

Smallholders' milk quality awareness in Indonesian dairy farms

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Introduction

- Milk production in low- & middle-income countries (LMICs) is the highest in the world (total kgs) and dominated by smallholder farmers.
- Improving milk quality in smallholder dairy farmers in LMICs → a truly global impact.
- It is unclear whether smallholder dairy farmers are aware of milk quality.
- The aim of this cross-sectional study was to identify factors associated with smallholders' milk quality awareness.

Methodology

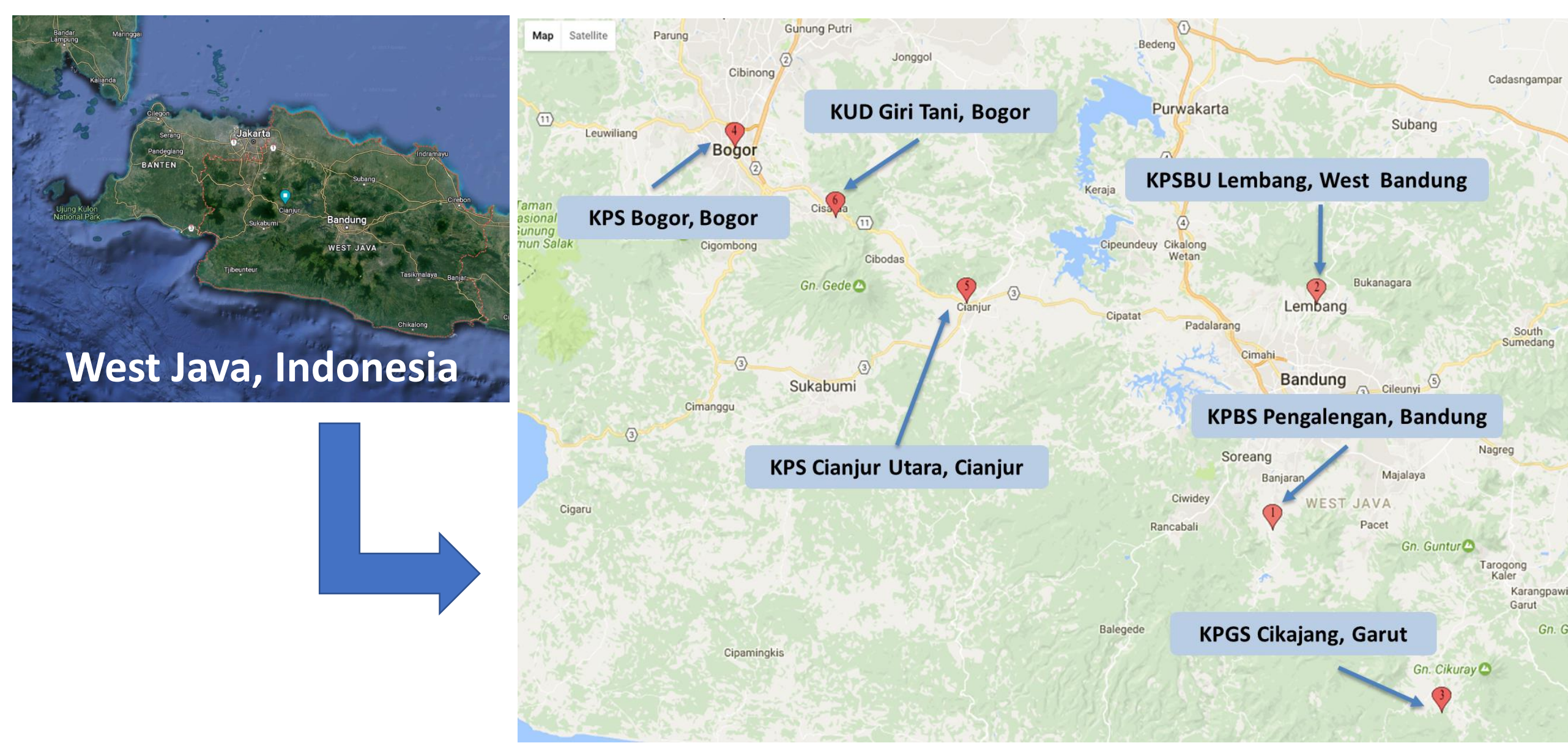
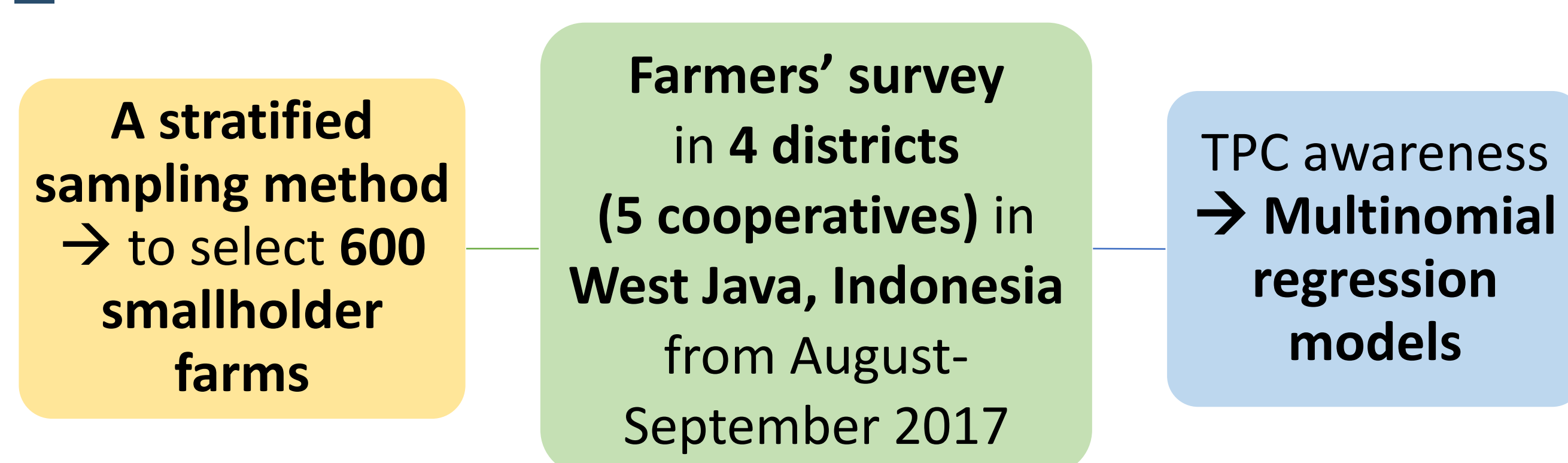


