



Demography, husbandry practices, biosecurity and economic viability of pet bird farms in selected regions of Bangladesh: current status and future prospects

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Abstract

Birds are the most fascinating creatures of nature. Any bird, except poultry, with high genetic value that can legally be reared in captivity is considered as ‘pet bird’. Keeping pet bird is one of the oldest hobbies of humans, and in Bangladesh it has recently become an emerging sector. Therefore, the present study evaluated the socio-economic characteristics, management practices, biosecurity, health issues, and economic performance of 45 pet bird farms in Bangladesh to know present scenario and potentials of this emerging sector. The majority of farmers were male (97.8%) and within the productive age group of 21–40 years (71.1%). Pet bird farming was the main occupation for 44.4% of respondents, and although education levels were relatively high (35.6% with bachelor’s and 26.7% with master’s degrees), only 6.7% had received formal training. Farm establishment increased sharply after 2016, with most farms being small-scale, indoor (44.4%) or rooftop (42.2%) units, none of which were registered. Species composition showed an equal distribution of mixed-bird farms (26.7%) and lovebird farms (26.7%), followed by parrot-dominated farms (20.0%). Nearly half of all farms maintained 100–250 birds. All the farmers relied on manual feeding and prepared their own feed. Reproductive performance was moderate, as 55.6% of farms reported clutch sizes of 5–7 eggs and 73.3% achieved hatchability rates of 70–90%. Disease outbreaks were widespread (95.6%), with cold (40.0%), diarrhoea (37.8%), and eye infections (31.1%) most frequently reported, though mortality rates generally remained below 10%. Economic analysis revealed strong profitability. The average annual cost was 214,318±29,723 BDT, while net profit reached 538,268±141,221 BDT ($p<0.0001$). Most farms (73.3%) operated without hired labor, but those with higher initial investments (>500,000 BDT) achieved significantly greater profits ($p<0.0001$). In conclusion, pet bird farming in Bangladesh is a small-scale yet profitable enterprise with potential for expansion. Improved training, stronger biosecurity, and strategic investment could enhance its sustainability and contribution to rural livelihoods.

Keywords: Pet bird, status, reproduction, health, biosecurity, economics

Introduction

Keeping pet birds is one of the oldest human practices. A “pet bird” is defined as any non-poultry species with high genetic or aesthetic value that consumes plant seeds or grains and is legally permitted for captive keeping, regardless of whether it is housed fully in cages (Veladiano *et al.* 2016). Most pet birds belong to the orders *Passeriformes*—such as canaries, finches, starlings, and bulbuls—and *Psittaciformes*, which include budgerigars, parrots, lovebirds, conures, and parakeets (Gobbi *et al.* 1996; Boseret *et al.* 2013). Human interest in keeping birds and other animals is believed to be deeply rooted in our evolutionary history, dating back nearly 20,000 years to the early domestication of dogs (Dolensek and Burn, 1978). Due to their attractive plumage, pleasant vocalizations, ability to imitate human speech, and

value in research and companionship, many bird species have been bred and maintained in captivity worldwide (Dolensek and Burn, 1978; Thomsen *et al.* 1992). In some cases, captive birds are also used for traditional practices such as falconry, where they serve as hunting partners (Iñigo-Elias, 1983).

Pet birds are particularly appreciated by children and older adults, contributing to emotional wellbeing and enhancing quality of life. Their companionship has been associated with reductions in stress, blood pressure, and mental fatigue (Martin, 1980; Rahman, 2004). Although wild-caught birds were historically used for rearing, responsible breeders now maintain captive populations without relying on wild capture, which is illegal in many regions. Consequently, aviculture—the captive breeding of pet birds—has become the preferred and ethical

approach. Moreover, captive breeding programs serve an increasingly critical conservation role, with several threatened bird species saved from extinction through successful propagation in aviaries (Martin, 1980; Rahman, 2004).

Aviculture is gaining rapid popularity in many parts of the world, including Bangladesh, where it is emerging as a growing commercial sector. A substantial number of people are currently engaged in pet bird rearing, breeding, trade, cage manufacturing, and the supply of feed and medicines. For unemployed youth, aviculture presents an important opportunity for income generation and may contribute to national economic growth.

Despite its growing importance, scientific information on pet birds in Bangladesh remains limited. Only a few authentic studies are available, including reports on species diversity in pet shops in Rajshahi City (Yasmin *et al.* 2024), the prevalence of zoonotic bacteria (Nupur *et al.* 2023), helminth and protozoal infections (Bayzid *et al.* 2023), subcutaneous emphysema in parrots (Tanjim *et al.* 2023), antibiotic resistant *Staphylococcus aureus* from pet birds (Royal *et al.* 2024), and microflora of zoo birds (Akhter *et al.* 2010). Previous work has also documented the breeding, reproduction, and farming potential of specific avian species such as peafowl (Rahman *et al.* 2024), turkey (Rahman *et al.* 2025), pigeons (Rahman and Das, 2018), and Japanese quail (Rahman *et al.* 2016).

