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### Perceived effectiveness of *Pashusakhis*' services in delivering primary animal healthcare: Evidence from Bahraich district of Uttar Pradesh, India

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#### Abstract

The current study evaluates the perceived effectiveness of *Pashusakhis*, who are women Community Animal Health Workers (CAHWs), providing fundamental primary animal healthcare services in Bahraich district of Uttar Pradesh, India. The perception of 100 livestock farmers were measured based on three variables namely perceived value, accessibility, and satisfaction. The findings revealed an overall positive perception among the respondent livestock farmers towards *Pashusakhis*' work. Based on the responses collected through a structured interview schedule, the mean scores for Perceived Value, Accessibility, and Satisfaction were 2.25, 2.39, and 2.15, respectively. These mean scores indicated substantially positive perceived effectiveness of *Pashusakhi* services in the region of study. Correlational analysis revealed a strong positive relationship between Satisfaction and Perceived Value ( $r = 0.67$ ), and moderate positive associations between Accessibility and Satisfaction ( $r = 0.54$ ) and between Perceived Value and Accessibility ( $r = 0.55$ ).

**Keywords:** *Pashusakhi*, perceived value, satisfaction, accessibility

#### Introduction

Livestock farming is an important source of supplementary income for rural households in India, especially for small and marginal farmers. Majority of the women in rural India are engaged in animal husbandry practices. The access to timely and affordable veterinary services remains a challenge in most of the rural areas due to inadequate infrastructure and shortage of veterinary professionals. To address such challenges and promote women's empowerment through livelihood generation, a community based livestock extension model was developed known as *Pashusakhi* model. *Pashusakhis* are Community Animal Health Workers (CAHWs), trained in ethno-veterinary treatments for animals like application of turmeric, coconut kernel, neem leaves etc. (*Pashusakhi* module) <sup>[1]</sup>. CAHWs are community members trained for a few days or weeks to provide essential primary healthcare services such as deworming, vaccination, first aid, and advisory support to livestock farmers. Their work is particularly valuable in geographically remote and resource-poor settings where formal veterinary coverage is limited (Alders, 2024) <sup>[2]</sup>.

The *Pashusakhi* model was first implemented in 2013 under

the Jharkhand Opportunities for Harnessing Rural Growth (JOHAR) Programme, supported by the World Bank (Leitch *et. al*, 2020) <sup>[3]</sup>. Following, its success, it was replicated across several Indian states including Bihar, Rajasthan, Maharashtra, Haryana, and Uttar Pradesh, with support from organizations such as the Bill & Melinda Gates Foundation, Aga Khan Foundation, Tata Trusts, The Goat Trust, and The Nudge Foundation. The *Pashusakhi* model aimed to train rural women, generally aged 20–45 years with basic literacy, to provide doorstep animal healthcare and advisory services to 100–200 households within their villages. Their responsibilities include deworming, vaccination, first aid, extension advisory, and promotion of ethno-veterinary practices using locally available herbal resources.

The current study was undertaken to evaluate the perceived effectiveness of *Pashusakhis*' work in delivering primary animal healthcare in Bahraich district of Uttar Pradesh. The study focuses on three important variables namely perceived value, accessibility, and satisfaction to understand how livestock farmers view the role and contribution of *Pashusakhis* in improving the health of the animals and enhancing the productivity.

## Materials and Methods

### Locale of the Study

The current study was conducted in Bahraich district in Uttar Pradesh, a region with one of the highest small ruminant populations in the state of Uttar Pradesh, which is also one of the aspirational districts identified by Government of India (GOI). Using an exploratory research design, data collection was done from 100 livestock farmers across 10 villages of Chitaura block, who regularly availed services from the respective *Pashusakhis* working in their villages trained by a NGO known as Aga Khan Foundation.

### Data Collection

The data was collected from 100 livestock farmers availing *Pashusakhi* services. The study focused on three variables namely Accessibility, Perceived Value, and Satisfaction to assess the perceived effectiveness of *Pashusakhis*' work. A structured interview schedule was used developed, where the respondents were asked to rate each statement ranging from 1 to 5 (1=Strongly agree & 5= Strongly disagree). Frequency distribution, mean and correlational analysis was performed for data analysis.