Fig. 1. Dairy cooperative's location in West Java, Indonesia

Results

- Milk quality awareness of the smallholder dairy farmers was low (Figure 2).
- This study revealed that 6 variables were significantly associated with dairy farmers awareness of TPC (Table 1).
- Dairy cooperative was one of significant variables in the final models for SCC awareness of dairy farmers.

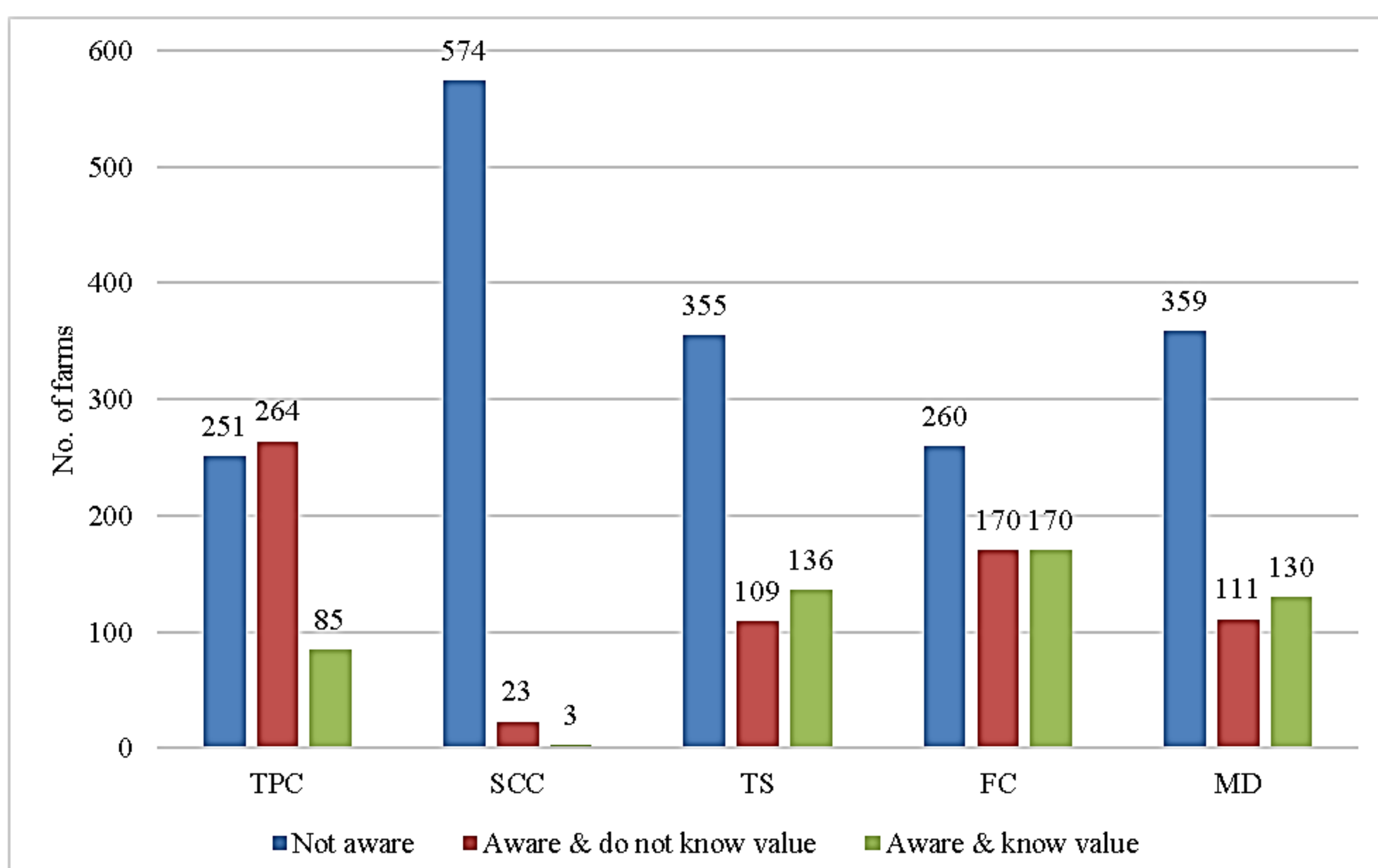


Fig. 2. Indonesian smallholder farmers' awareness of total plate count (TPC), somatic cell count (SCC), total solid (TS), fat content (FC), and milk density (MD)

Table 1. Final model for TPC awareness of dairy farmers

Variable and category	Aware & do not know TPC value vs. Not aware ¹		Aware & know TPC value vs. Not aware ¹		Overall P-value ²
	Odds ratio	95%CI	Odds ratio	95%CI	
Cooperative					0.02
I	Ref.		Ref.		
II	1.2	0.7-2.0	4.3	1.4-13.6	
III	1.3	0.7-2.5	1.9	0.4-8.6	
IV	1.2	0.3-4.3	12.9	1.6-101.3	
V	2.2	1.0-4.5	9.5	2.2-40.7	
Distance to neighbor dairy farmer					0.04
< 0.5 km	Ref.		Ref.		
>0.5-2 km	0.9	0.6-1.4	0.3	0.2-0.7	
>2 km	0.8	0.5-1.4	0.6	0.3-1.4	
Technology adoption index					<0.001
Score <18	Ref.		Ref.		
Score 18-20	2.6	1.6-4.2	2.4	1.1-5.1	
Score >20	4.4	2.6-7.6	6	2.7-13.5	
TPC as the most important quality factors for the buyer					<0.001
No	Ref.		Ref.		
Yes	6.2	3.7-10.3	20.7	9.8-43.6	
Receive milk production information from cooperatives					<0.001
>2 visits	Ref.		Ref.		
1-2 visits	1.6	0.8-3.2	0.4	0.2-1.0	
0 visit	3	1.5-5.8	0.7	0.3-1.6	
Receive cow's health information from veterinarians					0.03
>2 visits	Ref.		Ref.		
1-2 visits	1	0.5-1.8	3.3	1.4-8.0	
0 visit	1.3	0.8-2.3	1.8	0.8-3.9	

¹Value in bold has P-value<0.05

²Based on the -2 Log-likelihood ratio test

Conclusion

- Cooperatives play an important role in increasing the milk quality awareness of smallholder farmers in Indonesia
- To globally improve milk quality, it is important that smallholder dairy farmers receive participatory extension programs to improve the milk quality & animal health of their farms.

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