Considering the scarcity of comprehensive data, the present study was designed to investigate the current status, distribution, species diversity, breeds and varieties, farming potential, breeding and reproductive management, biosecurity practices, and health challenges of pet birds in selected regions of Bangladesh. The findings are expected to contribute to the development of a structured aviculture sector, create employment opportunities, and support the country's economic growth.

Materials and methods

Study area: Pet bird farming is an emerging form of entrepreneurship in Bangladesh, attracting increasing interest among young entrepreneurs. However, the

overall number of farms remains limited. Therefore, study locations were selected based on the presence of pet bird farms, covering selected districts across all eight divisions of Bangladesh. A total of 45 pet bird farmers were surveyed. The distribution of farms was: Dhaka Division – Dhaka (13), Narsingdi (1), Narayanganj (1); Chattogram Division – Chattogram (2), Noakhali (2); Rajshahi Division – Rajshahi (1), Bogura (8); Khulna Division – Khulna (1), Jessore (1), Kushtia (1); Rangpur Division – Rangpur (1), Nilphamari (3); Mymensingh Division – Mymensingh (2), Jamalpur (1); Sylhet Division – Sylhet (2), Moulvibazar (3); Barisal Division – Barisal (2). The highest proportion of farms was recorded in Dhaka Division (33.3%), followed by Rajshahi (20.0%) and Sylhet (11.1%), while the remaining divisions – Chattogram, Rangpur, Khulna, Mymensingh, and Barisal – accounted for 8.9%, 8.9%, 6.7%, 6.7%, and 4.4%, respectively (Figure 1). This distribution reflects the uneven concentration of pet bird farming across the country.

Study period and data collection: The study was conducted during the period from July 2024 to June 2025. A suitable sampling technique was employed for the study. A structured questionnaire was developed with necessary adjustments to ensure clarity and relevance. Pre-testing of the questionnaire was conducted to confirm that the questions were understandable and feasible for respondents to answer. Primary data were collected through in-person interviews during visits to the farms. Before the interviews, respondents were briefed on the objectives of the study. All responses were recorded directly on the questionnaire in simple and comprehensible language.

Statistical analyses: Data were entered into Microsoft Excel and analyzed using GraphPad Prism version 9. Descriptive statistics, including mean $\pm$ SEM, median, IQR, and percentages, were calculated. Normality of continuous variables was assessed using the Shapiro–Wilk test. Differences among groups were evaluated using one-way ANOVA, and categorical variables were analyzed using chi-square tests. Statistical significance was set at $p < 0.05$.

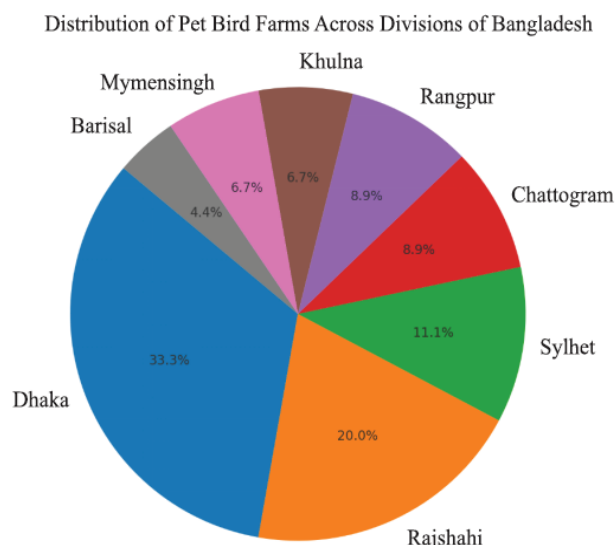


Figure 1. Distribution of pet bird farms across the eight divisions of Bangladesh.

Results and discussion

The present study provides important insights into the demographic and motivational characteristics of pet bird farmers in Bangladesh (Table 1). The sector remains overwhelmingly male-dominated, with 97.8% of respondents being men, a trend also noted in previous regional observations such as Hossain *et al.* (2025). Most farmers were within the productive age range of 21–40

years, indicating strong engagement from young adults who may drive future sectoral growth. Education levels were generally high, as more than 60% held bachelor's or master's degrees, suggesting that aviculture is increasingly practiced by individuals with formal education, which may contribute to improved husbandry and farm management. Although 44.4% of respondents considered pet bird farming as their primary occupation, many were also involved in private service, government jobs, or diverse professions, reflecting the flexible and supplementary nature of this enterprise. Formal training in pet bird rearing was limited (6.7%), yet a notable proportion (31.1%) sought knowledge independently through books and training materials. Most participants were married (71.1%), and many actively contributed to expanding aviculture: 53.3% motivated new farmers, while others provided training, technical, or financial support. These findings highlighted that pet bird farming in Bangladesh is emerging as a semi-structured and increasingly popular activity driven by educated, motivated individuals, with significant potential for further development and commercialization.

