



Behind the plate: revealing the drivers of women's food choices in Senegal

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ABSTRACT

Women's eating practices in Senegal are shaped by intersecting economic, cultural, and environmental factors that contribute to the growing burden of diet-related non-communicable diseases. This study examines key determinants of food choices among women across income levels and urban–rural settings, using a mixed-methods design based on the 2021 National Survey on Food Consumption in Senegal conducted by Consortium pour la Recherche Economique et Sociale. The quantitative analysis included 1764 women, while the qualitative component comprised 31 focus group discussions and 6 in-depth interviews. Quantitative findings indicate that freshness, hygiene, and price are primary purchase criteria, with freshness cited by 88 % of women in the richest quintile versus 60 % in the poorest ($\chi^2 = 92.59$, $p < 0.001$; Cramér's $V = 0.227$), showing a moderate effect of income. Hygiene followed a similar trend (Cramér's $V = 0.156$), whereas price was universally cited (Cramér's $V = 0.03$). Women in lower-income households favour affordable, energy-dense foods, while wealthier women prioritise taste, convenience, and packaging. Qualitative analyses further reveal gender roles, cultural and religious taboos, and advertising shape choices, creating implicit pressure to prepare flavourful meals despite health risks. Media exposure enhances the appeal of ultra-processed products as symbols of modernity. Urban–rural disparities in food availability influence dietary diversity and nutritional outcomes. These findings underscore the complexity of food decision-making and highlight the need for culturally grounded, context-sensitive interventions that promote nutritional awareness and healthier diets tailored to socioeconomic realities and women's central role in household food provisioning.

1. Introduction

Non-communicable diseases (NCDs) are the primary drivers of preventable death and disability worldwide, accounting for approximately 75 % of all annual deaths, with approximately 43 million lives lost each year (World Health Organization, 2022). Unhealthy diets are among the principal risk factors, contributing to conditions, such as type 2 diabetes, cardiovascular disease, and certain cancers (Al-Jawaldeh & Abbass, 2022; Habib & Saha, 2010; Monteiro & Rezende, 2024). These diets, often high in saturated fats, sugars, and salt, and low in fruits and vegetables, lead to adverse nutritional and health outcomes. Therefore, tackling NCDs requires healthier eating practices informed by a contextual understanding of the multiple factors that influence food choices. However, food choices are shaped by various determinants, such as dietary habits, access to healthy foods, and religion, which influence eating habits differently depending on the context (Cuevas et al., 2021). A better understanding of these drivers is crucial to design

context-specific socioeconomic and cultural strategies aimed at improving diets, nutrition, health outcomes, and well-being.

Several theoretical frameworks have been developed to analyse and explain food-choice behaviours. Some models focus on specific determinant categories, such as eating intentions (Rozin, 1999), perceptions of health and risk (Ajzen, 1991) or the role of pleasure and sensory dimensions (Rosenstock, 2015). Others adopt a broader perspective, such as the Social Ecological Model (Bronfenbrenner, 1994) which highlights multiple levels of influence, individual, social, and environmental. But this model remains primarily descriptive, offering limited guidance for analysing the dynamic processes through which structural influences are internalised, negotiated, or resisted. The Food Choice Process Model (FCPM) fills this gap by highlighting how individuals negotiate food choices in everyday life, drawing on personal meanings, constraints, routines, and life-course trajectories (Furst et al., 1996; Sobal & Bisogni, 2009). This model confers also significant analytical advantages by facilitating a more granular examination of individual decision-making

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processes, achieving this by foregrounding the personal food system, incorporating lived experiences, and emphasising the subjective appraisal of available alternatives. Finally, it provides a richer basis for examining gendered dimensions of food practices, as it captures how responsibilities, expectations, and identity-related meanings shape women's and men's decisions in context.

