

BRIDGING THE SUSTAINABILITY COMMUNICATION GAP: Comparing Small Farm and Consumer Sustainability Messages on X

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BACKGROUND AND PURPOSE

Small farms face barriers to market access and digital communication (Borges et al., 2023; Gibson et al., 2020). This study compares sustainability messages on X to inform agricultural education, Extension, and small-farm communication.

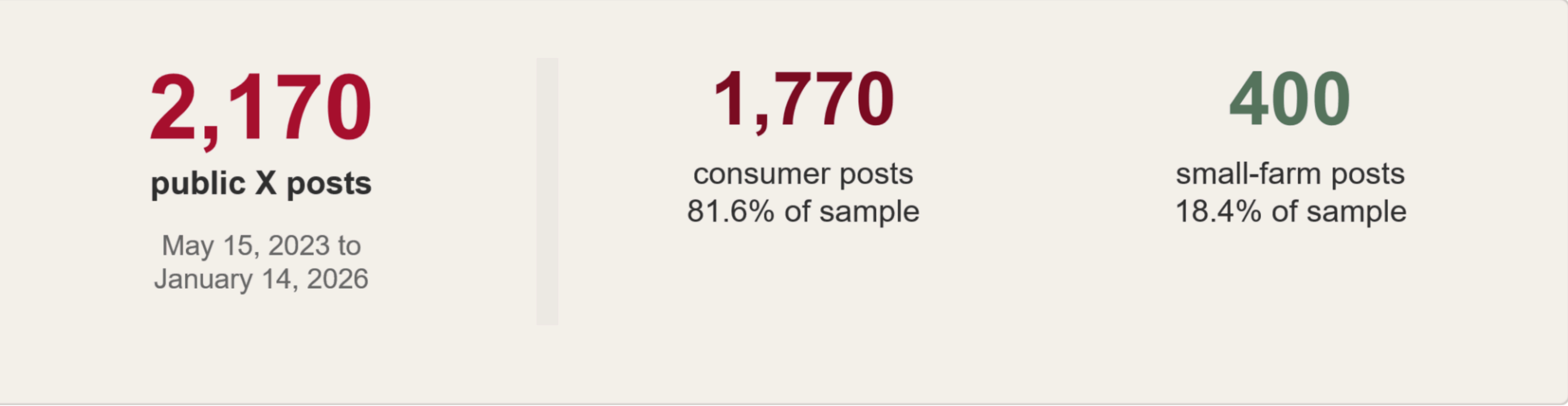
CONCEPTUAL FRAMEWORK

Triple bottom line



The triple bottom line provides a shared coding framework (Elkington, 1997).

DATA COLLECTION AND ANALYSIS



Post-date coverage; final sample after screening and user-category standardization.

Design

Comparative qualitative content analysis with a netnographic orientation (Kozinets, 2002).

Keyword and hashtag selection

Preliminary searches of farmer- and consumer-oriented sustainability conversations informed six keyword phrases and related hashtags:

sustainable agriculture
sustainable farming
regenerative agriculture

sustainable food
sustainable living
sustainable cooking

Apify extraction and screening

Apify automated keyword/hashtag searches, scrolling and pagination through X, capture, and export. Fields included text, date, URL, available engagement metrics, keyword/hashtag source, and preliminary user category. Screening standardized user-category labels.

NVivo coding and theme development

The triple bottom line guided deductive coding, with subthemes refined inductively from repeated patterns (Braun & Clarke, 2006). Posts could receive primary, secondary, and, where applicable, tertiary themes.

Analytic transparency

The post is the unit of analysis. Group denominators are 1,770 consumer and 400 small-farm posts. Themes can overlap, so percentages do not sum to 100%. Captured URLs, dates, and search-source fields support traceability.

ANALYTIC DEFINITIONS AND POSTING CRITERIA

Small-farm accounts

The guide identifies small-farm posts/accounts by (1) a U.S. location, (2) farming as the primary occupation, (3) growing crops or raising animals for consumption, and (4) primarily local advertising or services.

Consumer accounts

Everyday individuals or groups purchasing or using goods for personal or household needs, with little or no farming expertise. Criteria: (1) post content and self-identification; (2) profiles and interaction patterns; (3) personal or non-sponsored content; (4) no overt business affiliation; and (5) U.S. posting location.

