

The Value-Added Dog Food Market: Do Dog Owners Prefer Natural or Organic Dog Foods?

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Abstract

This research provides novel information on dog food attributes that influence a dog owner's food purchase decision, examining preferences as they relate to natural and organic ingredients using a discrete choice experiment. A total of 661 U.S. dog owners were surveyed. Results suggest respondents prefer dog food made with natural ingredients to dog foods made with conventional or organic ingredients. Although price was the most important attribute, ingredient source (e.g. natural, 75/25% organic/non-organic or 100/0% organic/non-organic) was more important than the other dog food attributes studied (package size, product recommendation, and product formula). The product combination that provided the highest level of survey respondent satisfaction was a 5-pound package of natural dog food that came recommended by a veterinarian and used an age and size-specific formula.

Keywords: canine, kibble, natural, nutrition, organic, preferences, value-added

1. Introduction

It is widely accepted that dogs were the first animal to be domesticated by humans approximately 16 300 years ago (Pang et al., 2009). This longstanding relationship has led to individual and societal bonds being formed between humans and dogs that are arguably stronger than any other animal species. According to the 2011-2012 American Pet Products Association (APPA) survey (2011), more households in the U.S. (46.3 million) own a dog than any other pet species. The APPA survey (2011) found that dog owners spend \$2 621 annually on their dogs, with \$254 being spent on food. Extrapolated to the estimated 78.2 million dogs owned in the U.S., it is estimated that \$19.9 billion is spent on dog food annually in the U.S.

More people are purchasing organic foods for themselves for health, food safety, and philosophical reasons (Harper & Makatouni, 2002). Previous research has documented that some consumers value organic and natural meats for their own consumption (i.e., Umberger, Thilmany McFadden, & Smith, 2009; Napolitano et al., 2010). For example, one study found that U.S. consumers are willing to pay a 103.5% premium for organic chicken breast marked with a USDA certified organic label (Van Loo, Caputo, Nayga Jr., Meullenet, & Ricke, 2011), and almost one-third of U.S. consumers in a second study were willing to pay a 10% premium for natural pork chops (Grannis & Thilmany, 2002). Food consumers with children appear more likely to purchase organic food items than food consumers without children (i.e., Thompson & Kidwell, 1997; Loureiro McCluskey & Mittelhammer, 2001). As dog owners may treat their dogs as family members or children (Hirschman, 1994), some dog owners may consider purchasing dog food made with natural or organic ingredients.

Kumcu and Woolverton (2010) identified a link between consumers' purchases of organic items for their own consumption and purchases of premium dog food for their canine companion. However, their research did not explore natural dog food purchases, nor did it identify the importance of ingredient type (natural vs. organic) relative to other dog food attributes. Thus, the objective of the current research is to provide novel information on dog food attributes that influence a dog owner's food purchase decision in the current dog food market, especially

as they relate to natural and organic ingredients. Demand for organic and natural dog foods has the potential to increase revenue opportunities within the agricultural value chain.

2. Methodology

This study explored dog food purchase preferences using a stated preference approach referred to as discrete choice analysis, where study participants are presented with a set of alternatives or choices, each alternative varying in its attributes or attribute levels. For example, in this study, participants were presented with a variety of different dog foods, each varying in key attributes such as price, ingredient type, and package size. Participants were asked to identify which alternative they would select (e.g., purchase given the opportunity). The process of presenting participants with choices and asking them to select the choice they would purchase if given the opportunity is often referred to as a discrete choice experiment. The approach is classified as a “stated preference” approach as participants are asked to identify what they would do if given the opportunity, as opposed to a “revealed preference” approach where consumers’ purchasing behaviors are observed. Discrete choice analysis can provide important insights into consumer behavior and is a popular stated preference tool used in marketing research. The approach/method has been used to explore the importance of attributes for a variety of agricultural products, such as beef steaks (Mennecke, Townsend, Hayes, & Lonergan, 2007), pork chops (Nilsson, Foster, & Lusk, 2006), and cattle (Tano, Kamuanga, Faminow, & Swallow, 2003; Wurzinger et al., 2006).

