

Human Dimensions of Dog Population Management

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Dog Population Management: What is it?



Dog Population Management (DPM) encompasses a range of strategies and actions aimed at addressing the challenges posed by uncontrolled, free-roaming dogs.

These Challenges Include:



- **Public health:** zoonotic disease risks; dog bites and injuries, etc.
- **Community well-being:** nuisance, noise, fear of dogs, etc., especially in disadvantaged communities with limited resources—social inequity
- **Environmental impacts:** pollution, predation on wildlife/livestock, degradation of natural areas, etc.
- **Dog welfare:** animal suffering due to disease, injury, malnutrition, etc.

NB: The global population of dogs is estimated at 1 billion of which about 70% are uncontrolled and free-roaming.

Approaches to mitigating challenges posed by free-roaming dogs (FRDs):

- Low-cost surgical and non-surgical sterilization programs (TNR)
- Vaccination programs
- Sheltering and rehoming programs
- Restricting access to vital resources, etc.
- Lethal controls



None of these approaches is likely to be successful without also addressing the “human factors”



The Human Factors

- Socioeconomic and demographic factors
- Psychological factors—attitudes to dogs and DPM

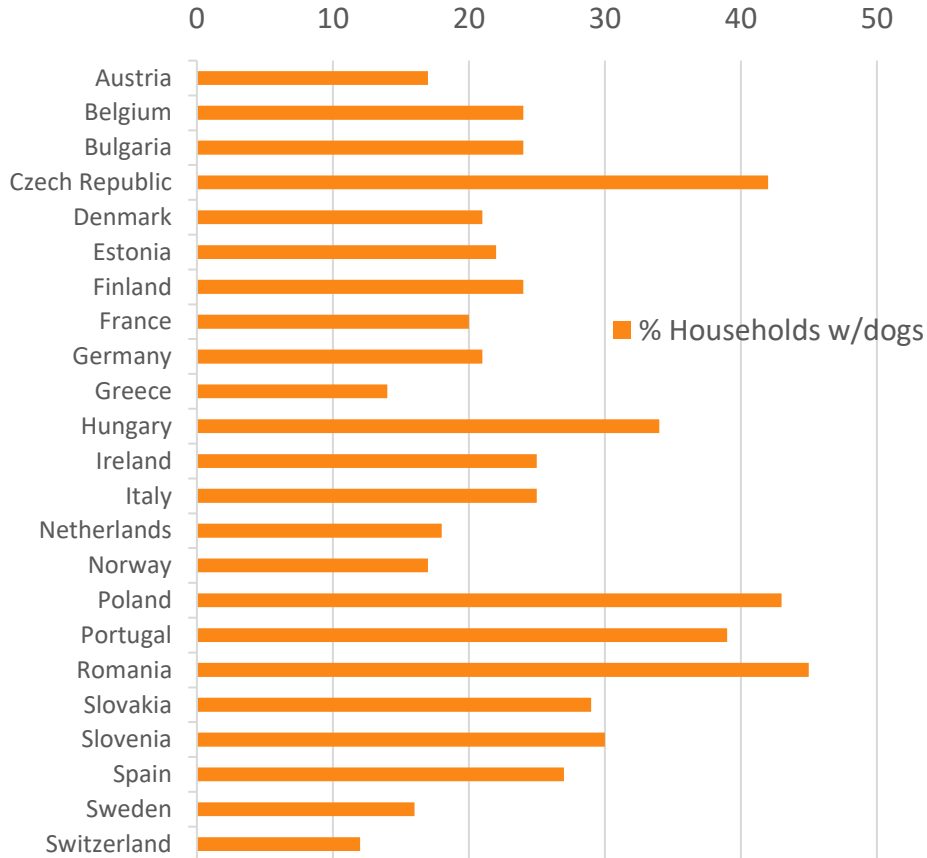
Socioeconomic and Demographic Influences on Dog Ownership