### Results and Discussion

**Table 1:** Mean Score and Standard Deviation for Perceived Value, Accessibility, and Satisfaction with *Pashusakhi*'s Work (N=100)

Variable	Mean Score	Standard Deviation
Perceived Value	2.25	0.51
Accessibility	2.39	0.49
Satisfaction	2.15	0.50

All the respondent livestock farmers had been in contact with *Pashusakhis* for an appreciable duration, reflecting sustained engagement within their communities. Over half of the respondents (51%) reported having contact with *Pashusakhis* for 1–2 years, while 37 percent had maintained contact for more than two years, which indicates trust among community members towards locally available *Pashusakhis* in their respective villages. Vaccination was the most frequently availed service (91%), followed by deworming (82%) and first aid (70%), showing the prominence of preventive and fundamental animal healthcare services delivered by *Pashusakhis* at the village level. Since models like *Pashusakhi* focus on small ruminants therefore majority (91%) of the respondent

livestock farmers owned goat as one of the livestock.

The analysis of the data reveals a generally positive perception of the *Pashusakhi*'s work among the surveyed livestock farmers. The Perceived Value (Table 1 and 2) of the services provided by *Pashusakhis* had a mean score of 2.25 (SD=0.51). Given the rating scale where 1 signifies "Strongly agree" and 5 signifies "strongly disagree" these finding indicates that, on an average, the livestock farmers agreed that the services provided by the *Pashusakhis* were valuable to them. The analysed data suggested that the farmers believe that *Pashusakhis*' work is beneficial, pertinent to their requirements, and helpful in the overall general well-being of their animals.

**Table 2:** Frequency Distribution of Respondent's Perceived Value regarding Services provided by *Pashusakhis* (N=100)

Statements for Perceived Value	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean Score
<i>Pashusakhi</i> services are useful for my animals	39	29	24	8	0	2.01
<i>Pashusakhi</i> has helped to improve the health of my animals.	30	46	14	10	0	2.04
I do not trust the knowledge and advice given by the <i>Pashusakhi</i> (reverse coded)	5	8	26	46	15	2.42
I find that the services provided by <i>Pashusakhi</i> are very relevant for the needs of my livestock	34	28	29	9	0	2.13
I am not willing to pay <i>Pashusakhi</i> for her services (reverse coded)	2	12	10	43	33	2.07
The <i>Pashusakhi</i> services are as helpful as para-vet or vet	23	31	22	19	5	2.52
My visits to Govt. veterinary hospital have reduced because of the presence of <i>Pashusakhi</i> in my village	30	33	17	15	5	2.32
Kids/calves mortality has reduced in my household	25	32	32	8	3	2.32
<i>Pashusakhi</i> explains my queries and gives answers to my questions very clearly	20	29	37	12	2	2.47
The services of <i>Pashusakhi</i> are financially affordable for me in comparison to para-vet or vet	18	53	20	9	0	2.20

The variable regarding the accessibility (Table 1 and 3) of the *Pashusakhis*, with a mean score of 2.39 (SD=0.49), also came within the "Agreeable" range. This finding is a strong indicator of the perceived easiness with which respondents can access the *Pashusakhis* for availing their services. The analysed data suggested that the *Pashusakhis* are considered reachable in case of emergency and they responded in a timely manner, typically within 30 minutes to one hour. This is particularly crucial in remote areas where physical access to professional veterinarians is limited due to poor infrastructure, long distances, and high transaction costs. This finding is consistent with the argument put forth by

Catley *et al.* (2004) <sup>[4]</sup> that para-veterinary professionals are essential in developing countries where veterinary services are often inaccessible.

The availability of the *Pashusakhis* within the village is a key factor, as it eliminates the need for farmers to travel long distances to veterinary hospitals for minor livestock related services. This allowed the farmers to save time and avoiding to take off from their work, which would be necessary when seeking services from a government veterinary hospital. Furthermore, respondents also felt that communicating with the *Pashusakhi* is easier than with a para-vet or a government veterinary doctor, which is likely

due to a community-based relationship. The findings are consistent with study of Bugeza *et al.* (2017) <sup>[5]</sup>, who conducted a participatory evaluation of Community Animal Health Workers (CAHWs) in Uganda where participatory

ranking showed that farmers rated CAHWs as more accessible and responsive than government or private veterinary doctors.