2.1 Discrete Choice Methodology

When consumers use a product (good or service), they obtain satisfaction or “utility” from its use. A product’s attributes help contribute to the product’s overall utility. For example, consumers may obtain some utility from having a low priced dog food. If this food is made with organic ingredients, they may obtain additional utility. Discrete choice analysis is based on the assumption that individuals (in this case, dog food shoppers) typically do not have the option of selecting a product that is optimal in every aspect and are forced to make tradeoffs between products and corresponding product attributes as they make purchase decisions.

Grounded in economic theory, discrete choice analysis assumes that consumers select products or services that provide the highest utility level among the choices available to them. The approach assumes that individual utility contains two components: a systematic component (i.e., product attributes) that is observable by researchers and an unobservable or random component that accounts for individual idiosyncrasies associated with choice. The unobserved random component of utility requires the researcher to use probabilities in modeling utility levels and corresponding choices. Data collected as a part of the discrete choice experiment are modeled using a multinomial (conditional) logit model and estimated using maximum likelihood estimation (Louviere, Hensher, & Swait, 2000).

Parameter estimates obtained via discrete choice analysis identify the marginal utility associated with dog food-specific attributes relative to a base attribute. For example, for the product-specific recommendation attribute, the effect of having a veterinarian recommendation was compared to the effect of the base recommendation category of not coming recommended. The base category was not included in the model to avoid estimation problems associated with perfect multicollinearity. Parameter estimates from the model were used to calculate the relative importance consumers place on product-specific attributes, as well as measure willingness to pay for specific product attributes and willingness to pay for a switch from one product attribute to another (i.e., Lusk, Nilsson, & Foster, 2007; Mayen, Marshall, & Lusk, 2007; Yue & Tong, 2009).

The utility consumers gain from a purchasing dry (kibble) dog food was modeled as a function of five dog food product-specific attributes (Table 1): a description of each of the five dog food product-specific attributes is provided below.

Table 1. Dog food attributes and possible levels used in the discrete choice experiment

Attribute	Possible Levels			
<i>Formula</i>	Age & size-specific Not age & size-specific			
<i>Ingredient source</i>	Conventional Made with natural ingredients Made with 75% organic ingredients Made with 100% organic ingredients			
<i>Package size</i>	5 lbs. 20 lbs. 30 lbs.			
<i>Recommendation</i>	Veterinarian recommended Paraprofessional recommended Did not come recommended			
<i>Price (per lb.)</i>	<u>Conventional</u>	<u>Natural</u>	<u>75% Organic</u>	<u>100% Organic</u>
	\$0.72	\$1.39	\$1.75	\$2.16
	\$1.67	\$1.87	\$2.00	\$2.48

2.1.1 Formula

Dog food manufacturers have sought to differentiate their products by developing a variety of food formulations. Examples include formulas for life stage (puppy, adult, senior), dog size (small breed, large breed), or breed (Lhasa Apso, Labrador Retriever). Dog foods may also be differentiated on the basis of a dog's nutrient requirements (e.g., lactating female, senior dog) or potential sensitivities (e.g., grain- or wheat-free). For simplicity, this study focused on the two most common food formula types: dog age and size. Two distinct formula options were available. The first food was formulated for both a specific age and size of dog. The second food was not formulated for any particular age or size of dog.

2.1.2 Ingredient Source

For this study, it was assumed that dog food can be made with ingredients from one of four sources: conventional, natural, 75% organic, or 100% organic. No definition of conventional ingredients was provided to respondents.

U.S. dog food labeling regulations are currently a complex issue. The term "all natural" can only be used on a dog food label when all ingredients, including any added vitamins and minerals, are natural; that is, not synthesized. For products that combine natural ingredients with chemically synthesized vitamins and minerals, the term "natural with added ..." may be used on the product label, where verbiage after "added" identifies the chemically synthesized ingredients (e.g., vitamins or minerals). The vast majority of dog foods use natural with added vitamins and minerals language, as it can be difficult and expensive to develop a nutritionally complete and balanced dog food without adding synthesized vitamins or minerals. However, for the purposes of this study, we used the term "made with natural ingredients" for simplicity. Respondents were informed that natural ingredients are defined by the Association of American Feed Control Officials (AAFCO), an association consisting of government agencies responsible for the regulation of animal feeds, as "a feed or ingredient derived solely from plant, animal or mined sources, either in its unprocessed state or having been subject to physical processing, heat processing, rendering, purification, extraction, hydrolysis, enzymolysis or fermentation, but not having been produced by or subjected to a chemically synthetic process and not containing any additives or processing aids that are chemically synthetic except in amounts as might occur unavoidably in good manufacturing practices" (AAFCO, 2013, p. 347).