Highest rates of ownership in predominantly rural regions in the global south

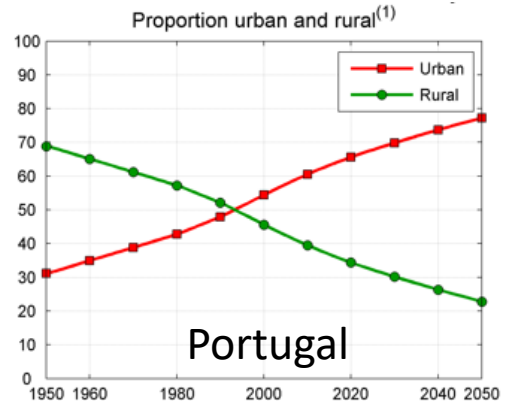
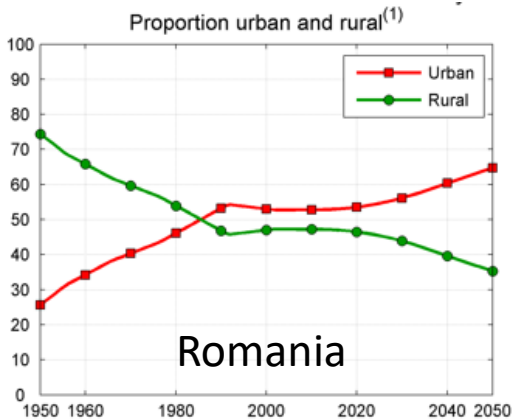
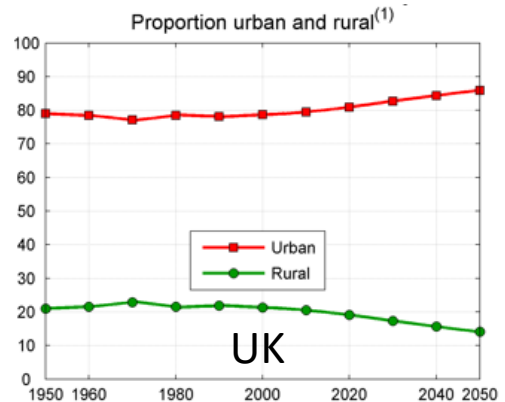
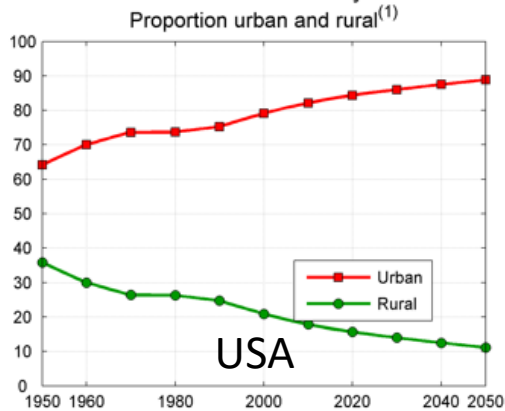
- Chile (rural) = **89%** households (Acosta-Jamett *et al.*, 2010)
- Samoa = **88%** (Farnsworth *et al.*, 2012)
- Mexico (Miacatlan) = **85%** (Orihuela & Solano, 1995).
- Mexico (Yucatan) = **64-73%** (Ortega-Pacheco *et al.*, 2007).
- Zimbabwe (rural) = **62%** (Butler & Bingham, 2000).
- Brazil = **49%** (Euromonitor Int., 2020)
- Bahamas = **47%** (Fielding & Mather, 2000).
- Australia = **39%** (RSPCA, 2017)
- Dominica = **38.6%** (Alie *et al.*, 2007).
- USA = **38.5%** (Eurom. Int. 2020).
- United Kingdom = **33%** (FEDIAF, 2021).
- Tanzania (rural) = **24%** (Knobel *et al.*, 2008).
- Taiwan = **20%** (Eurom. Int. 2020).
- Sweden = **16%** (FEDIAF 2021).
- Switzerland = **12%** (FEDIAF 2021).