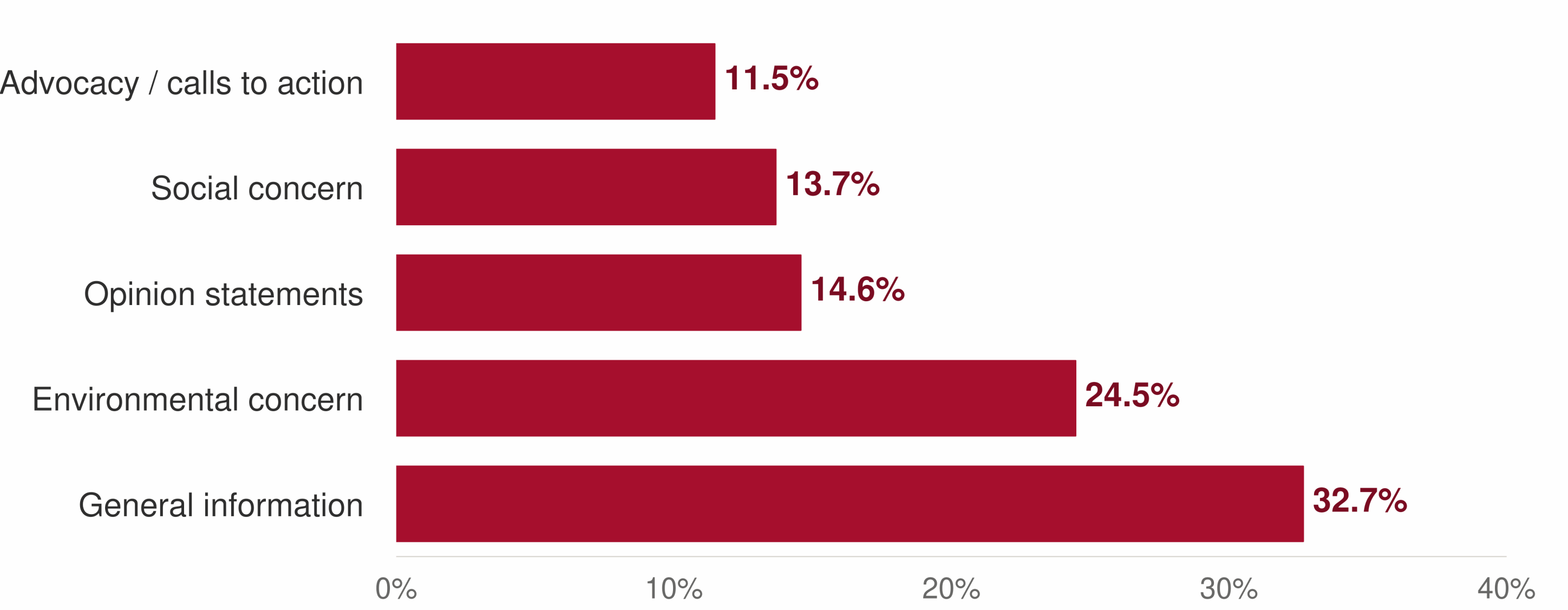
Coding-guide benchmark for farms: gross cash farm income below \$350,000/year. The supplied materials do not document income verification.

REFERENCES

Borges, E., Campos, S., Teixeira, M. S., Lucas, M. R., Ferreira-Oliveira, A. T., Rodrigues, A. S., & Vaz-Velho, M. (2023). How do companies communicate sustainability? A systematic literature review. Sustainability, 15(10), Article 8263. <https://doi.org/10.3390/su15108263>

Elkington, J. (1997). Cannibals with forks: The triple bottom line of 21st-century business. Capstone.