The temporal pattern of farm establishment (Figure 2) shows that although the earliest recorded pet bird farm appeared in 1986, most farms were founded after 2016,

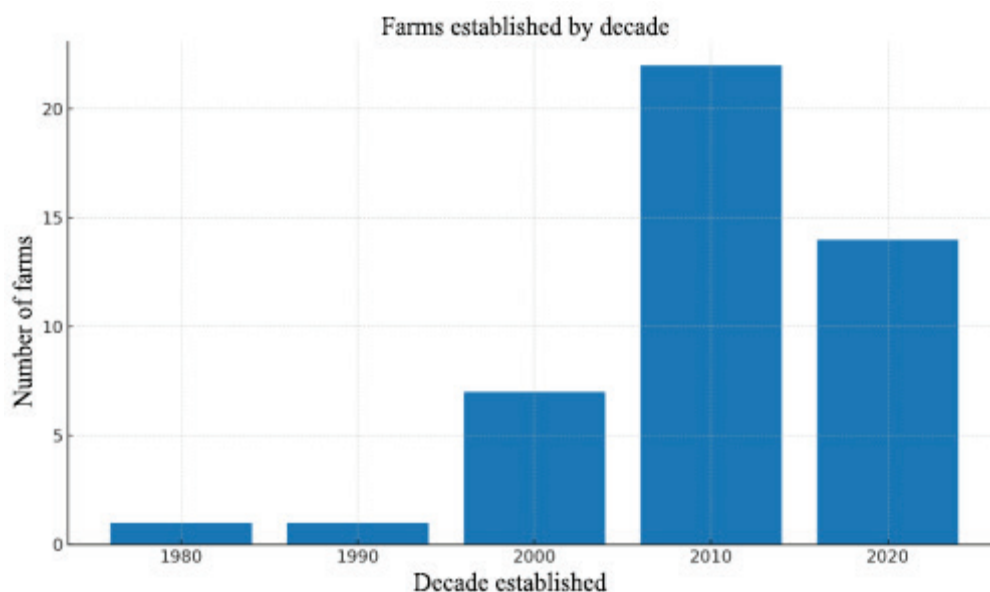


Figure 2. Number of pet bird farms established by decade.

Table 1. Status of farmers and motivational activities in pet bird farming in Bangladesh (n=45).

Parameters	Groups	Number	Percentage (%)
Sex	Male	44	97.8
	Female	1	2.2
Age group	<20 years	1	2.2
	21–30	17	37.8
	31–40	15	33.3
	41–50	10	22.2
	>51	2	4.4
Primary occupation	Pet bird farming	20	44.4
	Government service	1	2.2
	Private service	12	26.7
	Others	12	26.7
Previous training	Yes	3	6.7
	No	42	93.3
Read any books/training materials	Yes	14	31.1
	No	31	68.9
Educational background	<SSC	2	4.4
	SSC	2	4.4
	HSC	13	28.9
	Bachelors	16	35.6
	Masters	12	26.7
	PhD	0	0.0
Marital status	Married	32	71.1
	Single	13	28.9
Role in spreading pet bird farming	Provide training	2	4.4
	Motivate others	24	53.3
	Consultancy	0	0.0
	Technical support	2	4.4
	Financial support	1	2.2
	Various roles	9	20.0
	No role	7	15.6

with a sharp rise in the 2020s, indicating rapid recent expansion of aviculture in Bangladesh. Farm size varied widely, ranging from 30 to 3500 sq. ft. (Figure 3), with a mean of 555.9 ± 103.3 sq. ft. and a median of 250 sq. ft. (Interquartile range or IQR 140–800). The Shapiro–Wilk test confirmed a non-normal distribution ($W=0.684$, $p<0.001$), primarily due to a few very large farms, indicating that most operations are small-scale (Table 2). Nearly half of the farms were established indoors (44.4%) or on rooftops (42.2%), whereas tin-shed structures were less common (13.3%). All surveyed farms were unregistered (100%), reflecting the informal nature of this emerging sector. Mixed-species farms (28.8%) were the most common, followed by lovebird farms (26.7%), parrot-dominated farms (20.0%), finch farms (13.3%), and budgerigar farms (6.7%). Canaries, macaws, and other passerines were rare, each representing only 2.2%. Flock sizes showed considerable variation, though most farms maintained 100–250 birds (46.7%), and only 4.4% kept more than 1,000 birds. Species diversity was also limited, with over half of the farms (53.3%) rearing fewer than five species. Notably, 91.1% of farmers expressed plans

to expand their operations, indicating strong confidence in the growth and commercialization potential of pet bird farming in Bangladesh.

