

Segmenting Nutritional Behaviors

A Technical Brief

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PMI

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FOR SOCIAL & BEHAVIOR CHANGE



1. Context

In Mozambique, the issue of malnutrition is more severe than in most other countries. Low exclusive breastfeeding rates and poor-quality diets, among other causes, result in 37.5% of children being chronically malnourished or stunted.

Women's diets are nutritionally inadequate. The findings from a study to develop the Minimum Dietary Diversity for Women (MDD-W) indicator in Mozambique found inadequate intake of most nutrients especially those for which animal-source foods are the best sources. Diets of lactating women were particularly deficient relative to their micronutrient needs.

Various systemic and socio-cultural factors contribute to women's low dietary diversity, including access to affordable food. Many Mozambicans simply do not have enough money to buy foods that offer a diverse diet of vitamins and nutrients for themselves and their families. Agriculture is the main livelihood source for 80% of households, yet there are limited opportunities for selling produce. Most land is used for subsistence farming with maize, pulses, cassava, groundnuts, rice, and sorghum accounting for 85% of total farmland use. On average 90% of food consumed by rural households is from their own production.

A quarter of the population in Mozambique experiences food insecurity with agricultural production often in flux due to seasonality and various natural disasters. Seasonality is a large contributor to food shortages; Mozambique has dry seasons, where limited rainfall makes it difficult to produce crops at a rate that meets demand. Additionally, limited access to markets further impedes access to diverse, nutrient-rich foods. More than half of farmers in Nampula live more than a 30-minute walk from the nearest market and 76% live more than 2 kilometers from any road.

In addition to these systemic factors, various norms, beliefs, and practices present barriers to achieving a diverse diet that includes the necessary vitamins and nutrients to keep the mother and child healthy. Factors such as social norms (which, for example, dictate foods that should or should not be eaten during pregnancy or lactation), attitudes, beliefs and gender dynamics influence food allocation, health seeking, and task sharing. These factors play a role in the dietary diversity of women and their children and affect their ability to obtain, prepare, and eat sufficient nutrient-rich foods in meals and snacks throughout the day.

To deepen understand factors **influencing diet diversity among pregnant women and women with children under two years of age**, Breakthrough ACTION conducted a psychosocial segmentation analysis using latent class techniques. Using quantitative survey data from a random multi-cluster sampling in Nampula, Mozambique (2020), the project conducted secondary research to understand the drivers of nutritional behaviors based on attitudes and beliefs. That analysis identified the key variables to include in the segmentation analysis, including social connectedness, household decision-making around food, anxiety about food, barriers limiting diversification of diet and social consequences. These factors enabled

the project to conduct a latent-class analysis that uncovered four sub-groups of women with specific attitudes, needs, and behaviors. The segments vary significantly regarding social connectedness, household decision-making and barriers to foods.

The four segments that emerged from the data analysis, highlight key differences in each group based on their attitudes and perception of norms around nutrition and food in general. Specific characteristics of each segment are described in Table 1 below.

<p>Laid-back Independent [LI]</p> <p><i>Confident, connected and autonomous women who can make better decisions regarding their dietary diversity</i></p>	<p>Busy-conscientious [BC]</p> <p><i>Busy women who have some decision-making power about their diet but are juggling many things</i></p>	<p>Satisfied Traditionalists [ST]</p> <p><i>Have little decision-making power about what food they grow, buy or eat and do not recognize need for better dietary diversity</i></p>	<p>Isolated Critics [IC]</p> <p><i>Somewhat isolated women who lack access to diverse food and decision making about what they grow, buy, or eat</i></p>
<ul style="list-style-type: none"> • Highly connected to members of her community • Makes the decisions over nutrition at home • Rarely feels anxious about food • Is limited by distance to the market 	<ul style="list-style-type: none"> • Can feel isolated, meets people through her daily activities • Decides with her husband over nutrition at home • Sometimes feels anxious about food • Is characterized by her busy-ness and limited by time 	<ul style="list-style-type: none"> • Is connected to her small community • Does not make decisions over nutrition at home but would like to be more involved • Sometimes or rarely worries about food • Her agency limits her dietary diversity 	<ul style="list-style-type: none"> • Is characterized by the fact that she is often isolated • Can decide with her husband over nutrition at home. Values third parties' opinion in these decisions • Often feels anxious about food • Is limited by distance to the market

Table 1: Nutritional Behavior Segment Characteristics

Following the quantitative analysis, Breakthrough ACTION developed the Nutritional Behavior Segment Identification Tool in Section 3 of this document to identify the segment a given woman belongs to, transforming the segmentation analysis from descriptive research to a tool with practical utility. A preliminary version of the Segment Identification Tool was used in Mozambique to identify women from each segment for participation in focus groups.