Marketing a dog food as "organic" in the United States is very complicated. The AAFCO defines the term "organic" when used in dog food as "a formula feed or a specific ingredient within a formula feed that has been produced and handled in compliance with the requirements of the USDA National Organic Program" (AAFCO, 2008, p. 345). Dog food can be made with any mix of organic and non-organic ingredients. Dog foods containing

between 70 and 95% organic ingredients may use the term “organic” – but not the USDA seal – on their label (USDA-AMS, 2008). A manufacturer can use either the USDA certified organic seal or the term “organic” on the packaging if the dog food includes more than 95% certified organic ingredients, and can use the term “100% organic” if this applies to the relevant ingredient (USDA-AMS, 2008). Respondents were also provided information regarding organic ingredients. They were told: “according to the U.S. Department of Agriculture (USDA), organic ingredients come from animals that are given no antibiotics or growth hormones. Organic food is produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; or ionizing radiation (USDA-AMS, 2008, online). A dog food ingredient is certified organic by an independent, accredited third party, who verifies that the ingredient contained in the food meets the definition of organic.”

In this study, respondents were informed that “for the purposes of this study, organic dog foods may be either a 100% organic dog food (all of the ingredients in the dog food are certified to be organic) or a dog food made with 75% organic ingredients (75% of the ingredients in the dog food are certified to be organic).” Even dog foods that utilize more than 95% organic ingredients include vitamins and minerals that have not been certified organic (e.g. trace vitamins may be synthesized) in order to create a nutritionally balanced product: thus, a completely organic dog food does not currently exist in the market. Although this design does not completely mirror today’s dog food market, one of the benefits of the stated preference approach is the ability to explore consumer preferences toward products that do not currently exist (Louviere et al., 2000).

2.1.3 Package Size

In this study, respondents were offered dog food packaging sizes of 5 pounds, 20 pounds, and 30 pounds, as these sizes are commonly observed in the U.S. dog food market.

2.1.4 Recommendation

Consumers often seek the advice of others when making purchase decisions (e.g., East, Hammond, Lomax, & Robinson, 2005; Trusov, Bucklin, & Pauwels, 2009). Dog food manufacturers can use veterinarian recommendations in their marketing. Individual veterinarians may also recommend a specific dog food to their clients. Anecdotal evidence suggests some dog owners follow nutritional advice given to them by a breeder, trainer, or groomer (hereafter referred to as a “paraprofessional”). For the purposes of this study, a dog food had one of three recommendation sources: a veterinarian, a paraprofessional, or did not come recommended.

2.1.5 Price

The price per pound of a dog food can vary substantially, in part determined by the type of ingredients used. In this study, respondents were informed that “dog foods have a wide range of prices per package. For clarity, we also report the dog food’s equivalent price per pound, because the package size helps determine the total package cost.” A range of current dog food prices were obtained using an ad hoc survey of dog food sold at local dog food retailers. From this, two realistic price points for each of the four dog food ingredient sources (conventional, natural, 75% organic, 100% organic) were assigned.

2.2 Designing Dog Food Product Choices

Each of the five dog food attributes (formula, ingredient source, package size, recommendation, and price) had multiple possible levels (Table 1). Product choices, with varying product attribute combinations, were developed using the %MktEX macro available in SAS (SAS, 2004). The macro helps analysts develop a smaller, more manageable subset of choices that can be presented to survey participants. Choices that included recommendations made veterinarians or paraprofessionals for products that did not have an age- or size-specific formula were removed, resulting in sixteen final products. Respondents were presented with four choice sets, each choice set contained four unique dog food products (a conventional product, a natural product, a 75% organic product, and a 100% organic product). Within each choice set, respondents were also provided the option of not choosing any product, resulting in a choice set with five options from which to choose. From each choice set, respondents were asked to select their most preferred dog food. An example of a choice set posed to survey respondents is contained in Figure 1.