Farm management practices across all surveyed pet bird farms were entirely manual, with 100% of farmers using manual feeding systems and preparing their own feed formulations rather than relying on commercial rations, indicating a fully farmer-managed nutritional strategy. Biosecurity implementation varied considerably: over half of the farmers (55.6%) reported strict adherence to biosecurity practices, 35.6% followed them at a basic level, and 8.9% did not practice biosecurity at all. Reproductive performance also differed among farms. Most farms recorded a medium clutch size of 5–7 eggs (55.6%), while 33.3% had fewer than 5 eggs per clutch and only 11.1% reported clutch sizes exceeding 7 eggs. Hatchability outcomes showed that the majority of farms achieved hatching rates between 70–90% (73.3%), whereas 15.6% reached more than 90% hatchability, and 11.1% experienced low hatchability ($<70\%$) (Table 3).

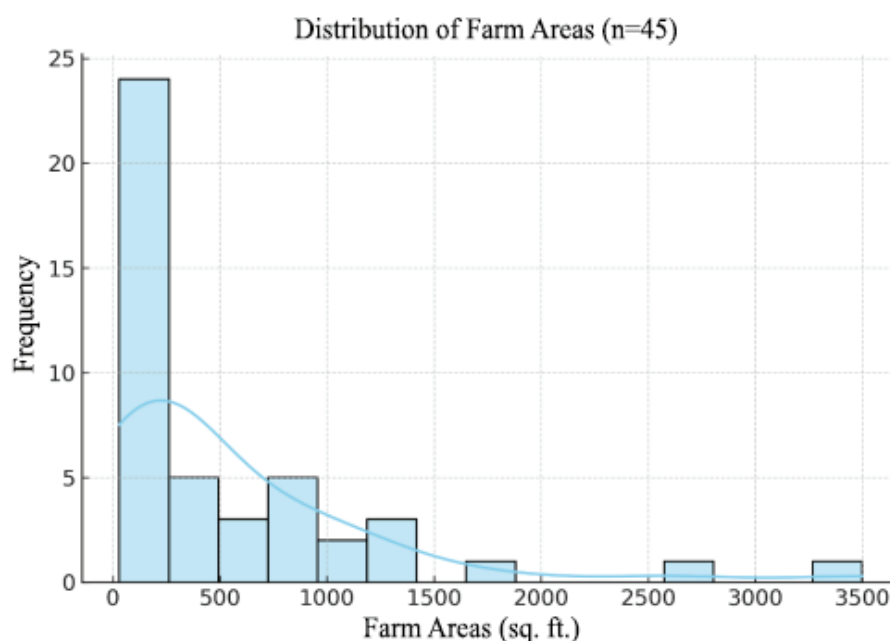


Figure 3. Distribution of farm areas among pet bird farms ($n=45$) in Bangladesh. Values are presented as median with interquartile range (IQR), as the data were not normally distributed (Shapiro–Wilk test, $p<0.001$). A right-skewed pattern was observed, with most farms clustered below 800 sq. ft. and a few very large outliers.

Table 2. Farm-related characteristics of pet bird farms in Bangladesh (n=45).

Parameters	Groups	Number	Percentage (%)
Type of Shed	Indoor	20	44.4
	Rooftop	19	42.2
	Tin-shed	6	13.3
Registration	Registered	0	0.0
	Unregistered	45	100.0
Farm type	Parrot-dominated farms	9	20.0
	Macaw farm	1	2.2
	Budgerigar farms	3	6.7
	Lovebird farms	12	26.7
	Finch farms	6	13.3
	Canary farm	1	2.2
	Other passerine farm	1	2.2
	Mixed bird farms	12	26.7
Bird number	<50	9	20.0
	100–250	21	46.7
	251–500	6	13.3
	501–1,000	7	15.6
	>1,000	2	4.4
Number of species	<5	24	53.3
	5–10	12	26.7
	11–15	5	11.1
	>15	4	8.9
Future plan	Want to expand farm	41	91.1
	Want to stop farming	4	8.9

Table 3. Farm management and reproductive data of pet bird farms in Bangladesh (n=45).