In July 2022, Breakthrough ACTION conducted eight focus group discussions in the Rapales and Mogovolas districts of Mozambique (two per segment), in which 64 participating women shared their thoughts on local context and cultural norms and on the key drivers identified in the quantitative analysis (social connectedness, perceived barriers to dietary diversity, anxiety/food security). The findings from these focus groups enriched and supplemented the profiles derived through quantitative analysis. They also enabled a deeper understanding of the structural and environmental factors influencing nutrition behavior that was not reflected by variables in the survey datasets.

After incorporating feedback from the focus groups to the segment profiles, in July 2023, the project held an internal virtual workshop to test the segment profiles and brainstorm interventions with representatives from USAID.

2. Objective of the Segment Identification Tool

The Segment Identification Tool aims to enable health workers and social and behavioral change (SBC) practitioners to better support women improve their dietary diversity. This tool will enable practitioners to optimize approaches through a better understanding of drivers of women's nutritional behavior and to adopt targeted actions towards specific sets of women.

Once practitioners identify the segment of a given woman, the profile descriptions can be used to get a clearer sense of the factors driving her nutritional behavior and craft tailored behavior change interventions that tackle critical components of dietary diversity performance.

This tool can be used within existing nutritional interventions, as deemed most useful in any given country context. When deciding when to use this tool, it is helpful consider what ongoing dietary diversity approaches are used in a particular setting, and where additional action may still be helpful.

3. Nutritional Behavior Segment Identification Tool

Nutritional Behavior Segment Identification Tool
<p>Overview</p> <p>Read this section thoroughly <i>before</i> utilizing the Segment Identification Tool. This Segment Identification Tool can support SBC and implementers in identifying the segment of women to design and implement more tailored interventions targeting nutritional behaviors.</p>
<p>Methodology</p> <p>The questions in the tool came from the random multi-cluster survey datasets as the best questions to explain and indicate what segment each woman belongs to. The selection was conducted using a Chi-squared Automatic Interaction Detector analysis in SPSS Statistics (IBM, Armonk, NY).</p>
<p>Tool Instructions</p> <ol style="list-style-type: none"> 1. Explain the purpose before beginning the interview: “Today, I will ask you a series of questions to help me understand the attitudes, behaviors and beliefs around nutrition of women during pregnancy and after they give birth. After I ask each question, I will state the acceptable answer choices. Choose the answer that best matches your experience and perception. I make no assumptions or judgments and want to hear from you on the following matters. There is no right or wrong answer.” 2. Ask the four screening questions (questions i to iv of the Screening Questionnaire below) to determine whether the woman is eligible for intervention. If you get through all four questions without having to stop (as indicated in the fourth column), then the woman is eligible and you may continue to questions Q1 – Q6. 3. Review the Segment Identification Tool Questionnaire on the next page. 4. After asking each question, state the acceptable answer choices for the interviewee (for example: “Yes, Unsure, or No”). Record the first answer given by the respondent. 5. In brackets next to each answer choice is <i>either</i> an instruction to circle an acronym representing the determined segment (For example: “[LI]”) <i>or</i> a directive to proceed to another question (indicated in brackets). 6. Once you go through all the segmentation questions following the instructions in brackets, end the interview, and thank the interviewee for their time and answers. Tally the number of times each acronym was circled. 7. Record the woman’s segment in the file for future intervention and the number tallied (1 or 2).

