Transforming Agrifood Systems in South Asia

Qualitative research approaches for studying local food environment and drivers of food purchase in South Asia

Research Protocol: 1, Work Package 3
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CONTEXT

The High Level Panel of Experts on Food Security and Nutrition (2017)'s definition of the food environment has been expanded to include the significant issue of sustainability and the different types of food environment relevant to low- to middle-income countries (Downs et al., 2020), while Turner et al. (2018) builds on food environment research into the socio-ecological theory that posits that inter-related personal and environmental factors determine health-related behaviors.

To understand food environment influencing dietary behaviors of socio-economically disadvantaged groups, in this study, two qualitative approaches are used – Photovoice and VPA. We explore the factors in the food environment that drive access to and purchase of nutritious food for low-income households in South Asia, using Photovoice (Pradeilles et al., 2021). To capture information on food choice, buying behaviors and dietary intake, we use Verbal Protocol Aanalysis (Petrescu et al., 2019). The results of the study can be used to

understand dietary behaviors, food choices and associated factors in acquiring healthy food for home consumption.

TAFSSA (Transforming Agrifood Systems in South Asia), a CGIAR Regional Integrated Initiative, aims to understand the rural food environment and consumer behavior through systematic data collection, conducting actionable research and stakeholder engagement.

OBJECTIVES

The study aims to identify factors from the food environment that shape low-income households' purchase of nutritious food – specifically, to understand how consumers acquire healthy food from different sources for home consumption. It also gathers data on consumers' feelings, tastes, preferences, and other influencing factors while purchasing food from market.

CIMMYT International Maize and Wheat Improvement Center · IFPRI International Food Policy Research Institute · IRRI International Rice Research Institute · IWMI International Water Management Institute · CIP International Potato Center · WorldFish · ILRI International Livestock Research Institute

PHOTOVOICE

We develop a Discussion and Topic Guide and Photovoice protocol to carry out participatory photomapping, and follow-up interviews to identify the sources of healthy and nutritious food, including the purchase of food items for home consumption.

The researcher/moderator will conduct the interviews in a conversational manner and converse in English and local languages, Bangla, Hindi and Nepali as appropriate. As an exploratory approach, probing and follow-up questions will depend on the photos and flow of discussion during the interview session. The discussion guide will be pre-tested and revised as necessary based on its outcome.

Respondents

The study has two types of respondent group: (1) rural households affiliated with a self-help group (SHG) on the assumption SHG (e.g. by being part of JEEViKA) has more likelihood of getting nutrition and other training, therefore more knowledge on healthy diets, and (2) rural households not affiliated with a SHG. Both male and female adult members of the households will participate in the photovoice, and households will have representation from various caste groups as well as having young members. The protocol can be implemented in urban areas; however, the priority is to capture rural households.

Village selection

Villages are purposively sampled in Nalanda (India), Karnali (Nepal) and Rangpur (Bangladesh). Villages are selected based on habitat clustering which considers road density, number of food stores/shops, and habitat types.

Table 1. Distribution of villages based on habitat clustering

Habitat clusters	No. of villages	%	Sample villages
Low density	25	51%	4
Medium density	13	27%	3
High density	11	22%	3
Total	49	100%	10



Above: From left: Engagement with participants., local shopping and Local market. Ph0to credit: Household member

Habitat clustering in Nalanda provides three clusters with a total of 49 villages, representing five percent of the total number of villages based on the Village Census 2011. These 49 villages are part of the TAFSSA's local food system assessment where complementary household and market will be surveyed, and other stakeholder engagement will happen(Table 1). 10 villages will be selected from each locations based on habitat clusters and market intensity.

Household selection and classification

The study considers the following selection criteria: (1) *low-income* households where farming is a primary occupation of the household head, has a *kutcha/semi-pucca* house structure, landholding below one acre, and with standard of living as a supplementary dimension to observe, among others, use of cooking fuel, sanitation, drinking water and access to electricity, (2) *family composition* based on the age of participants, and (3) households from each village belonging to *different castes*. In each household, male and female household members involved in purchasing food for the household, and willing and able to commit five days to the activity specified will be invited to participate.

Data collection approach

The study will implement a three-step approach to collect the data:

Step 1: first engagement of participants
Step 2: classification of photographs
Step 3: follow-up interviews.

