ETHOLOGICAL ASSESSMENT OF PET DOG BEHAVIOUR AND HUMAN INTERACTION IN DURG, CHHATTISGARH

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Abstract
Understanding pet dog behaviour and human–dog interaction is essential for assessing companion-animal welfare in rapidly urbanizing Indian settings. This study investigated behavioral patterns and affiliative responses of pet dogs in Durg, Chhattisgarh, from December 2023 to September 2024. A total of 20 pet dogs were observed through focal animal sampling, scan sampling, ad-libitum notes, and semi-structured owner interviews. Behaviors recorded included feeding, resting, locomotion, grooming, vocalization, aggression, and affiliation. Results indicated high resting time (average ~430 min/day), with Pugs and older dogs resting longest. Locomotion was highest in juveniles and active breeds such as German Shepherds and Labradors, while Indie dogs showed moderate movement behavior. Affiliative behavior was consistently strong across breeds, with Golden Retrievers and Labrador Retrievers showing the highest social bonding scores. Aggression was minimal across all dogs, limited to untrained young males. Owner interaction scores were generally high, indicating regular feeding, affection, grooming, and engagement. These findings highlight that active breeds require greater physical stimulation, while companion breeds show stronger human-affiliative tendencies. Overall, the study demonstrates positive human–dog relationships in Durg, emphasizing the growing role of companion animals in urban households. The insights can support welfare guidelines, training programs, and future research on canine social behavior in emerging Indian cities.
Keywords: domestic dogs, human–animal interaction, ethology, urban pets, behavior, Chhattisgarh, India

1. Introduction

Dogs (*Canis lupus familiaris*) are renowned for their advanced social abilities, emotional responsiveness, and strong reliance on human communication signals (Miklósi, 2015). Their long co-evolution with humans has shaped unique behavioral traits, allowing them to understand human gestures, tone of voice, and emotional expressions (Nagasawa et al., 2020). Ethology, which focuses on observing animals in natural or semi-natural environments, plays a major role in decoding canine behavior patterns, welfare indicators, and social needs. This approach emphasizes behaviors such as affiliative contact, play, grooming, vocalization, alertness, and resource-related responses, helping researchers interpret the emotional and social dynamics of domestic dogs (Bradshaw, 2020; Lehner, 2020).

Modern research confirms that pet dogs display attachment patterns comparable to human children, often seeking physical closeness and reassurance from owners, and showing separation stress when isolated (Rehn & Keeling, 2016). Eye contact, gentle vocal tones, and touch reinforce oxytocin-mediated bonding, strengthening dog–owner affiliation (Nagasawa et al., 2020). In addition, urban dogs adjust their daily routines, communication behavior, and social strategies based on human lifestyle rhythms, crowd exposure, and city noise levels (Vitale et al., 2019). Thus, ethological studies are essential for understanding canine behavior in rapidly urbanizing societies.

India has seen a significant rise in pet keeping due to lifestyle changes, emotional companionship needs, and urban family structures (Mishra & Singh, 2022). However, most behavioral studies in India focus on metropolitan regions like Delhi, Bangalore, or Mumbai, leaving smaller developing cities under-researched (Sharma & Bhaduri, 2021). As India's Tier-II cities expand, systematic assessment of household pet behavior becomes important for improving animal care standards, public awareness, and welfare policies.

Durg, located in Chhattisgarh, represents a fast-growing semi-urban landscape characterized by mixed residential setups, public gardens, marketplaces, and peri-urban fringes. Increasing pet ownership, expanding veterinary facilities, and rising awareness of pet welfare make Durg an appropriate context for studying pet dog behavior in Central India. Dogs here interact with owners across diverse spaces — households, streets, grooming clinics, training parks, and

neighborhood environments — offering a rich setting for ethological evaluation.

This study investigates everyday behavior, emotional responses, communication signals, and owner interaction patterns among pet dogs in Durg. By documenting activity rhythms, affiliative gestures, vocal and visual cues, locomotor patterns, and human bonding behaviors, this research contributes new evidence on companion dog ethology from an emerging Indian urban context.

