respondents who declared themselves owners of cats(s) and dog(s). Regarding the main motivations for acquiring a pet, the reasons most cited by both men and women, were: company, fun and charity (adoption). Regarding the form of acquisition, the most cited was adoption, chosen by 43% of men and 41% of women interviewed. As a second and third option, I rescued it from the street or found it abandoned and received it as a gift.

Of the total sample, 336 respondents, which represented 49% of respondents, stated that they like to be called pet father or mother. Of these, 235 were female and 98 male, equivalent to 55% of respondents being female and 37% male. Also, 258 respondents, or 37% of the sample, preferred to be called owner, of which 128 were men and 130 women, which represented 49% of male respondents and 30% of female respondents.

In relation to the average monthly expenditure per pet, for both men and women, the main response was between BRL $101 and BRL $300, representing 63% of the responses from the general sample. Then, the second most cited option by men and women was less than BRL $100, which was responsible for 22% of all responses in the sample. Among the most hired services, both men and women cited bathing and grooming, as well as pet product delivery

services. The least mentioned were psychologist services, day care and funeral plans. Regarding where pet owners usually buy products for their pets, both genders mentioned neighborhood pet stores and supermarkets, respectively.

When asked what factors were most taken into consideration when purchasing a product for their own pet, both genders cited the options quality, nutritional value, veterinarian's recommendation and price, respectively. When asked about the main channels for searching for information about pet care, men and women also had similar answers, citing Google, YouTube, Facebook and Instagram as the main sources of information, respectively.

4.2 Results due to family arrangements

Both, the average income and education level of households of people who live alone and the other household arrangements, followed the national trend. The average income that presented the highest frequency was 1 to 3 minimum wages and the most cited education options were complete secondary education, followed by complete higher education.

Just like family arrangements with more than one person, single-person homes also tend to prefer dogs. 58% of households with more than one person had a dog(s), while 57% of single-person households chose the same option. A small difference occurred in relation to cats, as 29% of homes with people living alone had a cat(s), compared to 25% of homes with more than one person. Finally, 14% of single-person arrangements had dog(s) and cat(s), compared to 22% of other arrangements.

Homes for people who live alone showed a tendency towards more humanized behavior than other household arrangements. 52% of people who live alone preferred to be called pet parent, compared to 44% in other household arrangements. Next, the second most selected option regarding the option of how they would like to be called in relation to their pet, 34% of people who live alone like to be called by their owner, compared to 41% in other household arrangements. Regarding the main motivations for acquiring a pet, as well as in the general sample, both single-person home arrangements and others selected the following as the main reasons: companionship, fun and charity (adoption). Regarding the form of acquisition, the most cited option was adoption, chosen by 41% of single-person households and 43% of other types of arrangements. As a second and third option, I rescued it from the street or found it abandoned and received it as a gift.

When asked about the average monthly expense per pet, in homes of people who live alone, the answer was between BRL $101 and BRL $300, also selected by 63% of other arrangements. Next, the most cited options were less than R$100 and between BRL $301 and BRL $500, cited by approximately 22% and 12% of both groups, respectively. Among the most and least contracted services, all home arrangements were unanimous in their responses, with the most contracted services being bathing and grooming and pet product delivery services. The least mentioned were psychologist services, day care and funeral plans. Regarding where pet owners usually buy products for their pets, both mentioned neighborhood pet stores and supermarkets, respectively.

When asked what factors were taken into consideration when purchasing a product for their own pet, as well as in the general sample, the home arrangements also showed harmony in their responses, citing the options: quality, nutritional value, veterinarian recommendation and price, respectively. When asked about the main channels for searching for information

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about pet care, home arrangements also had similar responses, citing Google, YouTube, Facebook and Instagram as the main sources of information, respectively.

4.3 Results in the human-animal dimension

All the items that had a p-value < 0.001, as well as the reliability measurement made on the construct items, through Cronbach's alpha analysis. This corroborates and demonstrates the solidity of the theoretical model that was being tested, given the high statistical significance, as well as demonstrating how well the proposed model adjusted to the observed data.