Building on these theoretical insights, numerous empirical studies have shown that various factors influence food behaviours (Karanja et al., 2022). Environmental drivers, such as ease of access to food, marketing strategies, and cost, substantially influence individuals' dietary decisions (Farris et al., 2020; Magano et al., 2023; Okoro et al., 2017; Stokes-Walters et al., 2021; Thakwalakwa et al., 2020). Additional determinants include sociodemographic characteristics, such as age, education, and income (Cabral et al., 2019; Furst et al., 1996); dietary limitations, including allergies and religious restrictions; chronic conditions, such as hypertension and diabetes (Sicilia et al., 2023; Sobal & Bisogni, 2009); and other contextual elements, such as cultural norms, food availability, time constraints, and convenience (Gama et al., 2018; Raaijmakers et al., 2018). Most studies on developing countries rarely differentiate between urban and rural areas regarding food choices. However, cities usually offer a wider range of food options than rural areas, which can lead to differences in eating habits (Karanja et al., 2022). Urban populations are increasingly exposed to external dietary influences, particularly through globalisation, which accelerates the penetration of energy-dense foods high in salt, sugar, and saturated fats into the diets of low- and middle-income countries (Westbury et al., 2023). However, rural diets tend to be lower in processed foods, although they sometimes lack diversity; undernutrition and micronutrient deficiencies remain concerns (Kolliessuah et al., 2023). Beyond geography, another under-explored dimension of food behaviours concerns women. Njuki et al. (2022) pointed out substantial gaps in the evidence base concerning gender dynamics within food systems, particularly in relation to women in urban settings and indigenous food environments. Food-related decisions made by women shape their own nutrition and health and directly influences those of other household members. Women function as household gatekeepers, regulating the channels through which food circulates before reaching the family table, thereby influencing the broader social organisation of food (Poulain, 2013).

Despite extensive literature on the determinants of food behaviour in high-income contexts (Fernqvist et al., 2024; Harbers et al., 2021; Perez-Cueto, 2019), highlighting the influence of individual preferences, social and cultural factors, economic constraints, and the local food environment, evidence from low and middle-income countries, particularly in Sub-Saharan Africa, remains limited. However, the relative importance of food behaviour drivers can substantially vary depending on the context (McMullin et al., 2019). Most studies have centred on Eastern and Southern Africa (Karanja et al., 2022), leaving West Africa comparatively understudied. However, this region faces heightened vulnerability to NCDs, compounded by structural barriers to healthcare and nutrition (Bigna & Noubiap, 2019). Life expectancy in the region is estimated at 64.5 years, which is below the global average of 73.3 years (Commission économique pour l'Afrique, 2024). Among West African countries, Senegal urgently requires context-specific insights into nutritional behaviours. The country is experiencing a notable increase in NCDs, which accounted for 45 % of all deaths in 2019 (World Health Organization, 2022) compared with 42 % in 2016 (World Health Organization, 2018). Special attention should be given to women, as they are disproportionately exposed to risk factors for NCDs. Evidence from the 2015 and 2024 STEPS surveys conducted by the Senegalese National Agency of Statistics (Agence Nationale de la Statistique et de la Démographie [ANSD] & Ministère de l'Économie, 2016; Ministère de la Santé & Agence nationale de la statistique et de la démographie, 2024) reveal a progression of overweight and obesity, as well as persistent gender disparities. Based on the findings of these surveys, between 2016 and 2024 adult overweight prevalence increased from 23.6 % to 31.2 %

in women and 16.1 %–21.4 % in men, whereas obesity increased from 13.5 % to 17.6 % in women and 4.1 %–6.2 % in men. Among adolescents, the gap remains substantial, with 12.9 % of girls being overweight compared with 5.3 % of boys. These data highlight the increasing burden of NCD risk factors and the pressing need for gender-sensitive approaches to nutrition and NCD prevention. Designing these interventions require evidence on the factors influencing food choices.

Some research has begun to address the issue in Senegal. Holdsworth et al. (2006) examined the dietary determinants of NCDs among urban women, and more recently, Owolodun et al. (2025) documented dimensions of the nutritional transition in rural areas across four border regions in southern, eastern, and northern Senegal. Although these studies provide valuable insights into dietary behaviours, they tend to focus exclusively on either rural or urban contexts, without integrating both settings or drawing on nationally representative samples. This limited scope fails to capture the nuanced reality that nutritional transitions unfold unevenly across diverse environments. There is a pressing need to deepen our understanding of dietary choice drivers among Senegalese women, particularly across both rural and urban settings. An analytical framework such as the FCPM can provide a fine-grained account of decision-making, and examine the gendered dynamics of food practices, which are essential for understanding women's nutritional behaviours in Senegal. Building on this framework, the present study aims to outline how socioeconomic, environmental, and sociocultural factors influence women's food choices in Senegal, and how these choices interact with women's roles in household food decision-making and NCD-related behaviours in rural and urban contexts.