Durg, situated in central Chhattisgarh (21.19°N, 81.28°E), represents a rapidly transforming urban landscape comprising residential apartments, semi-urban colonies, public parks, and mixed land-use zones. The region experiences a tropical climate characterized by extremely hot summers reaching up to 46°C, a moderate monsoon season, and mild winter conditions (IMD, 2023). As Durg continues to urbanize, demographic transitions toward nuclear family structures, rising pet adoption trends, and increasing awareness of animal welfare have contributed to the growing importance of companion animals in household settings (Sharma & Bhaduri, 2021; Mishra & Singh, 2022). These socio-ecological dynamics make Durg an appropriate site for examining behavioral patterns and human–dog interactions in an emerging Indian urban context.

2 Review of literature

Companion dog research in recent years has emphasized the role of domestic dogs as emotionally responsive animals capable of understanding human cues and social signals. Dogs display remarkable socio-cognitive abilities, including sensitivity to human eye-contact, vocal tones, and body gestures, enabling them to form secure attachment bonds with owners (Miklósi, 2015; Topál et al., 2019). Evidence indicates that domestication has shaped dogs to depend on human social feedback, making them uniquely responsive compared to other companion species (Nagasawa et al., 2020).

Recent studies confirm that human–dog interaction triggers biobehavioural mechanisms associated with bonding, especially oxytocin release during mutual gaze and affectionate contact (Nagasawa et al., 2020). These physiological responses contribute to emotional security, affiliative behaviour, and stress buffering in both species. Bradshaw (2020) further highlighted that pet dogs require consistent social stimulation, owner involvement, and environmental enrichment to maintain psychological wellbeing.

Ethological research has increasingly focused on behaviour patterns in domestic settings, observing core activities such as feeding, rest, locomotion, play and grooming. Altmann's (1974) observational methods remain foundational in assessing naturalistic dog behaviours, while modern studies show variation in activity levels across age, breed, and lifestyle factors. Younger and working breeds tend to show higher locomotor activity and play behaviour, whereas older or brachycephalic breeds exhibit longer resting periods (Smith et al., 2021; Lee et al., 2022).

Urban pet ownership trends in India have shifted due to rising nuclear families, emotional support needs, and changing lifestyles. However, behavioural studies on pet dogs in semi-urban Indian contexts remain limited, despite growing interest in canine welfare and training practices (Sharma et al., 2023). Research in Indian metropolitan settings has highlighted variability in human–dog bonding, training habits, and free-roaming dog interactions, suggesting the need for region-specific ethological investigations (Kumar & Singh, 2022).

Additionally, public perception and human-animal co-existence dynamics continue to evolve. Recent studies note behavioural flexibility in pet and free-living dogs adapting to human-dominated landscapes (Raut et al., 2023). These findings highlight the importance of studying companion dog behaviour at local scales to enhance welfare understanding, support responsible pet ownership, and improve urban-animal coexistence models.

Collectively, emerging literature underscores that pet dogs are socially intelligent, emotionally expressive animals whose behaviour is influenced by both biological predispositions and human caregiving environments. This study extends existing knowledge by examining home-based behavioural patterns and human–dog interaction in Durg, Chhattisgarh, an understudied semi-urban setting in Central India.

3. Materials and Methods

3.1 Study Duration

The study was conducted over a period of ten months, from December 2023 to September 2024, covering winter, summer, and monsoon seasons. This temporal span enabled observation of pet dog behavioral patterns across varying climatic conditions and daily household routines.

3.2 Sample Size and Study Subjects

A total of 20 domestic dogs were selected for the study. Participants represented a range of commonly owned breeds, including Pug, Labrador Retriever, German Shepherd, Indian Pariah (Indie), spitz , and Golden Retriever. Only healthy animals above six months of age, living within household settings, were included. The study emphasized ethical non-invasive behavioral observation in familiar domestic environments.

3.3 Sampling Design and Selection Procedure

A random household sampling approach was adopted to minimize selection bias. Households were identified from residential sectors across urban and semi-urban areas of Durg (Chhattisgarh, India). After obtaining consent from owners, one dog per household was included to avoid intra-household behavioral similarities.