Parameters	Groups	Number	Percentage (%)
Feeding system	Automatic	0	0.0
	Manual	45	100.0
Ration formulation	Commercial ration	0	0.0
	Own formula	45	100.0
Biosecurity measures	Strictly	25	55.6
	Normally	16	35.6
	Never	4	8.9
Eggs per clutch	Low (<5)	15	33.3
	Medium (5–7)	25	55.6
	High (>7)	5	11.1
Hatching rate (%)	Low (<70)	5	11.1
	Medium (70–90)	33	73.3
	High (>90)	7	15.6

Nearly all pet bird farms (95.6%) experienced disease outbreaks, with only 4.4% remaining unaffected. Most farmers described disease occurrence as less frequent (60.0%), followed by rare (31.1%), while only 8.9% considered outbreaks to be frequent. Chick health performance was generally satisfactory, with 51.1% of farms producing 80–90% healthy chicks and 44.4% achieving 91–100% healthy chicks, whereas only 4.4% reported yields below 80%. Curled toe paralysis appeared to be an uncommon condition, reported as rare by 57.8% of farms, less common by 40.0%, and common in only one farm (2.2%). Mortality patterns were similarly low across farms: 88.9% recorded day-old chick deaths of $\leq 10\%$, including 53.3% reporting very low levels (0–5%), while pre-maturity mortality was $\leq 10\%$ in 84.4% of farms, with 62.2% reporting 0–5% losses. In terms of health management, almost all farmers (93.3%) routinely

mixed medicines or additives with feed, although veterinary consultation practices were inconsistent; 57.8% sought veterinary advice only when necessary, 31.1% never consulted a veterinarian, and only 13.3% did so regularly (Table 4). The majority of farms (97.8%) reported experiencing at least one disease problem in the past year, with only one farm (2.2%) remaining disease-free. Among the conditions recorded, cold (40.0%, 95% CI 26.80–55.1), diarrhoea (37.8%, 95% CI 24.8–52.6), and eye infections (31.1%, 95% CI 19.0–46.0) were the most prevalent, followed by pox (20.0%) and canker (15.6%). Less common conditions included external parasite infestations (11.1%), polyoma (8.9%), internal parasites (6.7%), sour crop (2.2%), and Newcastle disease (2.2%). A chi-square goodness-of-fit test confirmed a significantly uneven distribution of diseases across farms ($\chi^2=46.44$, $df=9$, $p<0.001$), indicating that respiratory and

Table 4. Disease related data of pet bird farms in Bangladesh (n=45).

Parameters	Groups	Number	Percentage (%)
Disease experience	Yes	43	95.6
	No	2	4.4
Disease frequency	Frequent	4	8.9
	Less frequent	27	60.0
	Rare	14	31.1
Healthy chick (%)	<80	2	4.4
	80–90	23	51.1
	91–100	20	44.4
Curled toe paralysis	Common	1	2.2
	Less common	18	40.0
	Uncommon	26	57.8
Day-old chick died (%)	0–5	24	53.3
	6–10	16	35.6
	>10	5	11.1
Died before maturity (%)	0–5	28	62.2
	6–10	10	22.2
	>10	7	15.6
Medicine & additives with feed	Yes	42	93.3
	No	3	6.7
Veterinary advice	Regularly	6	13.3
	At interval	0	0.0
	When needed	26	57.8
	Never	14	31.1

enteric problems were disproportionately more frequent than other conditions. The graphical representation of disease prevalence is presented in Figure 4.

Economic assessment of the 45 surveyed pet bird farms revealed considerable variation in investment, production costs, and profitability, reflecting the dynamic nature of this emerging sector. The average starting capital was 116,366±26,920 BDT, increasing to 1,474,318±507,753 BDT with farm expansion and reinvestment. Production

costs averaged 3,738±495 BDT per pair per year, while profits reached 13,245±1,985 BDT per pair annually (Figure 5). Farms reported mean annual costs of 214,318±29,723 BDT and net profits of 538,268±141,221 BDT, with a highly significant difference between costs and profits ($p<0.0001$; Figure 6), indicating that efficient management can generate substantial returns. Labor use was minimal: 73.3% of farms were owner- or family-managed without hired workers, 20.0% employed 1–2

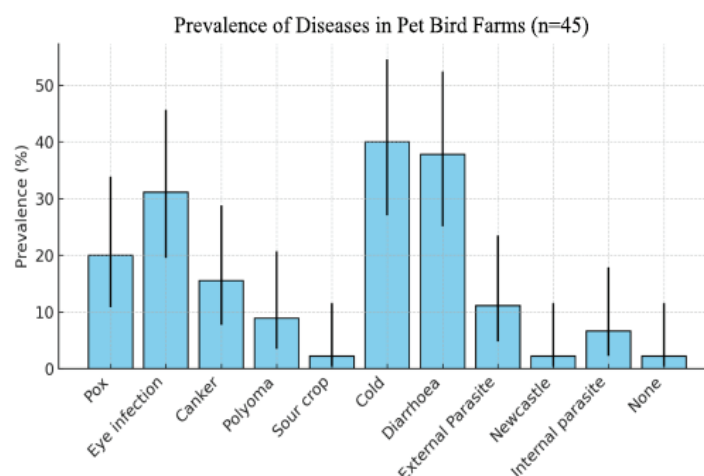


Figure 4. Occurrence of diseases in pet bird farms (n=45) across selected areas of Bangladesh. Values are expressed as prevalence (%) with 95% confidence intervals. A chi-square goodness-of-fit test indicated significant differences in the distribution of diseases among farms (** $p<0.0001$).