Table 3 shows the internal consistency of the Anthropomorphism scale estimated using Cronbach's α. As a result, it was observed that the construct had a Cronbach's α of 0.949, very close to 1, which indicates great consistency between the items. In parallel, as shown in Table 3, if any of the construct's items were removed, there would be a decrease in Cronbach's α. This reinforces the consistency of the items in the construct composition.

Table 3 – Scale reliability statistics and impact of eliminating items from the Anthropomorphism construct.

Scale Reliability Statistics	Cronbach's α
Scale	0.949

Item Reliability Statistics	If the item is deleted
	Cronbach's α
I treat my pet like a person	0.946
Having a pet is like having a child living at home	0.946
My pet is my best friend	0.946
My pet is an extension of myself	0.944
My Pet has a lot of my personality	0.946
I see pets more as people than wild animals	0.945
My pet is like a child to me	0.946
I learn a lot from my pets	0.944
I have the same responsibilities as a parent when it comes to caring for my pet	0.945
My pet is very similar to me	0.944
I like to spoil my pet	0.945
I like to celebrate my pet's birthday	0.945
When I talk to my pet, I speak with a child's voice	0.948
My Pet understands my main emotions. When I am sad, happy or angry	0.948

Source: the authors (2024).

Table 4 presents Cronbach's α for the Pet-Oriented Lifestyle construct. As a result, it was observed that the construct had a Cronbach's α of 0.941, also very close to 1, which indicates a great consistency of the items among themselves.

Scale Reliability Statistics	Cronbach's α
Scale	0.941

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Item Reliability Statistics

	If the item is deleted
	Cronbach's α
When I'm stressed, being with my pet calms me down	0.935
Pets make the world a better place for me	0.935
I'm a happier person because of my pet	0.934
I feel emotionally connected to my pet	0.934
My pet keeps me from feeling alone	0.936
My pet's psychological well-being is an important concern for me	0.936
My Pet gives me a feeling of psychological well-being	0.935
I would not be willing to establish a relationship with someone who was not willing to accept my pet	0.937
I am willing to make sacrifices for my Pet	0.936
My pet is part of my family	0.935
I can't imagine a home without pets	0.936
My pet keeps me young	0.938
I often play with my pet	0.936
I like going for walks with my pet	0.941
I regularly give my pet treats	0.951

Source: the authors (2024).

Table 5 shows Cronbach's α for the Companionship - Limits construct. As a result, it was observed that the construct had a Cronbach's α of 0.752, which indicates that there is great consistency between the items.

Table 5 – Scale reliability statistics and the impact of eliminating items from the Structure and Discipline - Limits construct.

Scale Reliability Statistics

	Cronbach's α
Scale	0.831

Item Reliability Statistics

	If the item is deleted
	Cronbach's α
Spending time with my pet stops me from spending as much time with other humans	0.822
My pet helps me develop better relationships with other people	0.808
I prefer to spend time with my pet than with other humans	0.805
My Pet understands my main emotions. When I am sad, happy or angry	0.811
I let my pet sit on the furniture in the house	0.801
I like having my pet sleep in bed with me	0.800
My Pet is allowed to roam anywhere in the house/apartment	0.805
I travel with my pets	0.838

Source: the authors (2024).

Table 6 presents Cronbach's α for the Structure and Discipline - Utility Oriented construct. As a result, it was observed that the construct had a Cronbach's α of 0.752, which indicates that there is great consistency between the items.

Table 6 – Scale reliability statistics and the impact of eliminating items from the Structure and Discipline – Utility Oriented construct.

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Scale Reliability Statistics

	Cronbach's α
Scale	0.752

Item Reliability Statistics

	If the item is deleted
	Cronbach's α
Having a pet makes me feel safer	0.724
I feel like I can communicate with my pets	0.717
Having a pet force me to exercise more	0.678
I often spend time training my pet	0.685
I have many established rules that my Pets must follow	0.731

Source: the authors (2024).

Table 7 presents Cronbach's α for the Special Purchases construct. As a result, it was observed that the construct had a Cronbach's α of 0.939, which indicates that there is great consistency between the items.

Table 7 – Scale reliability statistics and the impact of eliminating items from the Special Purchases construct.

