**Application**

An increase in village chicken flock sizes is closely related to dietary diversity and, hence, food and nutrition security.

**Introduction**Dietary diversity refers to different food items a household eats over a particular reference period (Verger *et al.,* 2021). It is one of the fundamental factors of nutritional security, and a proxy used to measure diet quality (Jones, 2017; Ali *et al.,* 2019). The dietary diversity scoring method, which is a count of food items consumed by a household over the preceding 24 hours, is the preferred measure of estimating dietary diversity (Verger *et al.,* 2021). The objective of the study was to investigate the relationship between village chicken flock sizes and dietary diversity of households in urban, peri-urban and rural environments. These different environments are usually reflected as the distance from the city centre, forming a rural-urban gradient (Chagomoka *et al*., 2015).

**Materials and Methods**

Ethical approval for the study was provided by the University of KwaZulu-Natal (Reference number: HSSREC/00005927/2023). Twelve sites were selected in urban, peri-urban and rural environments to create a rural–urban gradient on dietary diversity scores. The sites representing the urban settlements lay within 10 km from the city centre, while the peri-urban residential areas were located between 10 and 40 km from Pietermaritzburg city. The rural settlements were between 40 and 70 km from the city centre.  Face-to-face interviews were conducted using a structured questionnaire on rural (*n* = 100), peri-urban (*n* = 100), and urban (*n* = 100) areas of Pietermaritzburg uMgungundlovu District, KwaZulu-Natal in South Africa. The questionnaire captured household demography, chicken flock sizes and composition, reasons for keeping village chickens, and the household’s daily diet composition and diversity. Dietary diversity was assessed using a 24-h dietary recall and a dietary diversity scoring method.

**Results**

There was a linear increase in the flock size of village chickens with the distance from the city centre. An increase of 1 km from the city centre increased village chicken flock size by 30.4 (P<0.01). Village chickens contributed positively to household income from chicken sales and manure. A negative quadratic relationship was observed between distance from the city centre and the number of livestock-derived foods (LDFs) that were consumed (y = −1.06x2 + 4.31x − 1.38; P<0.05). There was a linear increase in distance from city centre and consumed vegetables. The number of consumed vegetables increased with an increase in distance from city centre by 1.33 (P<0.01). A negative quadratic relationship was observed between distance from the city centre and consumed pulses (y = −1.02x2 + 4.27x − 2.13; P<0.001). The negative elations suggest that the benefits of large flocks in rural areas are compromised by reduced levels of income. The number of consumed LDFs increased by 0.45 (P<0.05) as the flock size increased. The number of consumed vegetables increased with an increase in village chicken flock sizes by 0.68 (P<0.01). There was a linear increase in the dietary diversity score with distance from city centre. Dietary diversity score increased by 0.24 (P<0.05). There was a positive linear relationship between village chicken flock sizes and dietary diversity. Dietary diversity score increased with an increase in village chicken flock sizes by 1.50 (P<0.05).

**Conclusions**

Availability of village chickens improves household’s dietary diversity and alleviate poverty in both urban and rural areas. Expanding village flock sizes could, therefore, enhance food and nutrition security at the household level.

**References**

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