Rates of Dog Ownership in Europe

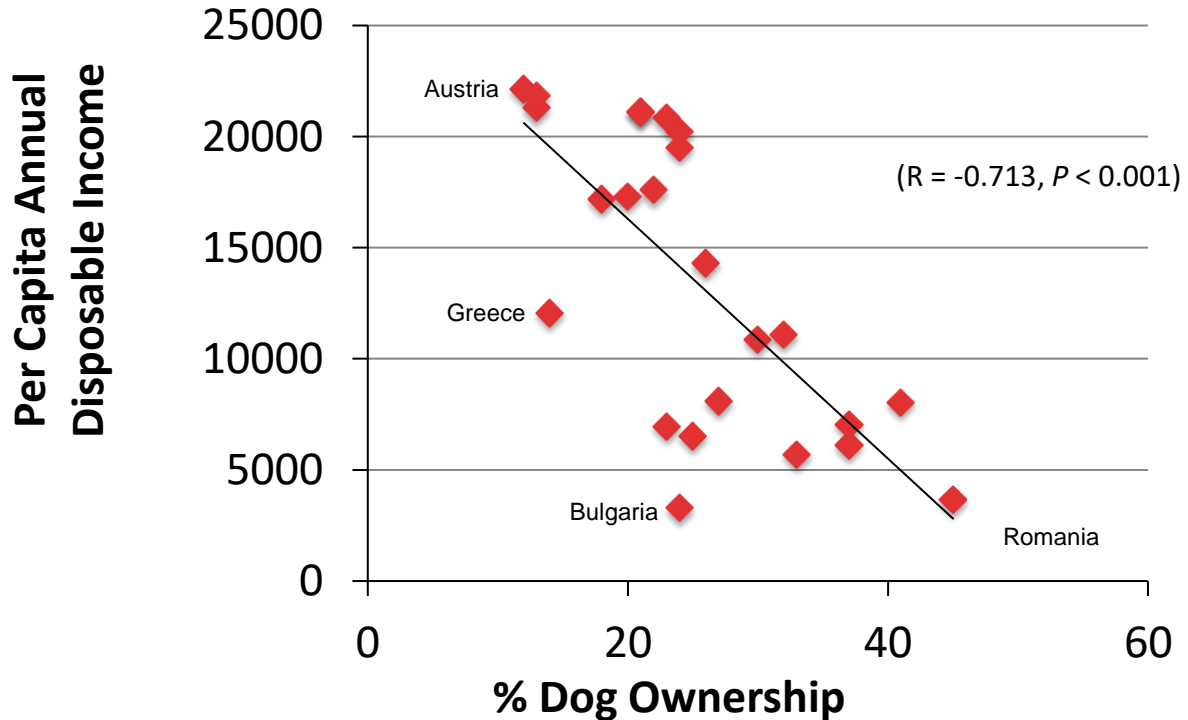


Source: FEDIAF, 2021

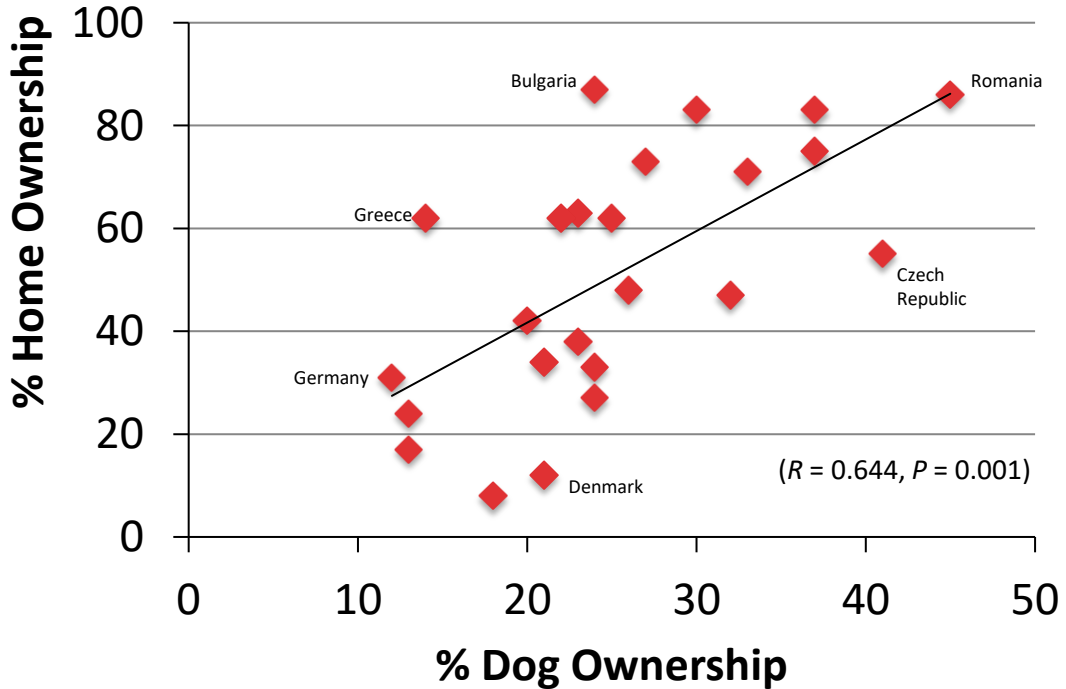
International Rates of Urbanization



Relationship between Dog Ownership and Per Capita Income across Europe (Euromonitor, 2012)



Relationship between % Home Ownership and % Dog Ownership in Europe (Euromonitor, 2012)



“The single most important influence on dog numbers is the attitude of humans”

Matter, H.C. & Daniels, T.J., 2000. In: C.N.L. Macpherson et al., eds. *Dogs, Zoonoses and Public Health*.