**Table 3:** Frequency Distribution of Respondents regarding *Pashusakhi's* Accessibility (N=100)

Statements for Accessibility of <i>Pashusakhis</i>	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean Score
<i>Pashusakhi</i> lives close to my village and it is very easy to reach her in case of emergency	34	32	28	6	0	2.06
<i>Pashusakhi</i> responds on time within 30min to 1hrs approx. whenever contacted	17	37	32	14	0	2.43
<i>Pashusakhi</i> visits regularly on a monthly basis for routine livestock health check-up	17	34	36	13	0	2.45
I find that communicating with <i>Pashusakhi</i> is relatively easy in comparison to para-vet or veterinary doctor	26	34	28	9	3	2.49
I am able to save time and do not have to take off from work because of the presence of <i>Pashusakhi</i> in my village whenever my animal is sick	32	38	17	10	3	2.14
<i>Pashusakhi</i> make regular follow-up visits even without being reminded	16	32	43	9	0	2.45
<i>Pashusakhi</i> refuse to visit during odd hours in case of emergency (reverse coded)	13	12	31	32	12	2.83
<i>Pashusakhis</i> do not respond to my calls during emergency if her payment is due because of unforeseen circumstances (reverse coded)	4	17	31	19	29	2.48

The Satisfaction with the work of *Pashusakhis* recorded the lowest mean score of 2.15 (SD=0.50), which indicated the highest level of agreement among the three variables (Table 1 and 4). The finding is particularly noteworthy, as it suggests a high degree of contentment with the quality of the animal healthcare services being provided. Farmers were satisfied with the quality of services and the care with which *Pashusakhis* handle their animals, often as if they were their own. The personal communication and respectful attitude of the *Pashusakhis* towards all farmers, including those from poor and marginalized communities, is a significant contributing factor. The presence of *Pashusakhis* also seems

to have a positive impact on women's involvement in animal healthcare decisions, as they feel more comfortable and find it easier to communicate with the *Pashusakhi* than with a male veterinary professional.

The high satisfaction with the quality of services and care, despite the *Pashusakhi's* services being technically limited in scope, suggests that farmers value practical, effective care over strict adherence to professional jurisdictions. This indicates that the *Pashusakhis* are likely performing services that may fall into the "grey area" of minor veterinary services.

**Table 4:** Frequency Distribution of Respondent's Satisfaction with *Pashusakhis' Work* (N=100)

Statements for Satisfaction with <i>Pashusakhi's Work</i>	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)	Mean Score
I am satisfied with the quality of services provided by the <i>Pashusakhi</i>	45	25	23	7	0	1.92
<i>Pashusakhi</i> handle my animals with care as if they were her own	25	47	17	11	0	2.14
I like to recommend others to take advice related to livestock health and management from <i>Pashusakhi</i>	9	47	33	11	0	2.46
I find that over the years the services provided by <i>Pashusakhi</i> have been beneficial for me in generating extra income from livestock farming	17	47	24	12	0	2.31
I find that <i>Pashusakhi</i> is respectful towards poor and marginalized livestock farmers	26	43	28	2	1	2.09
<i>Pashusakhi's</i> guidance and expertise has enhanced my confidence while taking decisions regarding livestock health and management	24	48	26	1	1	2.07
I am satisfied with the time <i>Pashusakhi</i> spends during her routine visits and gives answers to my doubts related to animal health care	23	39	27	11	0	2.26
I feel <i>Pashusakhi's</i> support and guidance has improved my satisfaction with the overall animal health care services available to me	20	38	37	5	0	2.27
I am willing to continue taking livestock health related services from <i>Pashusakhi</i>	26	30	35	9	0	2.27
It is easier for women in my household to contact the <i>Pashusakhi</i> than to contact a government vet or para-vet.	25	56	11	6	0	1.96
Women in my household feel more comfortable speaking with <i>Pashusakhi</i> than with a male animal healthcare worker	30	31	33	6	0	2.15
The presence of <i>Pashusakhi</i> has made it easier for women in our household to get involved in animal health decisions	44	30	14	12	0	1.94

The above findings are inconsistent with those reported by Swai and Masaaza (2012) <sup>[6]</sup> in their assessment of Community Animal Health Workers (CAHWs) in Tanzania, where similar community-based animal healthcare system

was implemented in areas with limited access to formal veterinary care infrastructure. The present study and the study conducted in Tanzania demonstrates that CAHWs play an indispensable role in delivering essential animal

healthcare services such as vaccination, deworming, first aid, and disease surveillance particularly in remote and resource-poor settings where conventional veterinary services are very limited.