Specifically, this mixed-method study: (1) explores the drivers of women's food choices in Senegal, (2) investigates how food environments in rural and urban settings shape dietary practices, and (3) defines women's central role in household nutrition and decision-making.

2. Methods

The applied mixed-methods design involved quantitative and qualitative data collected concurrently from distinct participant groups, more specifically, a nationally representative household survey for the quantitative component and community members and key informants for the qualitative component. Ethical approval for the qualitative and quantitative surveys was granted by the Senegalese National Health Research Ethics Committee (CNER) on May 7, 2020 (reference number 00083/MSAS/DPRS/CNER). All participants were verbally informed about the study objectives, procedures, voluntary participation, and their right to withdraw at any time. Verbal consent was obtained from all participants and documented by the research team. Interviews and discussions were conducted in the local language (Wolof) spoken by participants to ensure good comprehension. Participants' privacy and confidentiality were strictly maintained, with all identifying information anonymised. Data were securely stored, accessible only to the research team, and are available upon reasonable request. Detailed consent procedures and additional methodological materials are provided in the supplementary appendices.

Each dataset was analysed separately and later interpreted in tandem to enrich contextual understanding. The data stem from the National Survey on Food Consumption in Senegal, conducted in 2021 by the Consortium pour la recherche économique et sociale (CRES). The survey comprised both quantitative and qualitative components. The qualitative component explored the economic and sociocultural factors shaping dietary practices among Senegalese populations, while the quantitative component gathered information on dietary behaviours, anthropometric indicators, household food provisioning methods, and determinants of food choices. Drawing on the study objectives, the following hypotheses will be examined using these collected qualitative and quantitative data: (1) the relative influence of environmental and individual-level factors on women's food choices significantly differs across socioeconomic groups in Senegal; (2) sociocultural, structural,

and contextual determinants affect women's dietary practices differently in urban and rural settings; (3) women's food decision-making roles interact with broader constraints, such as income, physical availability, and advertising, to shape household nutrition and NCD-related behaviours.

2.1. Consideration of sex and gender in study design

This mixed-method study examines the drivers of women's food choices in Senegal through a gender-sensitive lens. The quantitative component focuses exclusively on female respondents, enabling the statistical exploration of food choice patterns among women who are widely recognised as primary decision-makers in household nutrition within the Senegalese context, particularly regarding food procurement, meal preparation, and dietary practices, as highlighted by [Tine et al. \(2018\)](#) in the southern regions of Kolda and Kédougou, and by [O'Brien et al. \(2022\)](#), in the context of a food processing value chain project in the city of Touba, located in a central cultural region. Both demonstrated that women's engagement in food production and processing strengthens their decision-making role and influence on family nutrition. This targeted approach ensures analytical coherence with the study's broader aim of investigating gendered dynamics in food decision-making, a perspective also emphasised in recent research highlighting women's central role in shaping dietary practices across diverse contexts ([Das & Mishra, 2021](#); [Pienaaah et al., 2025](#)). In contrast, the qualitative component includes both male and female participants to capture the social discourses and normative frameworks that influence women's choices. By incorporating male perspectives, the study contextualises how women's dietary decisions are supported, negotiated, or constrained by other household members, particularly in settings where gender roles are deeply embedded. This dual design strengthens the empirical depth of the research, offering both precision in quantifying behaviours and richness in interpreting their sociocultural underpinnings.

2.2. Qualitative data

2.2.1. Interview guides

The qualitative data collection relied on a combination of semi-structured interviews with key informants, including health authorities and nutrition stakeholders, alongside focus group discussions (FGDs) held within local communities ([Harrell & Bradley, 2009](#)). Both FGDs and individual interviews were designed to explore dietary attitudes and perceptions. A facilitation guide structured the FGDs, while a semi-structured interview guide was adapted for key informants and older participants unable to attend group sessions (see [Appendix A](#)). The guides addressed themes aligned with the study objectives, including perceptions of food, seasonal variation in meal composition, commonly consumed local dishes, attitudes toward specific consumables, such as salt, sugar, fats and industrial foods, drivers of food choices, food-related prohibitions, and the evolving nature of dietary habits. Each topic was addressed through open-ended questions and targeted probes to elicit rich, nuanced responses.