Consider the table below. Each square represents dog food packages that are identical except for the differences identified on the label. If given the option to select from among these 4 packages of **DRY DOG FOOD (kibble)**, which would you purchase? (Select your choice by checking the appropriate box. Please select only one choice.)

<i>Choice A</i>	<i>Choice B</i>	<i>Choice C</i>	<i>Choice D</i>	<i>Choice E</i>
Dog Food made with Conventional Ingredients	Dog Food made with Natural Ingredients	Dog Food made with 75% Organic Ingredients	100% Organic Dog Food	None of These Choices
Recommended by a Breeder, Trainer, or Groomer	Recommended by a Veterinarian	No Recommendation	No Recommendation	
Size & Age Specific Formula	Size & Age Specific Formula	Size & Age Specific Formula	No Specified Formula	
30 lb. package	5 lb. package	20 lb. package	20 lb. package	
\$21.54 per package (\$0.72 per pound)	\$9.37 per package (\$1.87 per pound)	\$40.00 per package (\$2.00 per pound)	\$43.18 per package (\$2.16 per pound)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 1. Sample choice set posed to survey respondents

2.3 Data Collection

The discrete choice experiment and survey instrument were developed after conducting a thorough review of current dog foods available in the market. The instrument was pretested with a convenience sample of university student subjects who owned dogs ($n = 15$) and revised to improve its clarity. The online panel survey was conducted May 14-18th, 2012. Survey respondents were members of an online market research panel managed by an independent market research company, Cint (2014). Cint compensates respondents for their participation in market research surveys. Survey respondents were required to be at least 18 years of age and own a dog at the time of the survey. A sample of 4 410 panelists, representative of the United States in terms of U.S. census region of residence, were invited to participate in the survey via email to meet a sample quota of 700 dog-owning respondents. A total of 661 responses were used in the analysis, as some responses were missing data necessary to conduct the discrete choice analysis (e.g., respondent declined to provide demographic information). The ability of participants to opt out of the survey after learning its purpose (to comply with institutional review board policy) may have resulted in a sample representative more of those interested in dog nutrition issues. Moreover, as no attempt could be made to ensure a sample representative of U.S. dog owners (sampling frame unknown), caution must be made when attempting to make inferences about U.S. dog owners as a whole from the results of this study. Although online surveys may suffer from issues such as limited distribution (Miller & Dickson, 2001) and difficulties in measuring representativeness of the sample/sampling frame (Miller & Dickson, 2001; Evans & Mathur, 2005; Wright, 2005) these surveys do allow researchers to reach a large segment of the population (Sheehan, 2002; Evans & Mathur, 2005).

3. Results and Discussion

Dog owners in 49 states and the District of Columbia completed the survey instrument (Table 2). Over half (65.4%) of dog owners reported owning one dog, while 22.7% owned two dogs, and 12.0% owned three or more dogs. Few (2.3%) respondents were directly involved in the dog industry (e.g., breeder, trainer). Most respondents either shared responsibility or had primary responsibility for the dog's care (94.0%), while relatively few respondents acknowledged someone else had primary responsibility for the dog (6.0%). Approximately one-tenth

of respondents (10.6%) spent more than 50% of their total weekly household food expenditures on organic food for themselves.

Table 2. Demographics of dog-owning respondents

Demographic	<i>n</i> ¹	Survey, %
<i>Age</i>		
Under 20 yrs	8	1.2
20-34 yrs	146	22.1
35-54 yrs	337	51.0
55-64 yrs	76	11.5
Over 64 yrs	94	14.2
<i>Census Region</i>		
Midwest	148	22.5
Northeast	122	18.6
South	225	34.2
West	162	24.7
<i>Gender</i>		
Male	283	42.8
Female	378	57.2
<i>Household Income</i>		
Less than \$24,999	127	19.2
\$25,000 - \$49,999	249	37.7
\$50,000 - \$99,999	227	34.3
\$100,000 - \$149,999	45	6.8
\$150,000 or more	13	2.0
<i>Marital Status</i>		
Single	145	21.9
Married	384	58.1
Divorced, widowed, or separated	131	19.8
Other	1	0.2
<i>Race</i>		
American Indian or Alaska Native	8	1.2
Asian	16	2.4
Black or African American	42	6.4
Hispanic or Latino	51	7.7
Native Hawaiian or Pacific Islander	2	0.3
White or Caucasian	540	81.7
Other	2	0.3