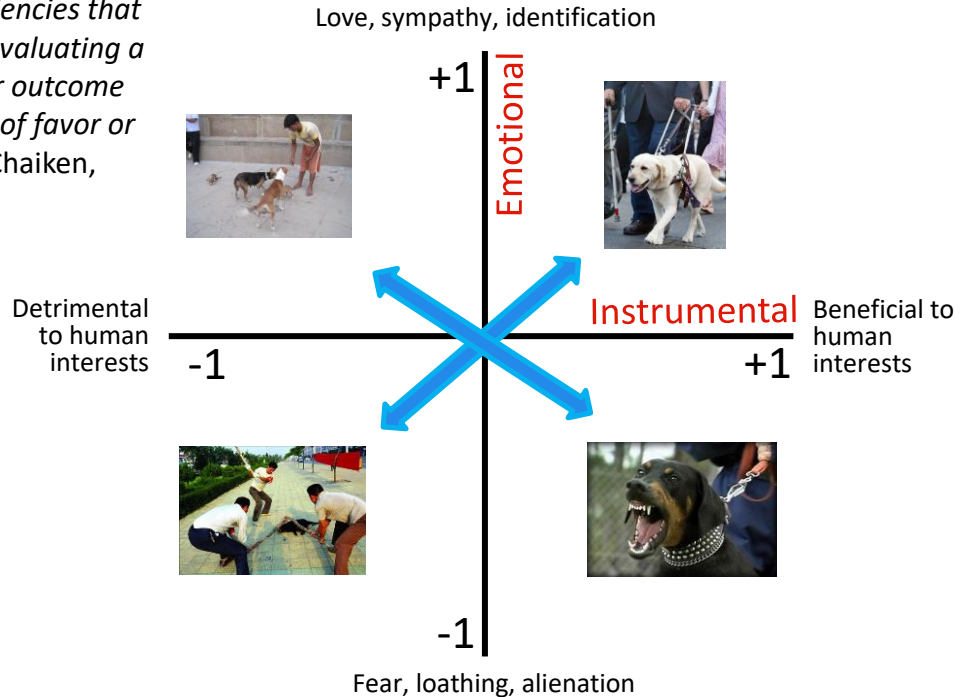


Human attitudes influence:

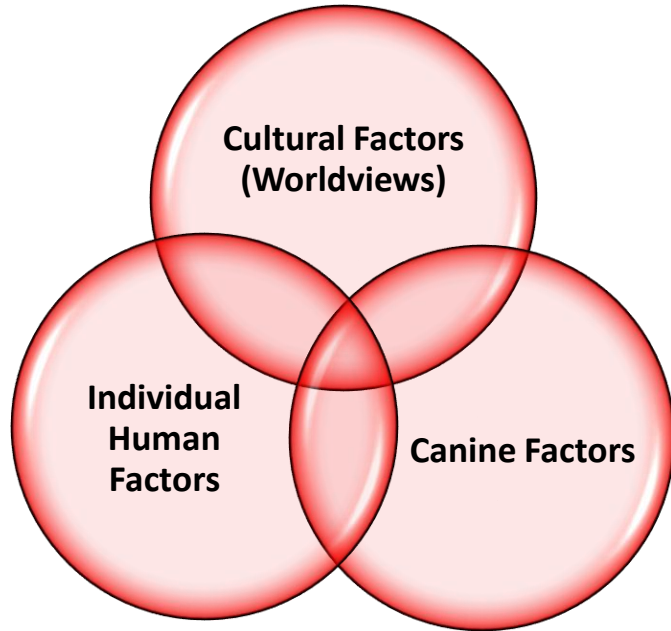
- The number and distribution of dogs in any given country, region, or area.
- Patterns of dog-keeping: levels of restraint/confinement, supervision, provisioning, and care.
- The acceptability of different DPM interventions (e.g., shelter relinquishment, sterilization, adoption, euthanasia, etc.).
- The willingness of people to touch or handle dogs.
- Levels of exposure to zoonotic disease and other dog-related risks.
- Overall value assigned to dogs, etc.

Attitudes to Dogs

'Attitudes' defined as *psychological tendencies that are expressed by evaluating a particular entity or outcome with some degree of favor or disfavor* (Eagly & Chaiken, 1993).



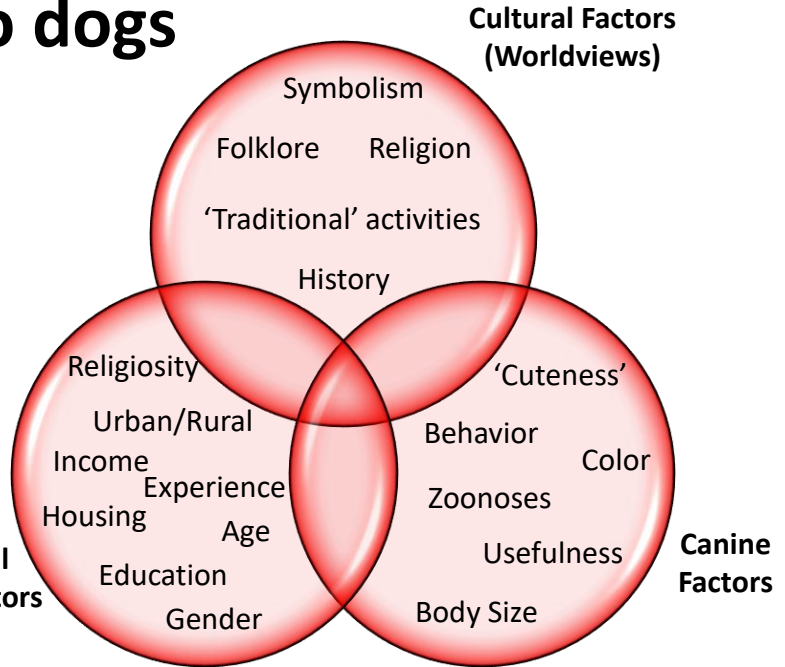
Factors that influence attitudes to dogs (attitude modifiers)