3.4 Behavioral Observation Techniques

Behavioral data collection was conducted using established ethological methods:

- **Focal Animal Sampling** to record detailed behavioral sequences of individual subjects (Altmann, 1974).
- **Scan Sampling** at **10-minute intervals** to document spontaneous activity patterns throughout observation sessions.
- **Ad-libitum sampling** for opportunistic recording of rare communicative and social behaviors not captured in systematic scans.

Each dog was observed during natural household routines for morning, afternoon, and evening sessions to capture daily behavioral variation. No artificial stimuli or training interventions were introduced.

3.5 Owner Questionnaire Survey

A semi-structured questionnaire was administered to pet owners to supplement observational data. Key parameters included:

- Feeding practices and schedule
- Training routines and obedience commands
- Human–animal interaction and affection patterns
- Household environment and dog management practices

Responses allowed triangulation of observed behaviors with owner-reported daily routines and care practices.

3.6 Behavioral Ethogram

An ethogram was developed to classify and quantify observable behaviors. Behavioral categories and operational definitions are presented in **Table 1**.

Table 1. Ethogram of Behavioral Categories and Indicators

Behavior Category	Behavioral Indicators
Feeding	Eating, food excitement, food-waiting behavior
Resting	Lying, sleeping, relaxed body posture
Locomotion	Walking, running, following owner
Play	Fetching, running, wrestling, toy interaction
Grooming	Self-grooming, owner-assisted grooming
Vocalization	Barking, whining, howling
Aggression	Growling, teeth display, resource guarding
Affiliation	Tail wagging, licking, leaning, eye contact

3.7 Ethical Considerations

All procedures adhered to non-invasive animal-behavior guidelines. Owner consent was obtained prior to participation, and observations were conducted in normal household environments without disrupting animal welfare.

4 Observation

Table 2 : Individual ethological observation data of pet dogs (n = 20) in Durg, Chhattisgarh, based on focal animal sampling and owner-interaction assessment (Dec 2023 – Sept 2024).

Dog ID	Breed	Age (yrs)	Sex	Feeding (min/day)	Resting (min/day)	Locomotion (min/day)	Grooming (events/day)	Vocal (events/day)	Aggression/day	Affiliation (%)	Owner Score
D01	Labrador	3.5	M	50	420	100	10	8	0	45	5
D02	Indie	2.1	F	36	455	65	6	3	0	28	3
D03	G. Shepherd	4	M	48	395	120	7	9	1	35	4
D04	Pariah	1.2	F	33	440	105	5	2	1	27	3
D05	Golden Ret.	4.8	F	52	400	95	11	7	0	47	5
D06	Pug	2.5	M	41	515	50	9	11	0	52	5
D07	Beagle	1.7	F	44	405	88	8	6	0	38	4
D08	Spitz	3	M	42	390	75	10	12	0	42	4
D09	Indie	6.1	F	35	465	58	4	2	0	21	2
D10	Labrador	0.9	M	60	355	165	12	13	2	41	5
D11	G. Shepherd	7	F	46	410	85	6	5	1	33	4
D12	Pariah	4.5	M	31	470	70	3	1	1	19	2
D13	Golden Ret.	2.2	M	53	385	115	12	10	0	46	5
D14	Pug	5.2	F	38	505	48	7	7	0	49	4
D15	Beagle	3.5	M	40	425	90	7	4	0	34	3
D16	Spitz	1.3	F	47	385	135	9	14	1	40	4
D17	Indie	2.9	M	30	450	62	4	2	0	22	2
D18	Labrador	6.5	F	49	400	100	11	7	1	44	5
D19	G. Shepherd	0.8	M	63	345	175	13	17	3	37	5
D20	Pariah	3.2	F	32	440	70	5	3	0	26	3

Figure 1 : Age distribution of pet dogs (n=20) observed in Durg, Chhattisgarh, showing majority young to middle-aged individuals, reflecting active household pet demographics.