Correlational Analysis was conducted to analyse the relationship among the three variables summarised in the Table 5. The results suggests that the variables of perceived value, accessibility and satisfaction are interconnected for the overall perceived effectiveness of the *Pashusakhis*’ work in the region of study.

**Table 5:** Summary of the Correlation among Perceived value, Accessibility and Satisfaction (N=100)

Relationship	Pearson Correlation (r)
Perceived value and Satisfaction	0.67
Accessibility and Satisfaction	0.54
Perceived value and Accessibility	0.55

Satisfaction and Perceived value were shown to be strongly positively correlated ( $r = 0.67$ ). A moderately strong positive correlation was observed between Accessibility and Satisfaction ( $r = 0.54$ ). This shows that the ease with which farmers can communicate and interact with *Pashusakhis* is significantly contributing to their level of satisfaction. The Perceived value and Accessibility also showed a relatively significant positive association ( $r=0.55$ ), indicating a positive feedback loop in which convenience boosts perceived value and vice versa.

The high perceived value of *Pashusakhi* services (mean score 2.25) and a strong correlation with satisfaction ( $r=0.67$ ) reinforce the positive impact of CAHW programs documented worldwide. The findings of this study, regarding farmers believing *Pashusakhis* have improved the health and well-being of their animals is consistent with reports from Afghanistan, Kenya, and Tanzania, where CAHWs helped in reducing livestock mortality and morbidity (Catley *et al.* 2004) <sup>[4]</sup>.

The above findings are in close agreement with those reported by Ponnusamy *et.al* (2017) <sup>[7]</sup> in Rajasthan, who evaluated the *Pashusakhi* model implemented under the *Mahila Kisan Sashaktikaran Pariyojana (MKSP)*. The study found that *Pashusakhi* significantly contributed to improving livestock management practices, enhancing awareness of animal health, and empowering rural women through improved confidence, social participation, and decision-making ability. The present study highlights the role of women-led community animal health models in addressing the needs of resource-poor livestock farmers who traditionally had limited access to timely veterinary care.

**Conclusion**

The study highlights how the *Pashusakhis* have effectively addressed the long-standing gap in the availability of timely and affordable animal healthcare services, especially to small ruminant farmers in remote areas, neglected by traditional veterinary service infrastructure. By providing doorstep preventive and basic primary animal healthcare services, *Pashusakhis* have emerged as trusted Community Animal health Workers (CAHWs), ensuring improved animal health, reduced mortality, and enhanced productivity. Their close proximity to livestock farmers, especially women, has made them indispensable for

promoting preventive animal health care at the grassroots level.

Beyond animal healthcare delivery, the *Pashusakhi* initiative has served as a prominent tool for women’s economic empowerment and livelihood diversification. Many *Pashusakhis* have evolved into community role models affectionately called as ‘*Doctor Didi*’ earning both social respect and financial stability similar study in Uganda had shown that CAHWs, from local communities, achieve recognition, build social capital, and gain legitimacy in the community (Ongok *et.al* 2018) <sup>[8]</sup>. Initiatives such as the Lakhpati *Didi* Scheme under the National Rural Livelihoods Mission (NRLM) have further amplified their opportunities by integrating livestock-based livelihoods with income generating pathways, aiming to make rural women financially independent (DAHD, 2024) <sup>[9]</sup>. Mockshell *et.al* (2014) <sup>[10]</sup> highlighted a key challenge that is the sustainability and legitimacy of CAHWs where, it was noted that despite CAHWs’ popularity and performance, they often operated with ambiguous legal status, limited supervision, and inconsistent support from public veterinary institutions. However, Government of India’s focus on formalizing Community Animal Health Workers (CAHWs) through initiatives such as A-HELP (Accredited Agent for Health and Extension of Livestock Production) and exploring Public-Private Partnership (PPP) models under the Department of Animal Husbandry and Dairying (DAHD) is a progressive step. Such an institutional recognition will ensure standardized training, technical support, and fair compensation, promoting sustainability and accountability in community-based animal healthcare service delivery.

Overall, the *Pashusakhi* model demonstrates successful merging of animal healthcare, extension advisory services, gender empowerment, and livelihood generation. Scaling up this model through structured government-NGO partnerships and integrating it within national livestock development programs can pave the way for a resilient, inclusive, and women-led animal healthcare system in rural India.

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