2.2.2. Selection of localities

Participants were recruited from both urban and rural areas across Senegal, following the guiding hypothesis that food practices are deeply embedded in cultural systems. A purposive multistage sampling strategy was implemented in two phases. First, culturally rich areas, referred to as cultural zones, were identified as entry points, based on their distinctive historical and sociological attributes that shape local food traditions and representations. The criteria used to define cultural zone are presented in [Table 1](#). They were defined based on grey literature on the Senegalese history and following discussions with specialists in Senegalese history. The division of the country into cultural zones is presented in [Supplementary Fig. 1](#). Second, these cultural zones were

Table 1

Cultural zones in Senegal: characteristics, typical dietary practices, and key references.

Zone	Cultural areas	Cultural characteristics	Typical dietary practices and dishes	Key references
North	Walo, Ndiambour, Fouta Toro	Peul and Toucouleur influence; Long-standing Islamisation; rigid social hierarchies; Rice cultivation along the Senegal River	Ceebu jën (rice, fish, oil, vegetables: cabbage, carrot, eggplant, and cassava); Ceebu yapp (rice and meat); Seasonal vegetables widely used; Lakh (millet porridge with milk and sugar); Thiéré (millet couscous) with cowpea-based sauce, meat or dried fish; High intake of fermented milk, fresh milk, and artisanal cheese	Ibrahima Thiaw (2010) Abderrahmane (2003)
Centre	Peanut Basin	Agricultural heartland dominated by peanut cultivation; Mainly Wolof and Sérère populations; Strong Mouride influence	Mafé (rice with thick peanut sauce + meat or fish); Soupou kandja (rice, okra, palm oil, peanut paste, dried fish); Sombi (sweet rice with milk); Lakh (millet or maize-based); Ceebu jën widely consumed	Bozena STOMAL-WEIGEL (1988) Ibrahima Thiaw (2010)
West	Dakar, Thiès (Urban Area)	Cosmopolitan and urbanised zone; Cultural diversity with external influences	High consumption of imported rice and bread (baguette); Ceebu jën; Yassa (rice, chicken, or fish marinated in lemon and onion); Domoda (rice with tomato-based sauce); Street foods: sandwiches, fataya (stuffed fritters), millet- or flour-based fritters; Widespread sweetened beverages and processed foods	Ibrahima Thiaw (2010) Grey literature

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Table 1 (continued)

Zone	Cultural areas	Cultural characteristics	Typical dietary practices and dishes	Key references
East	Boundou	Peul and Mandingue populations; Pastoral traditions with exchanges with Mali and Guinea	Thiééré bassi salté (millet couscous with meat, cowpea, or okra sauce); Millet or maize porridges with fermented milk; Higher consumption of meat (goat, sheep, and poultry) than fish; Mandingue influence: Mafé, cowpea-based sauces	Grey literature, Ibrahima Thiaw (2010)
South	Casamance (Diola), Socé, Fouladou	Rich agricultural region; Ethnic and religious diversity; Diola: rice cultivation, animist traditions; Socé: Mandingue influences; Fouladou: strong pastoral culture	Diola: local rice with vegetables, smoked fish or meat; leaf-based sauces (kandja, cassava leaves); palm wine consumption; Socé: Mandingue dishes, such as Mafé, Soupou kandja; use of fonio (local cereal); Fouladou: millet- and milk-based diet (Lakh, couscous); livestock meat (sheep, cattle, poultry)	Ibrahima Thiaw (2010) , Grey literature

cross-referenced with administrative divisions to determine specific localities to be surveyed ([Palinkas et al., 2015](#)), enabling alignment between sociocultural relevance and logistical feasibility. This culturally informed sampling method ensured national coverage and allowed for the exploration of symbolic and contextual meanings assigned to food across diverse regions. Based on this framework, five major cultural zones (south, west, centre, east, and north) were delineated, each encompassing multiple administrative regions ([Supplementary Fig. 1](#)). Following the identification of culturally significant zones, one urban and one or two rural localities were selected from each surveyed region, except for Dakar, which includes no rural territory ([Supplementary Table E1](#)). Localities were chosen based on their representativeness within the designated cultural zone, using the guiding question: Does this site meaningfully reflect the sociocultural dynamics of the zone? When multiple sites qualified, physical accessibility became the determining factor. Finally, selected localities per region were: Dakar (Scat Urbam and Parcelles Assainies, urban); Thiès (Thiès, urban; Fandène and Mérina Dakhar, rural); Diourbel (Diourbel, urban; Lagnar, rural); Louga (Louga, urban; Niomré, rural); Saint-Louis (Saint-Louis, urban; Dama, rural); Matam (Matam, urban; Boynadié, rural); Tambacounda (Tambacounda, urban; Missirah and Malem Niani, rural); Ziguinchor (Ziguinchor, urban; Cajinolle, rural); Kédougou (Kédougou, urban; Bembou, rural); Kaolack (Kaolack, urban; Kahone, rural); Fatick (Fatick, urban; Niakhar, rural); Kolda (Kolda, urban; Saré-Bidji and

Vélingara-Saré Coly, rural); Kaffrine (Kaffrine, urban; Birkelane, rural); and Sédhiou (Sédhiou, urban; Goudomp, rural).