¹May not total 661 as not all respondents chose to respond to all demographic questions.

The conditional logit model of dog owners' dog food preferences was estimated using NLOGIT statistical software (Econometric Software, Inc. 2007). Model results are displayed in Table 3. Model goodness-of-fit was measured by comparing the model log-likelihood with that of an intercept-only model (Greene, 2000). The model's maximized log-likelihood value was significantly different from the intercept-only model ($p < 0.01$), indicating the included attribute variables helped explain consumers' utility functions.

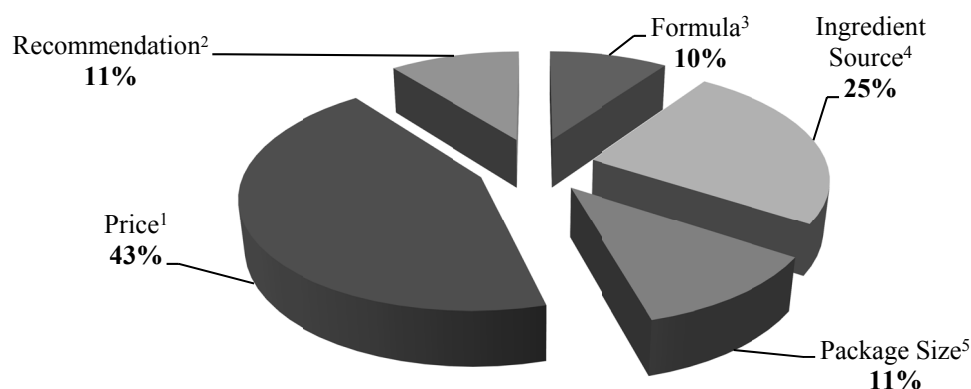
Table 3. Conditional logit model results

Variable	Coefficient	SE	P-value
Ingredient Source			
Conventional	1.84	0.25	<0.0001
Natural	3.00	0.32	<0.0001
75% Organic	2.46	0.34	<0.0001
100% Organic	2.58	0.38	<0.0001
Age and dog size specific formula	0.45	0.08	<0.0001
Package Size	-0.02	0.00	<0.0001
Price	-1.16	0.15	<0.0001
Recommendation			
Recommended by a Paraprofessional	0.24	0.08	0.0021
Recommended by a Veterinarian	0.49	0.08	<0.0001

Log likelihood ratio: -3836.19.

3.1 Product-Specific Attributes

Parameter estimates reflect the utility gained or lost (in the case of a negative coefficient) by consumers by including the attribute or attribute level. Relative importance and willingness to pay estimates provide a clear, concise interpretation of model coefficients for product-specific dog food attributes. Parameter estimates were used to calculate the relative importance of (Figure 2) and willingness to pay for (Table 4) each dog food attribute. A discussion of findings as they relate to each of the five dog food attributes is included below.



¹In \$/lb.

²Includes having a recommendation by a paraprofessional or veterinarian.

³Includes having an age and size-specific formula.

⁴Includes having a dog food made with natural, 75%, or 100% organic ingredients.

⁵In lbs.

Figure 2. Relative importance of dog food attributes included in the discrete choice experiment. Values represent percent of total utility gained from a dog food purchase

Table 4. Willingness to pay for selected attributes included in the discrete choice experiment

Attribute	Willingness to Pay, \$/lb.
Ingredient Source ¹	
Conventional	\$1.58
Natural	\$2.58
75% Organic	\$2.12
100% Organic	\$2.22
Age and size specific formula ²	\$0.39
Package Size ³	-\$0.02
Recommendation ⁴	
Recommended by a Paraprofessional	\$0.21
Recommended by a Veterinarian	\$0.42

¹Relative to not purchasing a dog food.