Table 2. Nutritional Behavior Segment Identification Tool Instructions

Screening questionnaire			
N°	Question	Response options	Stop if
i	How old are you?	15 – 49 years	<ul style="list-style-type: none"> • Less than 15 • More than 49 <p>Say: Thank you so much for taking time to answer these questions. We're looking for other types of people for this study. Thank you for your time!</p>
ii	Are you currently pregnant?	<ul style="list-style-type: none"> • Yes • No 	<p>If answered "No" to both questions 2 and 3</p> <p>Say: Thank you so much for taking time to answer these questions. We're looking for other types of people for this study. Thank you for your time!</p>
iii	Have you given birth to a child in the last 24 months, who you are still caring for today?	<ul style="list-style-type: none"> • Yes • No 	

Table 3. Nutritional Behavior Screening Questionnaire

Segment Identification Tool Questionnaire					
N°	Question	Scorecard			
Q1.	<p>When a woman is pregnant, what foods should she try to eat if she wants to stay healthy? (Record first answer they give)</p> <ol style="list-style-type: none"> 1. Corn, wheat or starch [Proceed to Q2] 2. Fruits (not rich in Vitamin A) [Proceed to Q2] 3. Fruits rich in Vitamin A [Circle LI and proceed to Q3] 4. Meat (including organ meat) [Circle LI and proceed to Q3] 5. Local insects/animals [Circle BC and proceed to Q5] 6. Eggs [Circle BC and proceed to Q5] 7. Vegetables, dark green leaves or white roots [Ask "What else?", and record new answer] 8. Other [Circle BC and proceed to Q5] 	LI	BC	ST	IC
Q2.	<p>Most of the time, who decides what to eat every day? (if "Other", choose who would be likely to make the decision between these 4)</p> <ol style="list-style-type: none"> 1. My husband/partner [Circle ST and proceed to Q6] 2. Me [Circle IC and proceed to Q7] 3. Me and my husband/partner [Circle IC and proceed to Q7] 4. My mother/my mother-in-law [Circle IC and proceed to Q7] 	LI	BC	ST	IC

<p>Q3. <i>Would you regularly eat more while pregnant?</i></p> <p>1) I already regularly eat more when I am pregnant [<i>Circle LI and proceed to Q5</i>]</p> <p>2) I would do it more if there were no social consequences [<i>End interview</i>]</p> <p>3) No, I would not do that [<i>End interview</i>]</p>	LI	BC	ST	IC
<p>Q4. <i>Do you regularly (at least once a week) participate in activities with people outside your household for entertainment or fun (watching soap operas together, playing, chatting where they sell alcohol, dancing)?</i></p> <p>5. Yes. [<i>Circle LI and proceed to Q5</i>]</p> <p>6. No (I spend most of my time with my husband/children) [<i>Proceed to Q5</i>]</p>	LI	BC	ST	IC
<p>Q5. <i>Besides cost, what prevents you from eating the foods you want to eat?</i></p> <p>1. I am too busy/do not have time [<i>Circle BC and end interview</i>]</p> <p>2. Other reason (for example: not available close to me) [<i>End interview</i>]</p>	LI	BC	ST	IC
<p>Q6. <i>Most of the time, who in your household makes decisions on what you should eat while you're pregnant or nursing?</i></p> <p>1. My husband/partner [<i>Circle LI and end interview</i>]</p> <p>2. Me [<i>End interview</i>]</p> <p>3. Me and my husband/partner [<i>End interview</i>]</p> <p>4. My mother/my mother-in-law [<i>Circle ST and end interview</i>]</p> <p>5. Someone else [<i>Circle ST and end interview</i>]</p>	LI	BC	ST	IC
<p>Q7. <i>In the past two weeks, how many times did you feel isolated or alone (lonely)?</i></p> <p>1. Never [<i>End interview</i>]</p> <p>2. Sometimes (1-7 days) [<i>End interview</i>]</p> <p>3. Often (8-11 days) [<i>Circle IC and end interview</i>]</p> <p>4. Every of almost every day [<i>Circle IC and end interview</i>]</p>	LI	BC	ST	IC
<p>Tally up the number of times each letter was circled. The letter with the highest number is the client's segment.</p>	LI	BC	ST	IC
<p>Segment Codes:</p> <ul style="list-style-type: none"> • LI: Laid-back Independents • BC: Busy Conscientious • ST: Satisfied Traditionalists • IC: Isolated Critics 	-	-	-	-

Table 4. Nutritional Behavior Segment Identification Tool Questionnaire