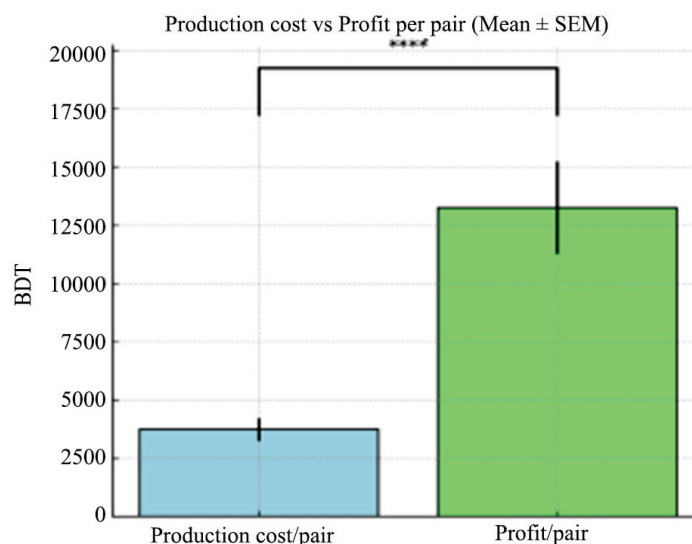


Figure 5. Production cost versus profit per pair of birds per year in pet bird farms (n=45). Values are expressed as mean±SEM. A significant difference was observed between production cost and profit (**** $p<0.0001$).

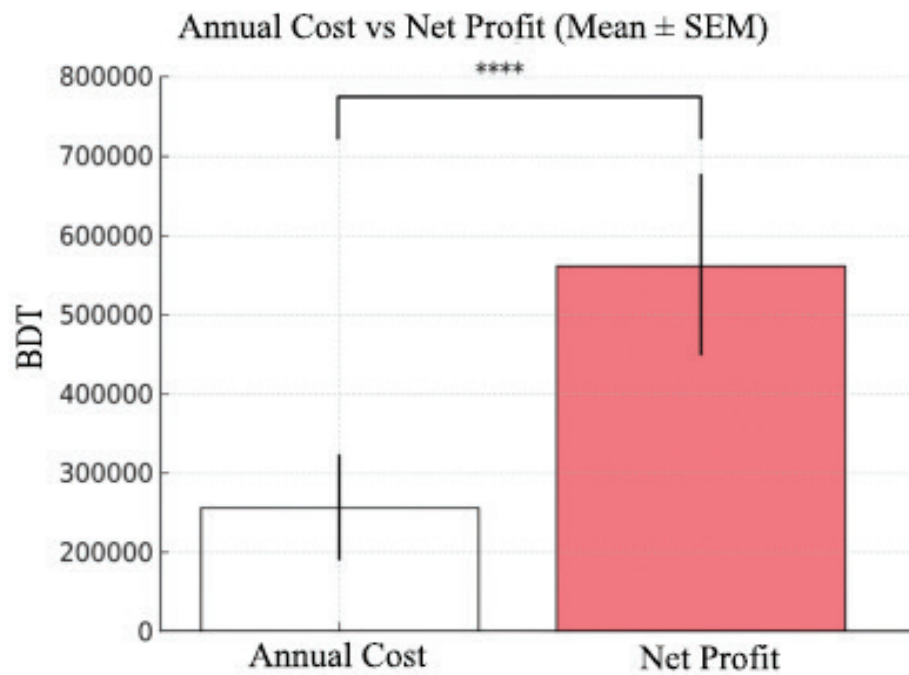


Figure 6. Comparison of annual cost and net profit in pet bird farms (n=45). Values are expressed as mean $\pm$ SEM. Net profit was significantly higher than annual cost (****p<0.0001).