²Relative to a dog food made without an age and size-specific formula.

³For a one pound increase in package size.

⁴Relative to a dog food that did not come recommended.

Price was the most important of the five dog food attributes explored in this model (Figure 2). Consistent with economic theory, respondents preferred a lower priced dog food when all other factors were equal.

Significant positive willingness to pay for all four ingredient sources indicates that, all else equal, purchasing a dog food provides more utility than not purchasing a dog food. Respondents preferred a dog food with increased amounts of organic ingredients: consumers were willing to pay more for a dog food made with 100% organic ingredients than a dog food made with 75% organic ingredients. The results of the current study may mirror the increased demand for organic food products for human consumption (e.g., Boland & Schroeder, 2000; Zhang, Huang, Lin, Epperson, & Houston, 2011). Respondents were willing to pay more for a dog food made with natural ingredients than a dog food made with a mix of organic ingredients (75/25% organic/non-organic or 100/0% organic/non-organic). Ingredient source (e.g., natural, 75% organic, 100% organic) was more important than the other remaining dog food attributes (package size, recommendation, formula).

Table 5. Willingness to pay for a change in ingredient source

Switch From	To	Willingness to Pay, \$/lb.
Conventional	Natural	\$0.99
Conventional	75% Organic	\$0.53
Conventional	100% Organic	\$0.63
Natural	75% Organic	-\$0.47
Natural	100% Organic	-\$0.36
75% Organic	100% Organic	\$0.10

Respondents were willing to pay a premium to switch from a dog food made from conventional ingredients to one made with natural ingredients (Table 5). The additional revenue obtained from an increasingly organic dog food product may outweigh the cost of production, depending on how much more consumers are willing to pay and the cost of producing organic food. Further research is needed to quantify this potential economic benefit.

The dog food made with natural ingredients was the most preferred, in that it contributed more to surveyed participants' utility than other ingredient types, despite the more stringent regulations that currently govern the use of the term "organic" to describe ingredients on dog foods. For simplicity, the differences between the terms "all natural" and "made with natural ingredients" were not discussed with respondents prior to completing the discrete choice experiment. Instead, the natural dog food option was simply labeled as "made with natural ingredients."

Some respondents may have assumed that this implied all ingredients (including added vitamins and minerals) were natural. Previous research suggests consumers may not be aware of all the differences between natural and organic products (Abrams, Meyers, & Irani, 2009). Although it is possible that respondents did not understand the technical differences between the terms “natural” and “organic,” despite their definitions being included in the survey, respondents preferred a natural dog food to an organic or conventional dog food.

Consumer willingness to pay declined with each additional pound of food included in the dog food package, i.e., participant choices suggested they would pay less per pound for dog food packaged in larger packages. This may be due to consumer preferences regarding storage, spoilage, or convenience of carrying a smaller dog food package. Owners may not want to store large packages of kibble, most of which are not sold in re-sealable packaging. This means a storage container may be needed to keep food fresh and/or out of the dog’s way. Kibble may also become stale if not fed in a timely fashion; owners of small dogs will find it difficult to feed a large bag of food in a short period of time. This finding may also reflect current choices available to consumers: many dog foods sold in larger packages (in bulk) are sold at a per-pound discount.

The positive willingness to pay for a paraprofessional-recommended dog food (relative to no recommendation) suggests that recommendations, even if not made by a nutritionally knowledgeable, qualified individual, influence consumers’ dog food purchase decisions. Paraprofessionals may have anecdotal evidence of a particular dog food’s efficacy without formal education in animal nutrition, yet consumers still place a premium on their opinion over a dog food that does not come recommended. This substantiates previous market research findings, which suggests word-of-mouth recommendations can be important selection factors, especially when the recommending individual “knows the decision maker personally” (Duhan, Johnson, Wilcox, & Harrell, 1997, p. 284). Respondents valued a veterinarian’s recommendation more highly than a paraprofessional’s recommendation when purchasing a dog food. More research is needed to explore how a personal relationship between an owner and their dog’s veterinarian can influence the dog owner’s dog food choice. This study did not specify if the veterinarian recommendation was from the respondent’s personal veterinarian or an unknown veterinarian (e.g., television advertised claim).