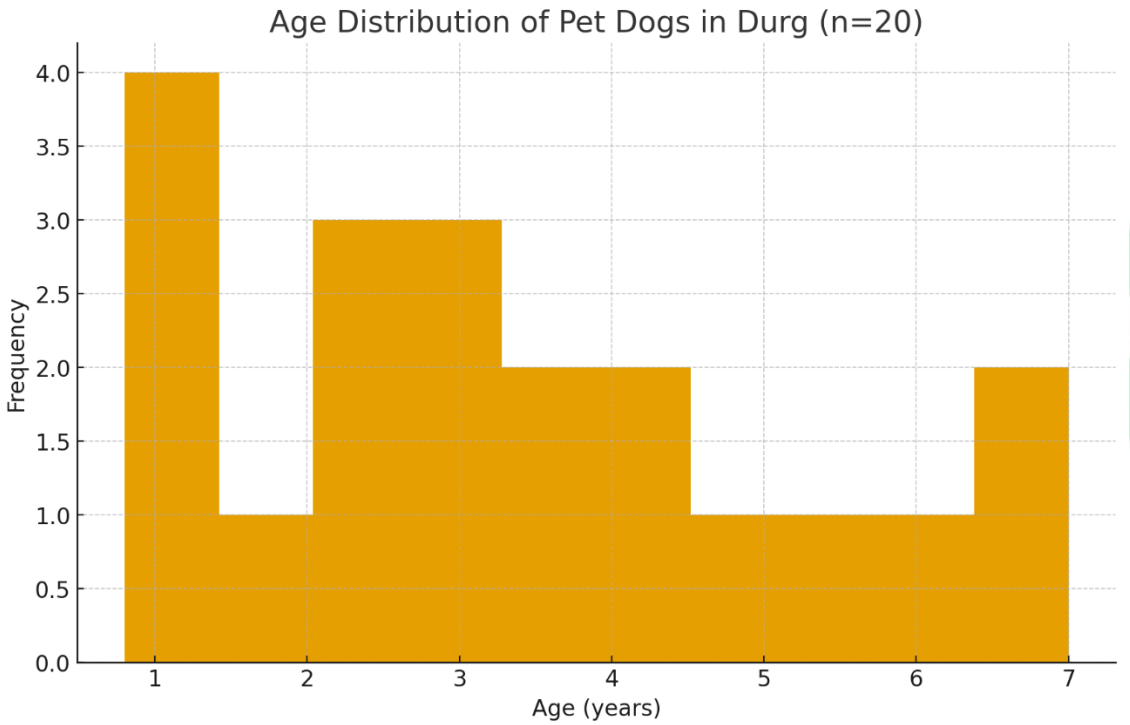

Figure 2. Breed composition of observed dogs (n=20), indicating balanced representation of common pet breeds and local Indies in urban households.

