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## Predicting voluntary dry matter intake of Bos indicus cattle: a case for conceptual models

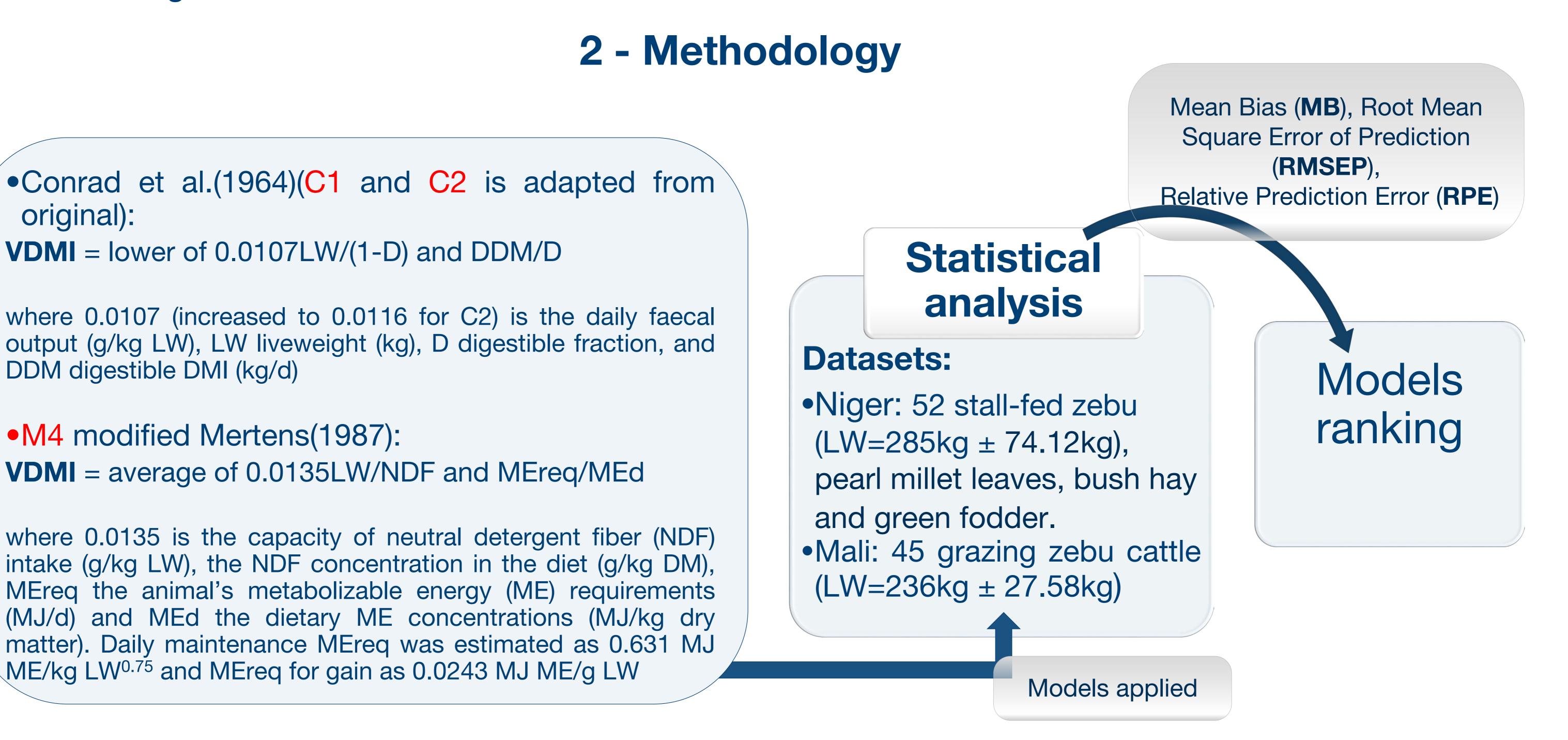
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## 1- Introduction

Cattle reproductive and productive performance in the (Sub-)Tropics is mainly determined by the voluntary dry matter intake (VDMI). Conceptual mathematical models (CMM) have been suggested as a reliable option for predicting VDMI, as they are population independent and use simple mathematical equations and parameters.

\*Therefore, this study assessed the reliability of three CMM to predict VDMI of non-grazing and grazing cattle in Niger and Mali.



## 3 - Results

- Statistically, the most accurate results were for grazing cattle, ranked as: M4, C2 and C1.
- There is an inversion in the ranking between C1 and C2, for grazing and non-grazing cattle.
- M4 for grazing cattle is the only reliable model (RPE<20% of RMSEP).

**Table 1.** Statistical evaluation of three CMM applied in two datasets, grazing and non-grazing cattle, to calculate VDMI in semi-arid Tropics.

	Stall-fed cattle			Grazing cattle		
	C1	C2	M4	C1	C2	M4
Mean Bias (kg/animal a day)	-1.50	-1.90	-0.80	1.85	1.48	-0.11
RMSEP (kg/animal a day)	1.90	2.20	1.30	2.04	1.72	1.12
RPE (% of RMSEP)	40.80	48.30	28.60	33.26	28.01	18.33
Ranking	2	3	1	3	2	1

## 4- Conclusion

❖ The most promising model is M4 (RPE<20%), while C2 and C1 could be further refined to improve the accuracy of their predictions.