Scale Reliability Statistics

	Cronbach's α
Scale	0.939

Item Reliability Statistics

	If the item is deleted
	Cronbach's α
I buy items online for my pet	0.935
I am loyal to certain brands of pet food	0.937
I buy luxury items for my pet	0.935
I buy items for my pet on impulse	0.936
I'm willing to go out of my way to find special products for my pet	0.935
Price is not an issue when it comes to buying something my pet likes.	0.935
I always spend more than planned when I go to a store to buy my pet's basic items	0.934
I spend a lot of money on my pet	0.935
I look for special products for my pet	0.935
I like to buy gifts for my pet	0.935
I buy the healthiest food for my pet, regardless of the price	0.935
I take my pet to the vet regularly	0.936
I've already been financially strapped due to some treatment for my pet.	0.937
I have my pet's costs well planned	0.938
I buy items in physical stores for my pet	0.937
I buy items from online stores for my Pet	0.935
Having a pet affected the choice of the configuration of the space where I live	0.937
Having a pet has changed my grocery shopping habits	0.936
I regularly buy medical supplies for my pet	0.935
Owning a pet has affected the layout of my home	0.938
Owning a pet has affected my property's outdoor setup	0.938

Source: the authors (2024).

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Table 8, below, shows Cronbach's α for the Appearance construct. As a result, it was observed that the construct had a Cronbach's α of 0.869, which indicates that there is great consistency between the items.

Table 8 – Scale reliability statistics and the impact of eliminating items from the Appearance construct.

Scale Reliability Statistics

	Cronbach's α
Scale	0.869

Item Reliability Statistics

	If the item is deleted
	Cronbach's α
I chose my Pet because he looks cool	0.850
What I value most about my Pet is because his appearance is beautiful.	0.851
My pet gives me social approval	0.830
My pet gives me a good impression on other people	0.845
My pet improves the way I am perceived	0.834

Source: the authors (2024).

In Table 9, Cronbach's α for the Social Media construct can be seen. As a result, it was observed that the construct had a Cronbach's α of 0.869, which indicates that there is great consistency between the items.

Table 9 – Scale reliability statistics and the impact of eliminating items from the Social Networks construct.

Scale Reliability Statistics

	Cronbach's α
Scale	0.801

Item Reliability Statistics

	If the item is deleted
	Cronbach's α
I think it's cool that pets have profiles on social media	0.751
I've already posted a photo of my pet on social media	0.778
I have more photos with my pet than with my close friends and family	0.742
I use social media as a source of inspiration about PET care	0.730

Source: the authors (2024).

4.4 Results by cluster

For cluster analysis, four groups were used, given that this number of groups presented the lowest number of overlapping information, as well as leaving the data less dispersed among themselves. The cluster analysis was conducted using the K-means estimator (Hair et al., 2009), identified four distinct clusters. This sizing showed good consistency in addition to adequate intragroup homogeneity and intergroup heterogeneity. Regarding the characteristics of the clusters, according to gender, cluster 1 is predominantly male, while clusters 2 is predominantly

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female. Regarding the marital status aspect, cluster 3 is the one with the best distribution among the marital status options. Clusters 1 and 4 are massively composed of single people and made up of people who live alone.

In terms of income, clusters 1 and 4 present the most harmonious distribution among income options; cluster 2 has the highest income frequencies, cluster 3 has the highest frequency of low average income. In relation to education, cluster 1 is predominantly made up of people with completed high school. Clusters 2, 3 and 4 are divided between the Complete Secondary Education and Complete Higher Education options. Clusters 1 and 2 are mostly made up of dog owners, Clusters 3 and 4 are more balanced between owners of dogs, cats and both. In parallel, participants in cluster 1 prefer to be called the pet's owner, while respondents in clusters 3 and 4 prefer to be called the pet's father or mother and cluster 2 prefers to be called various ways, with a relative predominance of the owner option of a pet.

In clusters 2 and 4, the majority form of acquisition was adoption. In clusters 1 and 3, although adoption is also the majority form, this group also has a relevant participation in acquisition through redemption and by receiving as a gift, as forms of acquisition. In relation to how much they spend per month and whether or not they have health insurance, all clusters were homogeneous in their response, with the majority saying that the average expenditure is around BRL \$101 and BRL \$300 reais. In parallel, all clusters stated that they do not have a health plan for pets.