Factors that influence attitudes to dogs



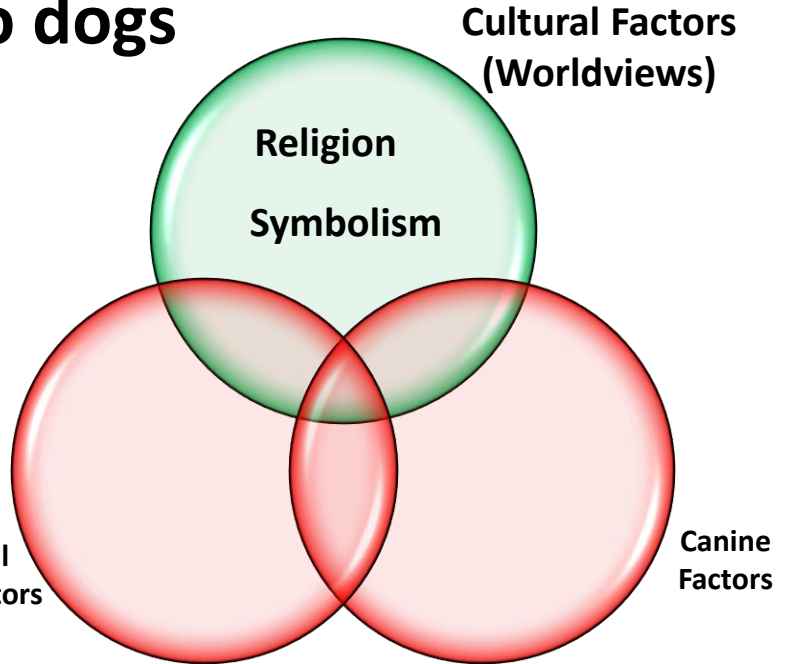
Individual Human Factors



Factors that influence attitudes to dogs



**Individual
Human Factors**



Dogs in Asia: Interaction of Religion, Symbolism, and Canine Behavior

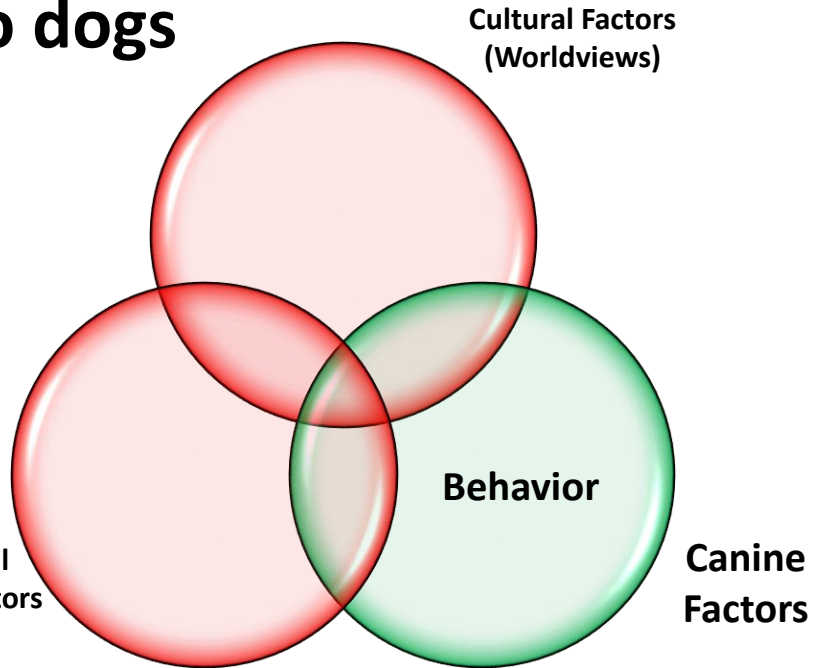


- According to most Asian religions (Judaism, Islam, Hinduism and Buddhism), dogs are ‘unclean’ animals, and therefore inedible and, in some cases, untouchable.
- Negative attitudes stem from the dog’s tendency to openly violate human behavioral taboos, particularly incest and the consumption of garbage/excrement (Aviela, 2011; Lodrick, 2009).
- However, the dog’s obvious closeness to, and dependence on, humans also generates sympathy and compassion.
- Thus, the dog becomes a symbol of the ‘pariah’—the canine equivalent of a human outcast—ostracized and shunned for engaging in unacceptable or ‘sinful’ behavior, while also pitied for its degraded social status.