In Step 1, the key tasks for researchers is to engage with participants by providing a clear and simple guideline of the activity – the use of tablets for taking photos and how best to capture the photos. The guideline includes the general task of taking photos such as *Where do you buy food items for you and your household?*

The pictures could include ingredients of the dishes that the participants prepare to be eaten by household members at mealtimes such as breakfast, lunch, and dinner or in between as snacks. When taking pictures of food items purchased from market, participants will be requested to follow a certain procedure, and to photograph (1) the location of the store/vendor, (2) the entrance and exit of the store, if applicable, (3) the display of food items around the store, and (4) the cash payment counter and items placed near it, if applicable. The researchers will provide a guide sheet to the basic functionality of the tablets to be used by participants to take and save the pictures (during their regular practice such as shopping); each household is allocated five days to collect the photos, during which the researchers visits to check on their progress.

Above:: From left: Engagement with participants/. photo credit: J Ynion

Step 2 involves the collection and classification of the photographs. The researchers collect the tablets from participants after five days and screen and organize the photographs by removing/separating those which are irrelevant. Each resulting set of photos will be classified according to the different types of built food environment depicted (informal or formal) (Downs et al., 2020) through the researchers' lens. The typologies used to determine the specific types of markets and retail stores will be aligned with the TAFSSA market and retailers' survey.

The third and last step of data collection are the follow-up interviews. Each participant will be asked in an individual interview about what their photos represent, the reason behind capturing specific shots of food items/retail stores/markets, the message they would like to convey, and how they decided which food item to purchase. If appropriate, the participant will be probed to elicit their perception of the elements of the food environment and individual factors which influence diets (following Downs et al., 2020; Turner et al., 2018), based on the photos they captured and to understand their gastronomic system, following the Gastronomic Systems Framework (Cuevas et al., 2021; Custodio et al., 2021; Samaddar et al., 2020). Household- and participant-specific questions will be administered based on the photos and on researchers' understanding in Stage 2.

Above: Testing VPA protocol at a market in Anand. Photo credit: Prakashan Veettil

VERBAL PROTOCOL ANALYSIS

The study deploys concurrent verbal protocol analysis, which is a qualitative approach that involves participants thinking aloud while engaging in a task or making a judgment (e.g. purchasing food). Respondents will be members of low-income households in South Asia.

Respondents

The study targets the sampling of 16 participants, 4 low-income households (1 male, 1 female from each household) linked with SHGs, and 4 low-income households (1 male, 1 female from each household) not linked with a SHG (1 household=1 village) in each locations. Both male and female household members involved in actual food purchasing and who are involved in making decisions about diet or cooking, will be invited to participate.

Instrument

A protocol and topic guide has been developed for concurrent verbal protocol analysis in order to identify food procurement from various sources. As verbal protocol analysis is a technique for process tracing, instead of a structured questionnaire researchers will ask probing and follow-up questions. Questions will depend on the discussion flow during the purchase process. The discussion guide will be pre-tested and revised as required based on its outcomes.

Testing the instrument in field

Researchers will invite potential respondents for interview. To gauge their suitability, respondents will be asked some pre-screened questions, such as: What type of food do you consume on a vegetarian day? (at breakfast, lunch, dinner) What type of food do you consume on a non-vegetarian day? (at breakfast, lunch, dinner) Where do you buy your food items? How far is the market from your place? Is it far or close for you? The study will implement the following steps: 1) Guiding the participants – researchers will provide a protocol briefing to participants and train them before conducting the actual verbalization process. 2) Collecting and capturing the verbal protocols – researchers will video record the entire verbalization; the information collected will be transcribed and analyzed using N-Vivo software. Respondents were trained and briefed about the concurrent verbal protocol methodology, and three were instructed on the process of verbalisation and its importance. After reaching the market, the researcher captured the responses about overall buying behavior, the decision-making process, and knowledge about and preferences for nutritional information about food items.

Patna market, 11 November, 2022

To capture the variability of the study, two respondents were selected randomly from lower income groups: (1) from the vegetable shop in an unorganized market, and (2) for the grocery stall in an organized market. Both respondents were briefed about VPA methodology and trained in the verbalisation procedure. The entire verbalization process was recorded for all respondents.