Finally, the dimension of the human-animal relationship that presented the highest frequency was the Pet-Oriented Lifestyle relationship. This dimension was the one that most explained the human-animal relationship in all clusters. However, the clusters showed differences in relation to the second dimension of the human-animal relationship. In cluster 1, the second most frequent option was Structure and Discipline - Utility Oriented. For clusters 2, 3 and 4, the second option was Anthropomorphism. For a better characterization and comparison of the clusters, four avatars were used to represent them. Figure 5 represents cluster 1, which we named João. Figure 6 represents cluster 2, which we will call Model Family 1. Figure 7 represents cluster 3, which we named Model Family 2. Finally, Figure 8 represents cluster 4, which we will call Maria.

Figure 5 – Sociodemographic characteristics and dimensions of the human-animal relationship in the João's cluster.

Characteristics Vs Cluster	João
Gender	Masculine
Marital Status	Single
How many people live in the household	Alone
Education	Complete High School
Income	Up to 1 minimum wage
Pet	Dog
How do you like to be called	Owner
Acquisition	Apotion
Average monthly spending	Between BRL \$101 and BRL \$300
Do you have a pet health plan?	No
1st human-animal dimension	Pet-Oriented Lifestyle
2nd human-animal dimension	Structure and Discipline - Utility Oriented

Figure 6 – Sociodemographic characteristics and dimensions of the human-animal relationship in the Model Family 1 cluster.

Characteristics Vs Cluster	Model Family 1
Gender	-
Marital Status	Family
How many people live in the household	Up to 6 people
Education	Complete High School
Income	Between 1 and 3 minimum wages
Pet	Dog
How do you like to be called	Owner
Acquisition	Apotion
Average monthly spending	Between BRL $101 and BRL $300
Do you have a pet health plan?	No
1st human-animal dimension	Pet-Oriented Lifestyle
2nd human-animal dimension	Anthropomorphism

Figure 7 – Sociodemographic characteristics and dimensions of the human-animal relationship in the Model Family 2 cluster.

Characteristics Vs Cluster	Model Family 2
Gender	-
Marital Status	Family
How many people live in the household	Up to 6 people
Education	Complete High School
Income	Between 1 and 3 minimum wages
Pet	Dog
How do you like to be called	Father/Mother
Acquisition	Apotion
Average monthly spending	Between BRL $101 and BRL $300
Do you have a pet health plan?	No
1st human-animal dimension	Pet-Oriented Lifestyle
2nd human-animal dimension	Anthropomorphism

Figure 8 – Sociodemographic characteristics and dimensions of the human-animal relationship in the Maria's cluster.

Characteristics Vs Cluster	Maria
Gender	Female
Marital Status	Single
How many people live in the household	Up to 6 people
Education	Complete High School
Income	Between 1 and 3 minimum wages
Pet	Dog
How do you like to be called	Mother
Acquisition	Apotion
Average monthly spending	Between BRL $101 and BRL $300
Do you have a pet health plan?	No
1st human-animal dimension	Pet-Oriented Lifestyle
2nd human-animal dimension	Anthropomorphism

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Finally, for a better comparative analysis of the preponderant intra-cluster characteristics, in Table 11 it is possible to see the main sociodemographic characteristics of each cluster, as well as the dimension of the human-animal relationship that most explains the cluster of people who live alone and people who live with someone else.

Table 11 – Sociodemographic characteristics and dimensions of the human-animal relationship between the clusters.