Factors that influence attitudes to dogs



**Individual
Human Factors**



Human Attitudes to Dogs Depend on How We Perceive Their Behavior



'Good' Dog Behavior



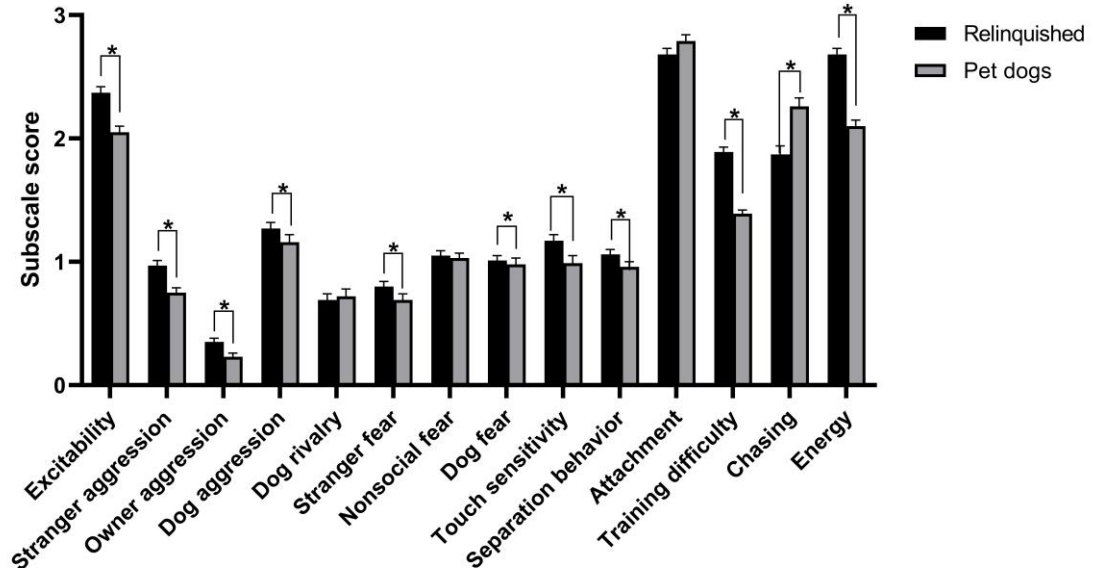
- ❖ Loyal companion / social support provider
- ❖ Faithful servant
- ❖ Tireless worker
- ❖ Selfless protector

'Bad' Dog Behavior



- ❖ Unprovoked aggression / hostility
- ❖ Open promiscuity / incest
- ❖ Predation
- ❖ Scavenging
- ❖ Nuisance—noise, dog waste, etc.

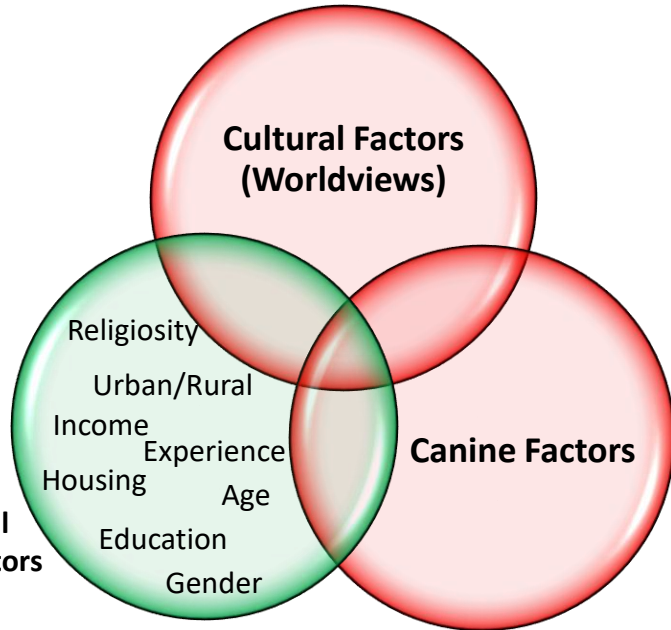
Dogs Relinquished to Animal Shelters Display More Behavior Problems than a Matched Sample of Current Pets



Factors that influence attitudes to dogs



**Individual
Human Factors**



Influence of Demographic, Cultural and Experiential Factors on Attitudes to Dogs

A Case Study from Taiwan

Republic of China on Taiwan



Area: 36,000 km²

Human population: 22 million.