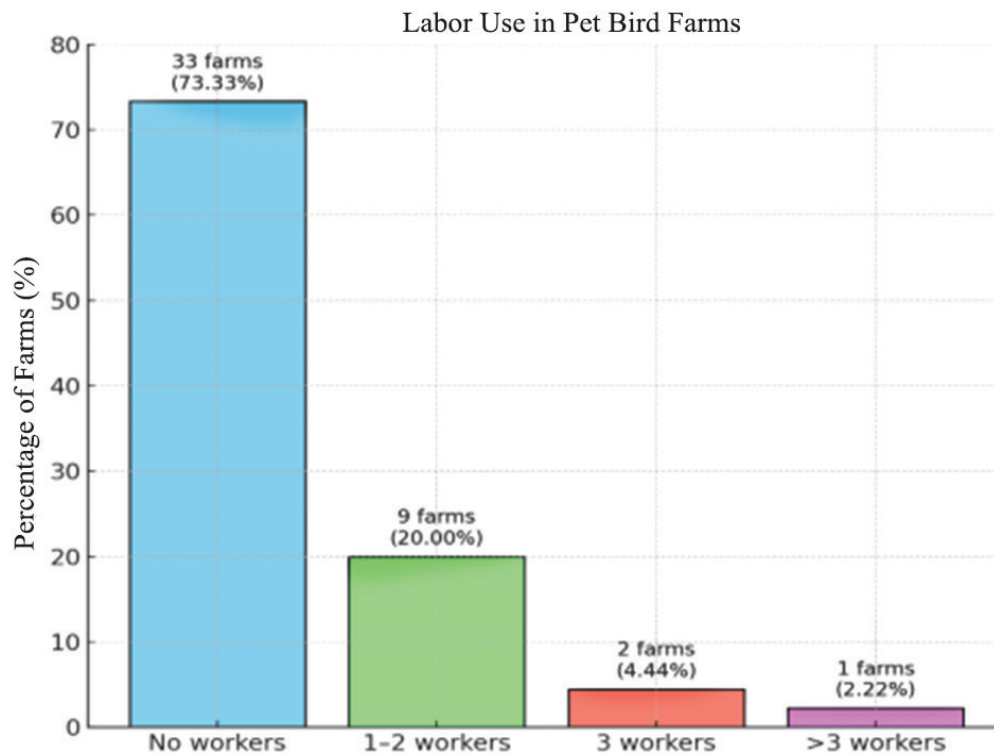


Figure 7. Labor use in pet bird farms.

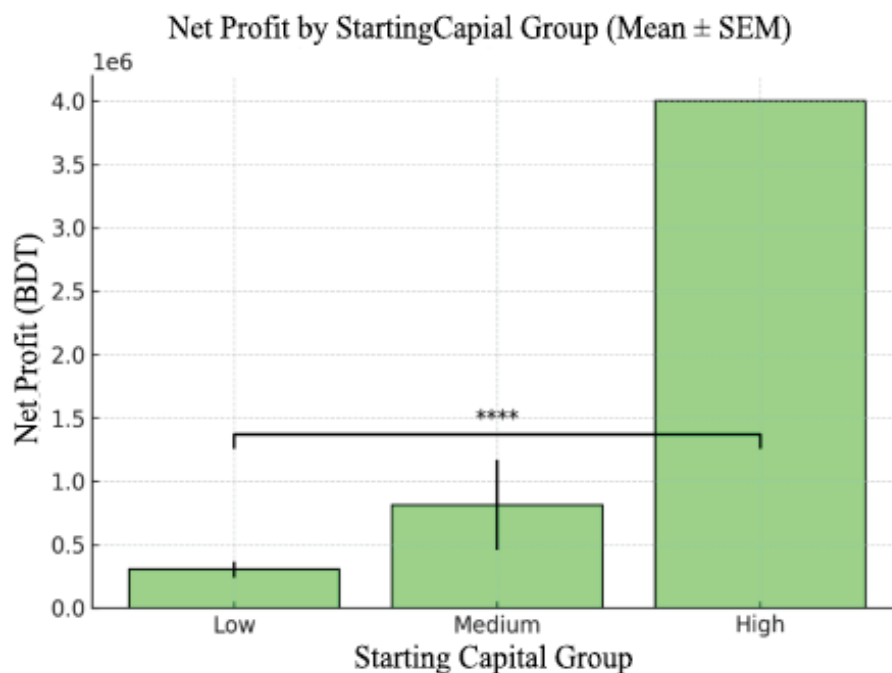


Figure 8. Net profit by starting capital groups in pet bird farms (n=45). Values are expressed as mean±SEM. One-way ANOVA revealed significant differences among groups, with higher initial investment associated with greater net profit (****p<0.0001).

workers, and only a few farms had 3 or more employees (Figure 7). Analysis by initial capital showed that farms with higher investments (>500,000 BDT) achieved significantly greater net profits compared to lower-investment farms (<100,000 BDT) ($F=12.95$, $p<0.0001$; Figure 8), suggesting that economies of scale enhance financial returns. Overall, these results indicate that pet bird farming is a profitable, primarily small-scale enterprise, where strategic investment, cost management, and labor optimization can substantially improve profitability.

Conclusion

This study provides one of the first systematic assessments of pet bird farming in Bangladesh, covering farmer profiles, farm characteristics, management practices, disease occurrence, and economic performance. The findings highlighted that pet bird farming is predominantly a small-scale, owner-managed activity, concentrated mainly in Dhaka and Rajshahi divisions. Despite limited formal training, farmers demonstrated strong motivation and high profitability potential, although challenges

such as disease outbreaks, weak biosecurity, and lack of formal registration persist. Overall, pet bird farming shows promise as an emerging entrepreneurial sector in Bangladesh, but its sustainable growth will require greater institutional support, improved training, and stronger health management practices.