FINDINGS: CONSUMER POSTS

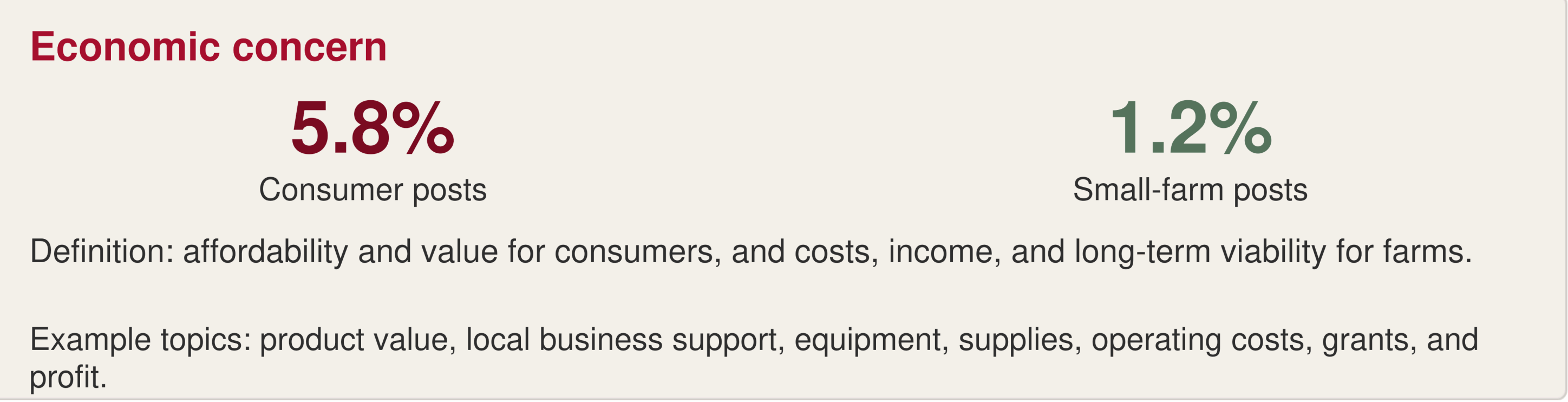


Percentage of consumer posts containing each theme (n = 1,770)

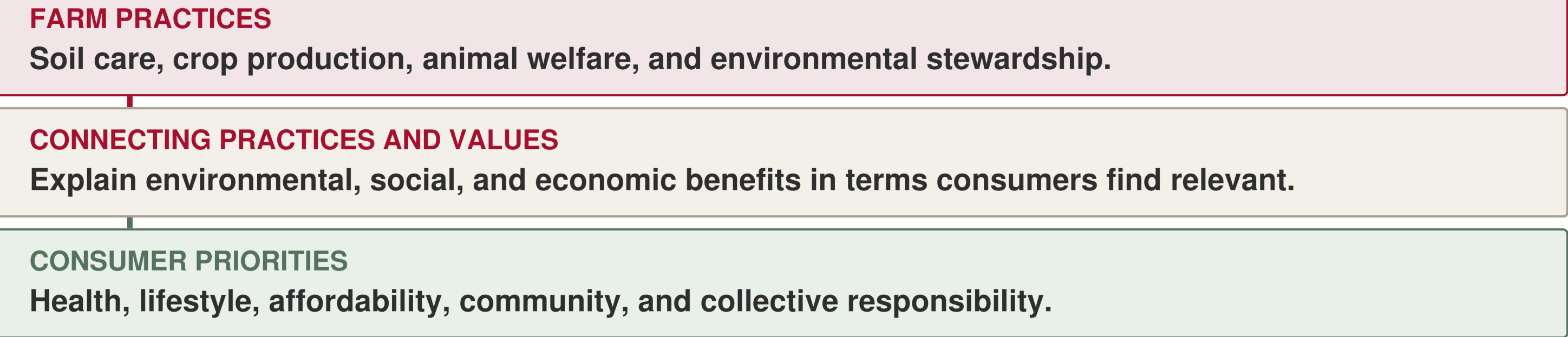
General information sharing led consumer posts. Along with opinions, social concerns, and advocacy, these messages linked sustainability to values, wellness, lifestyle, and collective action.

Theme	Detailed definition	Example topics
General information	Sharing sustainability-related information, news, or resources to inform an audience.	Sustainable food systems, environmental issues, farming information, and food-related resources.
Environmental concern	Concern about how food production, purchasing, consumption, or disposal affects natural resources.	Food waste, carbon footprints, packaging, energy use, pollution, and chemical runoff.
Opinion statements	Personal beliefs, evaluations, or preferences about sustainable food and everyday consumption.	Views on sustainable lifestyles, environmental responsibility, food choices, and personal values.
Social concern	Concern for people affected by food systems, including workers, consumers, and local communities.	Fair wages, safe working conditions, equality, transparency, and corporate accountability.
Advocacy / calls to action	Explicit support for, or requests to adopt, sustainable behaviors at an individual or collective level.	Calls to recycle, conserve water, reduce pesticides, lower emissions, or change consumption.

Definitions and example topics summarize the reported themes and the updated coding guide.