A positive willingness to pay for the formula attribute provides a quantitative explanation for the continued appearance of increasingly differentiated formulas in the dog food market, as consumers appear willing to pay a premium for an age and size-specific formula over a dog food made without an age and size-specific formula.

3.2 Marketing Implications

The results of the current study carry interesting implications for dog food marketers and others involved in the dog food supply chain. For example, changes to the packaging sizes available may be an avenue for further differentiation within the market. Currently, consumers shopping for bagged, dry kibble via traditional outlets (e.g., retail and grocery stores) have relatively few package size choices from which to select. Data from the current study showed that increasing package size negatively influenced dog owner utility.

Even though all dog foods commercially produced and sold in the United States must meet standards developed by the Association of American Feed Control Officials (AAFCO), this does not mean that all dog foods are nutritionally identical or include the same ingredients. Similar to the increasingly differentiated human food industry, dog food marketing channel participants are seeking new ways to help their product stand apart from the competition. There appears to be a growing market for differentiated dog foods, especially those that may be considered value-added by consumers. Results from the current study indicated that respondents preferred a natural dog food. If a natural dog food is, indeed, preferred over an organic dog food, the implications for the dog food value chain could be widespread. Dry dog food (kibble) often has many ingredients: a dog food made with natural ingredients (excluding the necessary added vitamins and minerals) could source a variety of naturally-produced inputs. Increased demand for these inputs can affect a wide variety of value chain participants (e.g., farmers, ranchers, agricultural input companies, dog food manufacturers).

4. Conclusions

By exploring U.S. dog owners’ attitudes surrounding dog food products using a discrete choice experiment, this study sought to better understand the product attributes influencing an owner’s dog food purchase decision. The current research particularly focused on dog owners’ preferences for natural and organic dog food choices. Surveyed dog owners were willing to pay the most (per pound) for a natural dog food of the dog food attributes studied. The product combination that provided the highest level of survey respondent utility or satisfaction was a 5-pound package of natural dog food that came recommended by a veterinarian and used an age and size-specific formula.

Despite the growing availability of value-added dog foods such as natural and organic, little academic research has examined marketing issues related to this emerging market. More than a decade ago, previous research identified the need to “determine how pet food purchase decisions are made” (Aylesworth, Chapman, & Dobscha, 1999, p. 6). Little research in the interim, however, has explored this purchase decision. By analyzing U.S. consumer purchases, Kumcu and Woolverton (2010) identified a link between consumers’ purchases of organic items for their own consumption and purchases of premium dog food for their canine companion. The current study delves deeper into this issue by exploring natural dog food purchases and identifying the importance of ingredient type (e.g., natural, organic) relative to other dog food attributes.

This study is one of the few that has explored the emerging market of natural and organic dog foods, although the results from the current study should be validated with a larger sample of U.S. dog owners. The authors acknowledge that more research is needed to determine if consumers understand the differences between dog foods labeled as either natural or organic. Research should also examine what proportion of organic ingredients provide the highest consumer utility, and at what price point an increasingly organic dog food is no longer attractive to consumers. The influence of a personal relationship between a dog owner and dog food recommender (veterinarian, paraprofessional) should be examined in greater depth. Finally, additional work is needed to explore how dog owners’ socio-demographic characteristics influence their preferences for dog food attributes.

In recent years the societal trend is for pet owners to see their pets as part of the family or as “child substitutes” (Hirschman, 1994, p. 618). Pet “parents” may anthropomorphize their dog’s food selection, being hesitant to offer food to their dog that sounds unappealing to them as humans. It has been suggested that the pet industry promotes food “as a means of demonstrating affection” (McGreevy & Bennett, 2010, p. 11). Thus the dog food industry has capitalized on these trends by marketing dog food to pet parents (Kumcu & Woolverton, 2010). Further research is required to examine the relationship of owner level of “bonding” to their dog and willingness to pay for value-added dog foods with a higher price point.

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