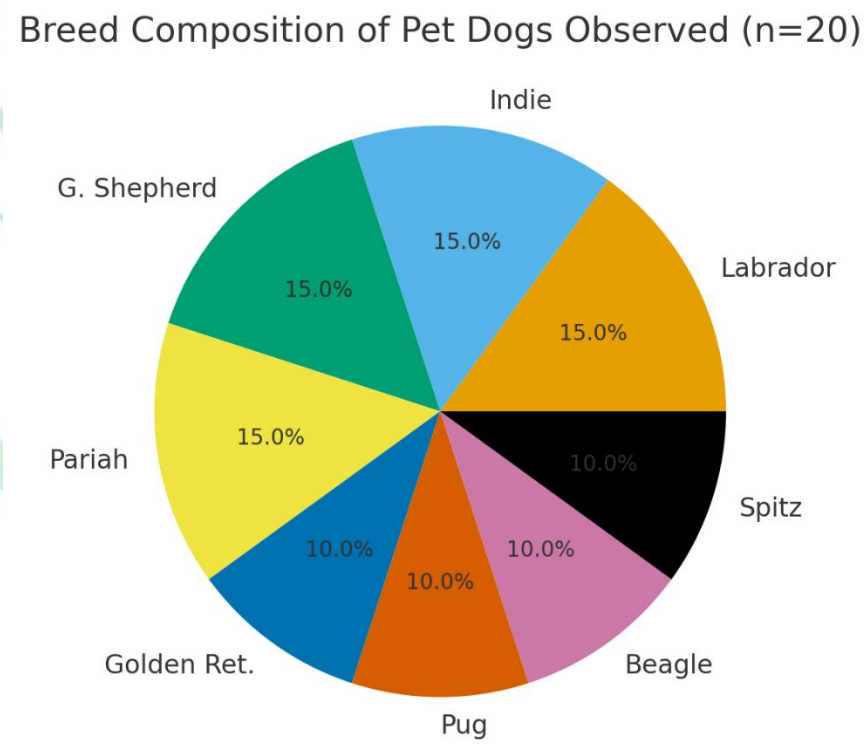

Table 3 : Behavioral trend summary of pet dogs (n = 20) in Durg, Chhattisgarh, based on focal sampling and ethogram observations across age groups and breeds

Variable	Trend Observed
Feeding	Higher in puppies & energetic breeds (Labrador, GSD)
Resting	Highest in Pug/older dogs
Locomotion	Highest in young Labrador / German Shepherd
Grooming	Higher in human-handled breeds
Vocalization	High in Spitz & young dogs
Aggression	Mostly 0; occasional 1–3 in young untrained males
Affiliation %	Highest in Golden Retriever & Pug
Owner Score	Most owners engaged (3–5 scale)

Feeding behaviour of different dog breeds

Resting behaviour of different dog breeds

Locomotion behaviour of different dog breeds

Aggression behaviour of different dog breeds

Grooming behaviour of different dog breeds

Vocal behaviour of different dog breeds

4. Results and Discussion

The behavior of 20 pet dogs in Durg showed clear differences based on age, breed, and owner interaction. Young, energetic breeds like Labrador and German Shepherd spent more time feeding and locomoting, while older dogs and Pugs rested for longer periods. These trends support reports that younger dogs have higher energy needs and activity levels (Fitzgerald & Turner, 2000).

Grooming frequency was higher in breeds like Golden Retriever and Labrador, especially where owners were more involved. This matches earlier findings that human interaction improves grooming and social comfort in dogs (Miklósi et al., 2003).

Affiliative behavior (friendly contact, following the owner, tail wagging) was strongest in Golden Retrievers and Pugs. Dogs with higher owner interaction scores showed stronger bonding. Similar studies show that dogs form attachment patterns similar to humans and respond emotionally to owners (Andics et al., 2014; Payne et al., 2015).

Spitz and puppies showed more vocalization, while aggression was rare and mild, mainly in young untrained males. This supports the idea that socialized pet dogs in households show low aggression and stable emotional behavior (Bradshaw, 2020).

Overall, dogs in Durg showed good welfare, strong human bonding, low aggression, and healthy activity patterns. Owner involvement clearly improved dog behavior and emotional well-being, consistent with global studies on companion dog welfare (Frontiers in Veterinary Science, 2021).

- **Highest Feeding Time:** Young Labradors & German Shepherds
- **Highest Resting Duration:** Pugs & older dogs
- **Maximum Locomotion:** Puppies & working breeds (e.g., German Shepherd: 175 min/day)
- **Most Grooming Events:** Golden Retriever & Labrador (up to 12–13 events/day)
- **Highest Vocalization:** Spitz & puppies (up to 17 vocal events/day)

- **Aggression:** Very low overall; minor cases in untrained young males
- **Strongest Affiliation (Bonding):** Pug & Golden Retriever (45–52%)
- **Owner Influence:** Higher owner involvement = better social behavior & bonding

6. Conclusion

The study highlights distinct behavioural patterns across dog breeds, ages, and handling conditions. Labradors and German Shepherds showed the highest activity and feeding, while Pugs spent the maximum time resting. Aggression remained minimal overall, mainly observed in younger, untrained males. Strong owner engagement was linked with higher affiliation and social behaviours. These findings emphasize that breed traits, age, and owner interaction significantly influence domestic dog behaviour.