References

- Akhter J, Hossain MT, Islam MT, Siddique MP and Islam MA. 2010. Isolation and identification of microflora from apparently healthy caged parrots of Dhaka Zoo of Bangladesh. *Bangladesh Journal of Veterinary Medicine*. 8: 5-10.
- Bayzid M, Hasib FMY, Hasan T, Hassan MM, Masuduzzaman M, Hossain MA and Alim MA. 2023. Prevalence of helminth and protozoan infections in pet birds of Chattogram, Bangladesh. *Veterinary Medicine and Science*. 9: 548-556.
- Boseret G, Losson B, Mainil JG, Thiry E and Saegerman C. 2013. Zoonoses in pet birds: Review and perspectives. *Veterinary Research*. 44: 36.

- Dolensek EP and Burn B. 1978. The Penguin Book of Pets: A Practical Guide to Animal Keeping. Penguin Books Limited, Middlesex. Pp. 382.
- Gobbi J, Rose D, De Ferrari G and Sheeline L. 1996. Parrot Smuggling Across the Texas-Mexico Border. TRAFFIC USA, Washington D.C. Pp. 31.
- Hossain MS, Rahman MK, Nath C, Akter M, Uddin H, Islam A and Hassan MM. 2025. Ecology of pet birds and epidemiology of multidrug-resistant *Escherichia coli* and *Staphylococcus* spp. and resistant patterns in budgerigar. Research in Veterinary Science, 105825.
- Iñigo-Elias EE. 1983. The trade in diurnal birds of prey in Mexico. Birds of Prey Bulletin. 3: 128-132.
- Martin RM. 1980. Cage and Aviary Birds. William Collins Sons & Co. Ltd., London. Pp. 256.
- Nupur MN, Afroz F, Hossain MK, Harun-ur-Rashid SM, Rahman MG, Kamruzzaman M, Ferdous KA and Haque MA. 2023. Prevalence of potential zoonotic bacterial pathogens isolated from household pet birds and their antimicrobial profile in northern Bangladesh. Agrobiological Records. 11: 28-38.
- Rahman ANMA. 2004. Posha Pakhi Pakhi Posha (in Bangla). Parua, Dhaka. Pp. 80.
- Rahman ANMA and Das ZC. 2018. Present status of commercial pigeon farming in selected areas of Bangladesh. In: Proceedings of 4th International Exhibition & Seminar on Dairy, Aqua and Pet-2018, Dhaka. Pp. 19-28.
- Rahman ANMA, Hoque MN, Talukder AK and Das ZC. 2016. A survey of Japanese quail (*Coturnix coturnix japonica*) farming in selected areas of Bangladesh. Veterinary World. 9: 940-947.
- Rahman ANMA, Sharif MA, Shuvo KH, Rahman NZ, Islam MT, Hoque MN and Das ZC. 2024. Common peafowl (*Pavo cristatus*) farming in Bangladesh: Current status, reproductive behavior and health management. Journal of Science and Technology Research. 6: 21-32.
- Rahman ANMA, Shuvo KH and Sharif MA. 2025. Current status, reproductive performance and health management of turkey (*Meleagris gallopavo*) breeds under farming systems in Bangladesh. Ecology Journal. 7: 125-137.
- Royal SS, Sigma SH, Ashraf MN, Rimi SS, Affroze S, Yousup S, Hassan J, Siddique MP and Islam MS. 2024. Isolation and molecular detection of antibiotic-resistant *Staphylococcus aureus* from pet birds of Mymensingh City Corporation areas, Bangladesh. American Journal of Microbiological Research. 12: 1-6.
- Tanjim IIM, Hasan MM, Islam MA, Islam UA, Mawa Z, Prank MR and Faruk MSA. 2023. Subcutaneous emphysema in a psittacine bird: A case report. Asian Journal of Advances in Medical Science. 5: 5-9.
- Thomsen JB, Edwards SR and Mulliken TA. 1992. Perceptions, Conservation & Management of Wild Birds in Trade. TRAFFIC International, Cambridge. Pp.165.
- Veladiano IA, Banzato T, Bellini L, Montani A, Catania S and Zotti A. 2016. Normal computed tomographic features and reference values for the coelomic cavity in pet parrots. BMC Veterinary Research. 12: 182.
- Yasmin N, Khan MA and Mortuza MG. 2024. An account of ornamental bird status and species assemblage in the bird shops of Rajshahi City Corporation, Bangladesh. International Journal of Environment, Agriculture and Biotechnology. 9: 83-87.
- Zahoor MA, Zahoor MK, Siddique AB, Shafique M, Nawaz Z, Yasmin A, Qamar MF and Shaid MK. 2018. Chapter 5: Welfare of pet birds and potential zoonoses. In: Animal Welfare. Intech Open. Pp. 73-84.