Anand market, 27 December 2022
In the state of Gujarat, VPA methodology was administered and a pilot study was conducted. Two participants were briefed about the process and instructed on how to verbalize their thoughts. The entire process was captured on video while the researcher was probing the respondent, when the thought verbalisation paused for three seconds. The study was conducted purchasing food items on a (1) vegetarian and (2) non-vegetarian day.



Pictures form testing of VPA in the local markets at Anand, Gujarat. Photo Credit: Jigar Patel.

EXPECTED OUTPUTS

The study will validate the use of qualitative approaches in understand food environment and explore the cues and signals that consumers use while they purchase food items. Interviews will be voice recorded, transcribed and coded. NVIVO software will be used for qualitative coding and analysis. To ensure quality of data, primary, secondary and tertiary level qualitative coding will be employed. There is an option to conduct a short survey with each household/consumer after photovoice step3 or VPA food purchasing, conditional on the participant's willingness. The data from these food environment will then be linked with the household and market survey data.

Following outputs are derived from this study:

1. A method tool kit describing how to conduct qualitative studies to understand rural food environments in South Asia
2. Stakeholder dialogue and engagement on addressing key drivers of food purchase to promote healthy diet in the region
3. Scientific publications

REFERENCES

Cuevas, R. P., Custodio, M. C., Ynion, J., Samaddar, A., Demont, M. (2021). Chapter 4 - Gastronomic systems research. Gastronomy and Food Science. Academic Press. Pages 55-74. ISBN 9780128200575. doi: 10.1016/B978-0-12-820057-5.00004-2.

Downs, S. M., Ahmed, S., Fanzo, J., & Herforth, A. (2020). Food Environment Typology: Advancing an Expanded Definition, Framework, and Methodological Approach for Improved Characterization of Wild, Cultivated, and Built Food Environments toward Sustainable Diets. *Foods*, *9*(4), 532. MDPI AG. doi:10.3390/foods9040532

Pradeilles, R., Irache, A., Wanjohi, M. N., Holdsworth, M., Laar, A., Zotor, F., Tandoh, A., Klomegah, S., Graham, F., Muthuri, S. K., Kimani-Murage, E. W., Coleman, N., Green, M. A., Osei-Kwasi, H. A., Bohr, M., Rousham, E. K., Asiki, G., Akparibo, R., Mensah, K., Aryeetey, R., … Griffiths, P. (2021). Urban physical food environments drive dietary behaviours in Ghana and Kenya: A photovoice study. Health & place, 71, 102647. doi:10.1016/j.healthplace.2021.102647

Samaddar, A., Cuevas, R. P., Custodio, M. C., Ynion, J., Ray Chakravarti, A., Mohanty, S. K., & Demont, M. (2020). Capturing diversity and cultural drivers of food choice in eastern India. *International journal of gastronomy and food science*, *22*, 100249. doi:10.1016/j.ijgfs.2020.100249

Turner, C., Aggarwal, A., Walls, H., Herforth, A., Drewnowski, A., Coates, J., Kalamatianou, S., Kadiyala, S. (2018). Concepts and critical

Petrescu DC, Vermeir I, Petrescu-Mag RM. Consumer Understanding of Food Quality, Healthiness, and Environmental Impact: A Cross-National Perspective. Int J Environ Res Public Health. 2019 Dec 25;17(1):169.

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AUTHORS

Marie Claire Custodio, Senior Associate Scientist-I, IRRI Philippines
Arindam Samaddar, Senior Manager, IRRI, India
Jhoanne Ynion, Associate Scientist, IRRI, Philippines,
Deep Banerjee, Researcher, ISARC, India
Suva Mohanty, Institute of Rural Management, Anand
Jigar Patel, Institute of Rural Management, Anand
Prakashan Chellattan Veettil, Senior Scientist, IRRI, India

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To learn more, please contact: **pc.veettil@irri.org**

To learn more about TAFSSA, please contact: t.krupnik@cgiar.org; p.menon@cgiar.org

ABOUT TAFSSA

TAFSSA is a CGIAR regional integrated initiative to support actions that improve equitable access to sustainable healthy diets, improve farmers' livelihoods and resilience, and conserve land, air and water resources in South Asia.

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