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## ***Investigating the welfare, management and human-animal interactions of cattle in four Indonesian abattoirs***

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### **Abstract**

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*This study reports novel information on the animal handling, management and human-animal interactions in Indonesian cattle abattoirs. The slaughter of 304 cattle was observed and there was a high percentage of re-stuns in all abattoirs (range: 8–18.9%) when compared to a variety of international auditing guidelines. The average stun-to-neck cut time was within international recommendations (average: 9 s; range: 4–15 s). Time spent in lairage varied between animals and facilities and was compliant with international guidelines. Handling times were extremely variable (2 s–23 min 40 s), but were only weakly correlated with a variety of handler techniques including the total number of handler interactions (sum of visual, auditory and tactile interactions, suggesting that long handling time does not increase handler interactions. There was a moderate correlation between the subjective handling scale and most of the objective behaviours, indicating that this may be a useful way to summarise handler behaviour in future assessments. The current study provides novel information about animal welfare in Indonesian abattoirs and highlights that management practices at the four abattoirs generally comply with international standards. The results also suggest that the subjective handling scale was moderately associated with the frequency of handler interactions, and so may be a useful measure of handler behaviour.*

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**Keywords:** *animal welfare, cattle, handling, human-animal interactions, live export, slaughter*