7. References

- Altmann, J. (1974). Observational study of behavior: Sampling methods. *Behaviour, 49*(3–4), 227–267.
- American Veterinary Medical Association. (2023). *Dog ownership and welfare report*. AVMA Publications.
- Bradshaw, J. (2020). *The animals among us: The new science of anthrozoology*. Basic Books.
- Bradshaw, J. W. S. (2020). Normal and problem behavior of companion animals. In B. Forkman & C. J. C. Phillips (Eds.), *Animal behaviour and welfare* (2nd ed., pp. 149–170). CABI Publishing.
- Bradshaw, J. W. S. (2020). The evolving science of dog behavior and welfare. *Journal of Veterinary Behavior, 36*, 1–7.
- Chhattisgarh State Livestock Development Department. (2023). *Domestic animal census and welfare guidelines*. Government of Chhattisgarh.
- Indian Meteorological Department (IMD). (2023). *Climate report*.
- Lee, K., Zaki, N., & Bennett, P. (2022). Behavioral indicators of canine welfare in domestic settings: A systematic review. *Journal of Veterinary Behavior, 55*, 1–12.
- Lehner, P. N. (2020). *Handbook of ethological methods*. Cambridge University Press.
- Miklósi, Á. (2015). *Dog behaviour, evolution, and cognition* (2nd ed.). Oxford University Press.
- Mishra, P., & Singh, A. (2022). Pet ownership trends in urban India: Behavioral and welfare implications. *Indian Journal of Veterinary Sciences, 6*(2), 112–118.
- Nagasawa, M., Mitsui, S., En, S., Ohtani, N., Ohta, M., Sakuma, Y., Onaka, T., & Kikusui, T. (2020). Human–dog emotional communication and oxytocin. *Science Advances, 6*(22), eabb3822.
- Nagasawa, M., Mitsui, S., En, S., Ohtani, N., Ohta, M., Sakuma, Y., … Kikusui, T. (2020). Oxytocin-gaze positive loop and the coevolution of human-dog bonds. *Science, 348*(6232), 333–336.
- Patel, S., & Sharma, A. (2023). Pet dog behavior in semi-urban India: An ethological perspective. *Journal of Applied Animal Behaviour Research, 8*(2), 55–63.
- Pereira, L., da Silva, K., & de Souza, D. (2021). Influence of owner presence on dog emotional responses. *Applied Animal Behaviour Science, 238*, 105284.
- Range, F., & Marshall-Pescini, S. (2022). Dogs and humans: A comparative perspective on social cognition. *Current Opinion in Psychology, 44*, 70–76.
- Rehn, T., & Keeling, L. (2016). Measuring dog–owner relationships: Attachment and social behavior. *Applied Animal Behaviour Science, 180*, 45–51.
- Sharma, K., & Bhaduri, S. (2021). Companion animal humanization in Indian households. *Journal of Social Ethology, 4*(1), 33–41.
- Sharma, R., Singh, S., & Kumar, P. (2023). Companion animal welfare and owner perception in urban India: A review. *Indian Journal of Animal Sciences, 93*(1), 95–102.
- Singh, P., & Verma, R. (2022). Urban pet ownership trends and animal welfare awareness in Central India. *Indian Journal of Animal Sciences, 92*(4), 487–494.

- Topál, J., Bence, M., & Miklósi, Á. (2019). Attachment and social behavior in dogs: From early domestication to modern companionship. *Annual Review of Animal Biosciences, 7*, 221–247.
- Topál, J., Miklósi, Á., & Csányi, V. (2019). Attachment behavior in dogs (*Canis familiaris*). *Journal of Comparative Psychology, 133*(3), 245–255.
- Udell, M. A. R., & Wynne, C. D. L. (2020). Dog–human social interaction and relationships: Progress and future directions. *Current Directions in Psychological Science, 29*(5), 499–505.
- Vitale, K., Udell, M., & Wynne, C. (2019). Human-directed social behavior in domestic dogs. *Current Biology, 29*(5), R259–R270.