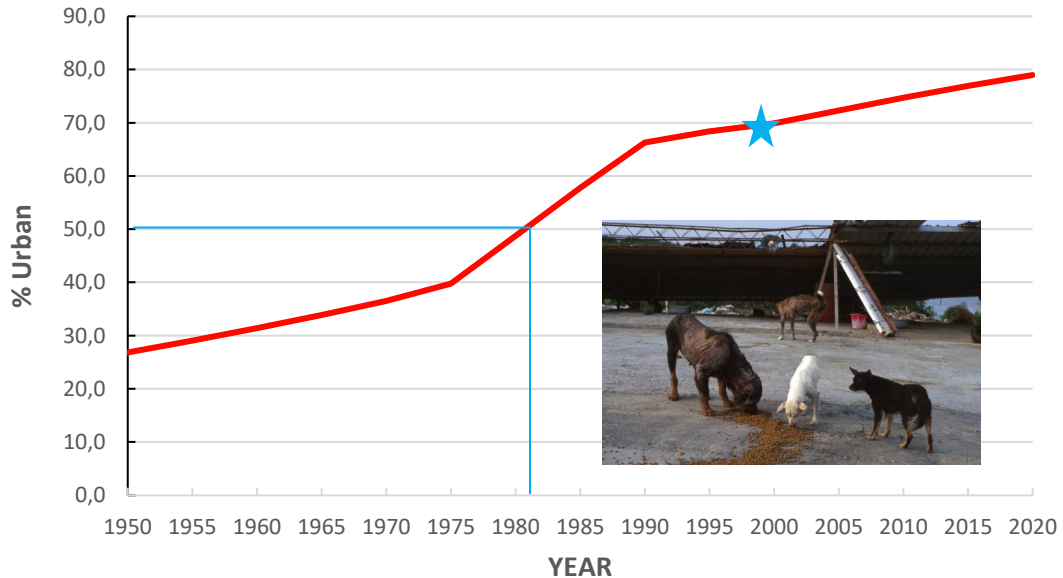
Roaming dog population: 1.3 million.



Hsu *et al.* 2003. *Journal of Applied Animal Welfare Science*, 6: 1-23;
Serpell, J.A. & Hsu, Y. 2016. In *Companion Animals in Everyday Life*, ed. M. Pregowski. London: Palgrave McMillan.

The FRD Population of Taiwan Exploded in the Late 1970s

Taiwan Urbanization Trends



Goals of the Study



- ❖ To explore and describe Taiwanese attitudes to dogs.
- ❖ To examine the relationship between dog-related attitudes and behavior toward dogs (validation).
- ❖ To determine the influence of demographic, cultural and experiential factors on the development of these attitudes.
- ❖ To assess how these attitudes contributed to the FRD problem.

Acknowledgements: Yuying Hsu and Lucia Liu.

Substandard Conditions in Shelters

Out of 67 public and private animal control or holding facilities in Taiwan investigated by WSPA, 62 were classified as “poor” or “unacceptable” (Leney & Marks,1996):



“The majority of dogs seen..... whether in new or old facilities were suffering with severe skin problems, were visibly traumatized, with many close to death. Dead and decaying dogs were seen amongst the living, also dogs eating dogs.”

Methods



- ❖ Open-ended, face-to-face interviews with 27 local informants—dog owners and non-owners; dog feeders; animal protectionists; veterinarians; academics; politicians; religious spokespersons; urban, suburban, rural residents—regarding dog-related knowledge and experience, attitudes to dogs, and perceptions of the FRD problem and its causes.
- ❖ Interviews recorded on audiotape; transcribed, and broken down into major recurring content themes, topics, and issues.

Methods

Interviews with key informants used to develop a 95-item survey questionnaire divided into six sections:

- ❖ Demographic information
- ❖ General attitudes to dogs (Likert scales)
- ❖ Attitudes toward free-roaming dogs (Likert scales)
- ❖ Experience of dog release/abandonment/allowing dogs to roam
- ❖ Dog ownership history
- ❖ Attitudes toward, and care of, any currently-owned dogs.

]

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I love dogs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Keeping dogs for companionship is a waste of money.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Methods

- ❖ Questionnaire translated into Chinese; reviewed, pre-tested and modified by the Office of Survey Research, Academia Sinica, Taiwan.
- ❖ 5760 residential telephone numbers selected at random from the Taiwan directory and dialed, 2510 people answered, and 509 (20%) declined to be interviewed. Average questionnaire completion time 12.5 minutes.
- ❖ Resulted in a sample of 2001 adult (18+ years) Taiwanese residents. Demographics of the sample closely matched Taiwan census information.