BRIDGING THE MESSAGE GAP

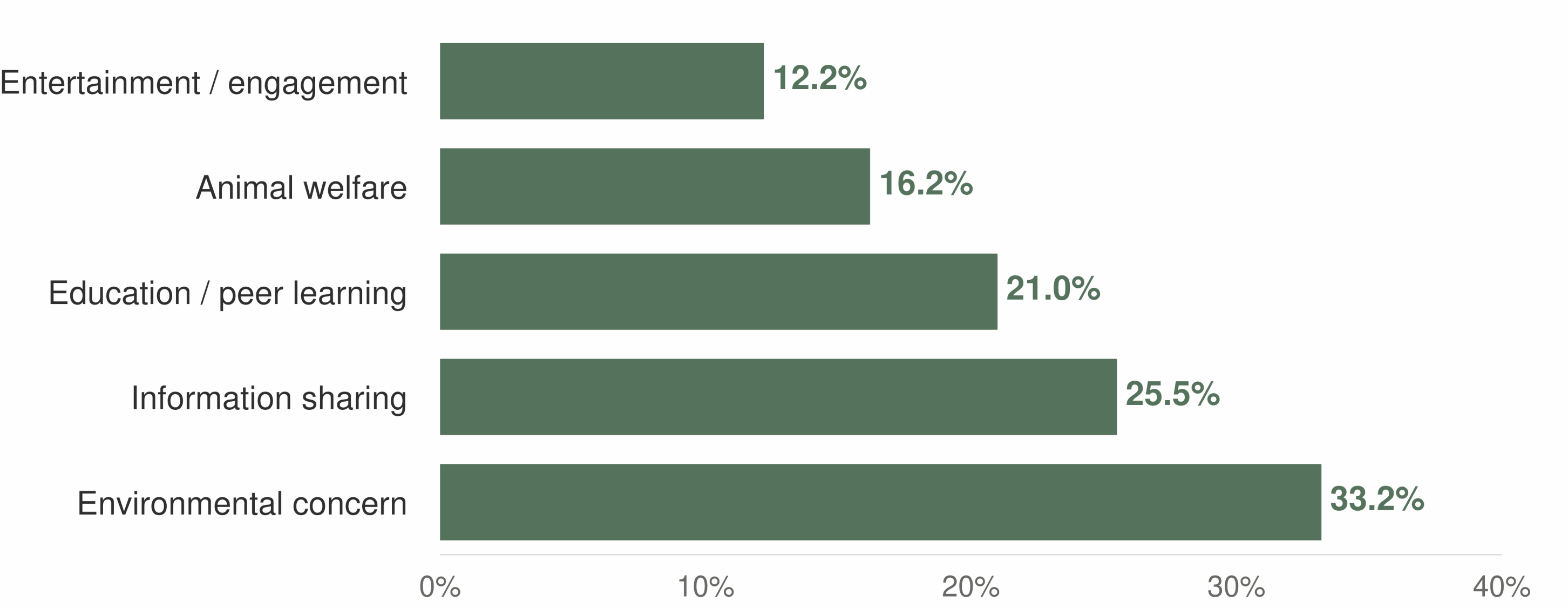


Education and Extension: use transparent storytelling to connect farm practices, consumer priorities, and environmental, social, and economic benefits.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp0630a>

Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. Journal of Marketing Research, 39(1), 61-72. <https://doi.org/10.1509/jmkr.39.1.61.18935>

FINDINGS: SMALL-FARM POSTS



Percentage of small-farm posts containing each theme (n = 400)

Environmental concern led small-farm posts. Education and peer learning appeared in 21.0% of posts. Themes emphasized stewardship, soil and crop health, animal care, and practical knowledge.

Theme	Detailed definition	Example topics
Environmental concern	Concerns about environmental problems and the natural resources used in agricultural production.	Climate change, drought, soil and crop health, pollution, water use, and chemical runoff.
Information sharing	Sharing information about farm operations, sustainability practices, or agricultural resources.	Current practices, regenerative farming, farm updates, resource links, and production information.
Education / peer learning	Fact-based instruction or knowledge exchange grounded in farming expertise, research, or practice.	Workshops, demonstrations, instructional videos, written guides, and peer learning.
Animal welfare	The physical and mental well-being of livestock through nutrition, health care, housing, and humane care.	Species-appropriate feed, clean water, veterinary care, disease prevention, and low-stress housing.
Entertainment / engagement	Content or activities that attract attention, provide enjoyment, or engage audiences with farm life.	Farm tours, U-pick activities, festivals, podcasts, short videos, and social media trends.

INTERPRETING THE FINDINGS

Environmental concern provides common ground

Environmental concern appeared in 33.2% of small-farm posts and 24.5% of consumer posts, a difference of 8.7 percentage points. Shared environmental concern offers common ground, even though the groups attached different meanings to sustainability.

The gap concerns how sustainability is framed

Farms emphasized soil care, animal welfare, and crop production, with education or peer learning present in 21.0% of posts. Consumers connected sustainability to health, lifestyle, environmental protection, affordability, social values, and collective responsibility. The gap therefore concerns how practices connect to consumer priorities. Clear explanations may make these connections more visible.

Economic sustainability remains less visible

Economic concern appeared in 1.2% of farm posts and 5.8% of consumer posts. Its limited visibility identifies an opportunity to explain affordability, farm viability, market access, and local economic support alongside environmental and social benefits. Low mention frequency does not establish that either group considers economics unimportant.

Scope: keyword-selected public posts. Counts are not unique users. Findings are descriptive and do not establish population prevalence or purchasing effects.

Theme and account definitions: study abstract and author-supplied Coding Guide 9-11 update.