Characteristics Vs Cluster	João	Model Family 1	Model Family 2	Maria
Gender	Masculine	-	-	Female
Marital Status	Single	Family	Family	Single
How many people live in the household	Alone	Up to 6 people	Up to 6 people	Up to 6 people
Education	Complete High School	Complete High School	Complete High School	Complete High School
Income	Up to 1 minimum wage	Between 1 and 3 minimum wages	Between 1 and 3 minimum wages	Between 1 and 3 minimum wages
Pet	Dog	Dog	Dog	Dog
How do you like to be called	Owner	Owner	Father/Mother	Mother
Acquisition	Apotion	Apotion	Apotion	Apotion
Average monthly spending	Between BRL $101 and BRL $300	Between BRL $101 and BRL $300	Between BRL $101 and BRL $300	Between BRL $101 and BRL $300
Do you have a pet health plan?	No	No	No	No
1st human-animal dimension	Pet-Oriented Lifestyle	Pet-Oriented Lifestyle	Pet-Oriented Lifestyle	Pet-Oriented Lifestyle
2nd human-animal dimension	Structure and Discipline - Utility Oriented	Anthropomorphism	Anthropomorphism	Anthropomorphism

Source: the author (2024)

5. CONCLUSIONS

This study aimed to identify the dimensions that most explain the human-animal relationship in Brazilian homes. To this end, a survey was conducted throughout the national territory, on a sample of 690 people. As a result, four clusters stood out, with cluster 1 standing out for being predominantly male and cluster 4 for being predominantly female, both standing out for being mostly made up of people who live alone. Clusters 2 and 3 were made up of families with up to six people. In all clusters, the human-animal dimension "Pet-oriented lifestyle" was the one that most explained the human-animal relationship.

When analyzed the second human-animal dimension, in cluster 1, the dimension that was most manifested was "Structure and Discipline", while all other clusters were explained by the construct "Anthropomorphism". Although clusters 2, 3 and 4 have the second highest frequency of the human-animal dimension in anthropomorphism, which is characterized by treating animals as people, cluster 1 was the one that, in percentage terms, presented a greater relationship between income and spending on pets, compared to the other clusters. Interestingly, respondents from cluster 1 also expressed a greater preference for being called the pet's owner, while clusters 3 and 4 preferred to be called father or mother and pet.

In general, the study concludes that there are no considerable behavioral differences in the human-animal relationship between the cluster of people who live alone, when compared to different household arrangements. However, the study manages to point out that people who live alone tend to spend more on their pets than on different domestic arrangements. It is notable that none of the clusters had a health plan for pets, and there was a high score on the items: "I

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have already been financially strapped due to some treatment for my pet" and "I always spend more than planned when I go in some store to buy my pet's basic items."

It is interesting to highlight that the same people who score high in the statements above also say that "I have my pet's costs well planned". This suggests that, despite having the pet's costs planned, the purchase of pet products involves an emotional sphere, so that the pet owner always spends more than planned. These are substantial contributions to the entire pet industry and are indicative of how passionate and emotional a pet owner's purchasing process is at a pet store.

This work advances substantially in the problematization of the human-animal relationship, demonstrating quantitatively which dimensions most explain the human-animal relationship both in single-person homes and in different household arrangements. However, its greatest theoretical contribution is in relation to the method that was applied in this work, which consisted of validating and adapting three psychographic scales, which measure the dimensions of the human-animal relationship (Dotson; Hyatt, 2008; Boya et al., 2012 ; Chen et al., 2012), for the Brazilian market.

As a result, it was found that, once adapted, the scales were in line with the local reality. All constructs and the items that comprised them were understood by the interviewees. The dimensions had all the items that constituted their respective constructs understood and assimilated by dog and cat owners, with no adjustments being necessary in the original survey.

As a managerial contribution, one of the most important findings of this study, is to demonstrate how pet consumption is undersized in families' budgets, as the study manages to highlight, through pet owners' own statements, that they have already found themselves in situations of financial stress. because of your pet. Other managerial contribution of this study is to show the space that the pet industry has to work on a better value proposition for its products and services, especially health plans for pets, loyalty programs, which encourage the accumulation of points when purchasing of products or services, creation of marketplace applications, among others. The study also notes that there is room for better positioning of pet products and services, in order to help pet owners better estimate and organize their expenses.

It is recommended, for future studies, to delve deeper into the extent of validity of these scales, and test them with other pet owners, such as owners of birds, fish, hamsters, among others. Another suggestion for a future agenda would be to consider the different actors in the pet industry, given that this study was focused on the demand point of view. It would be interesting to understand how the supply side is organizing, as well as their marketing strategies for the different market segments of pet owners.

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