Results

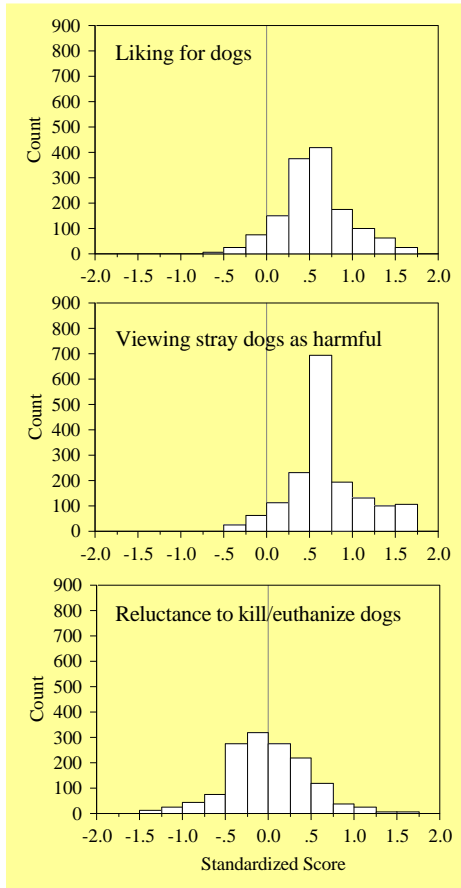
Factor Analysis of Survey Results Identified Three Distinct Dog-related Attitude Dimensions or Factors

Attitude Dimension 1: “Liking for Dogs” (Emotional)

Attitude dimension 2: “Viewing Stray Dogs as Harmful”
(Instrumental)

Attitude Dimension 3: “Reluctance to Kill/Euthanize Unwanted Dogs” (Ethical)

Frequency distribution of Attitude Dimension scores



Results

Influence of Demographics, Culture and Early Experience

Greater “liking for dogs” was associated with:

- Higher income ($P < 0.028$)
- Growing up in urban/suburban vs. rural areas ($P < 0.009$)
- Being younger ($P < 0.001$)
- Growing up with dogs during childhood ($P < 0.001$)
 - Particularly if these dogs lived mainly indoors or were free to go in and out of the house vs. restrained or kept outside.

Usually ‘guard’ dogs

Results

Influence of Demographics, Culture and Early Experience

Greater tendency to “view stray dogs as harmful” was associated with:

- Being older ($P < 0.001$)
- Being better educated ($P < 0.001$)
- Being married ($P < 0.001$)
- Growing up with dogs during childhood ($P < 0.001$)
 - But only if these dogs were not allowed inside the house.

Results

Influence of Demographics, Culture and Early Experience

Greater “reluctance to kill/euthanize dogs” was associated with:

- Being female ($P < 0.001$)
- Being unmarried ($P < 0.001$)
- Having lower income ($P < 0.002$)
- Having traditional Asian religious beliefs vs. western or no religion ($P < 0.009$)
- Living on a farm or in low-rise housing ($P < 0.02$)
- Growing up with dogs during childhood ($P < 0.02$)
 - But only if these dogs were allowed to move freely in and out of the house.
- Rural residence ($P < 0.05$)

Attitudes Predict Behavior towards Dogs

- High scores on the factor “Liking for dogs” predict: More dogs owned currently and in the past, greater likelihood of adopting stray dogs, owning dogs for companionship (*versus* other reasons), more time spent with dogs, taking dogs to the veterinarian, and vaccinating dogs.
- High scores on “Viewing stray dogs as harmful” predict: Fewer dogs owned both now and in the past, and less likelihood of adopting stray dogs, allowing dogs inside the house, vaccinating and neutering/sterilizing dogs, or spending time with dogs.
- High scores on “Reluctance to kill/euthanize dogs” predict: Less likelihood of euthanizing own dogs, and greater likelihood of abandoning dogs, allowing dogs to roam freely, and failing to take dogs to the veterinarian or to have them vaccinated.

“If you can change attitudes, you can change behavior”

General Conclusions



- High dog numbers, and the practice of allowing dogs to roam freely, are associated with rural lifestyles and attitudes.
- Recent global urbanization trends have exacerbated DPM challenges by importing these rural attitudes and dog-keeping practices into urban and peri-urban settings.
- Urbanization also places greater strains on the human-dog relationship leading to more canine behavior problems and greater risks of dogs being released, abandoned, relinquished, or allowed to roam.
- Providing humane alternatives to dog release/abandonment, such as TNR, well-managed sheltering and adoption programs, and public education on how to resolve canine behavior problem may help to mitigate the worst effects of these demographic trends.

General Conclusions



- While many factors influence attitudes to dogs, the single most important factor is early childhood contact with dogs.
- Early experience of living with dogs as household/family members is associated with positive attitudes and more responsible dog ownership practices
- Exposure to dogs either caged/tethered (guard dogs) or free-roaming, is associated with neutral or negative attitudes and less responsible dog ownership practices.
- This suggests that early educational programs promoting positive attitudes and behavior towards dogs may have positive long-term effects on DPM.



The Value of Such Studies

- By focusing on local attitudes and the factors influencing these attitudes, the results of such studies can suggest culturally sensitive approaches to solving dog-related problems.
- The results of such studies can also help to target DPM strategies where they are likely to have the greatest impact on people's attitudes and behavior.
- While also providing a baseline from which to assess changes in dog-related attitudes and behavior over time.

Thank you!
Hvala!