2.2.3. Selection of participants for the focus groups and semi-structured interviews

Once the survey localities were identified, community leaders, including neighbourhood chiefs and *Badiénu Gox* (female leaders supporting health and social initiatives), were consulted to select participants for FGDs ([Kroese et al., 2021](#)). Eligibility criteria were established using demographic dimensions: aged 15 or over, participants were grouped by age category (mothers or tutors of children aged between 0 and 5 years; youth: 15–25 years; adults: 26–59 years; seniors: 60 years and above), gender (men, women, adolescent boys, and adolescent girls), and residential settings (urban or rural), reflecting guidance for culturally sensitive grouping that promotes open dialogue and reduces discomfort associated with gender and age mixing ([Knodel, 1995](#); [Sim, 1998](#); [Greenwood et al., 2014](#)). Within each locality, individuals were sampled from multiple neighbourhoods to capture broader intra-locality variability. Each FGD consisted of 8–10 participants, a size conducive to dynamic yet manageable discussions ([Hennink, 2007](#)).

2.2.4. Conducting interviews

All focus groups and individual semi-structured interviews were conducted by 10 sociological researchers with at least five years' experience in conducting surveys. After receiving specific training in the administration of interview guides, they were deployed in groups of two across the different cultural areas. Each session was led by one researcher and the second responsible solely for notetaking. This setup ensured a clear division of roles: the facilitator focused on guiding the discussion, while the observer documented notes. FGD sessions lasted between 60 and 90 min ([Hennink et al., 2017](#)) in familiar and neutral community venues to encourage participants to speak freely and authentically ([Ochieng, 2010](#)). Detailed information on the number of FGDs, participant characteristics, and session durations across the five cultural zones are provided in [Table 2](#).

Semi-structured interviews with key informants lasted approximately 1 h. [Table 3](#) summarises the characteristics of the semi-structured interviews conducted across different cultural zones.

Research teams conducted and guided conversations in the areas allocated to them, using the thematic guide and adjusting prompts to fit the gender, age, and local context of each focus group or key informant. Audio recordings of all FGDs and semi-structured interviews were conducted with the explicit prior consent of participants, who were fully informed of the purpose and use of the recordings. Audio recordings of each session were supplemented by detailed field notes to capture the broader social dynamics in play. All interviews conducted in Wolof were first transcribed into French by the interviewers. The French transcripts were subsequently translated into English by authors. To ensure that the meaning and nuances of the original Wolof responses were accurately preserved, a Gambian translator fluent in both Wolof and English

Table 2

Focus groups: duration, and participants' sociodemographic and regional distribution.

Information	West	East	North	South	Centre	Total
Number of focus group discussion	5	5	6	7	8	31
Average duration (min)	85	90	88	92	95	–
Duration range (min)	75–86	80–92	70–95	78–89	67–90	–
Total participants	40	43	50	60	65	258
Rural	16	26	24	34	32	132
Urban	24	17	26	26	33	126
Men	17	12	13	20	22	84
Women	23	31	37	40	43	174
Participants aged 15–25	16	9	16	25	16	82
Participants aged 26–59	16	24	25	26	32	123
Participants aged 60+	8	10	8	9	17	52

Table 3
Characteristics of individual semi-structured interviews by cultural zone.

Cultural zone	Duration (min)	Participant sex	Participant age	Participant status
West	58	Man	41	District medical officer
East	65	Woman	29	Head nurse
North	53	Woman	45	Regional food and nutrition supervisor
South	61	Man	32	Head nurse
Centre	68	Woman	37	District medical officer

performed a quality check of the English translations.

In each of the five cultural zones, an average of six focus groups were conducted, resulting in 31 FGDs (15 urban and 16 rural) with 8–10 participants per group. Additionally, six semi-structured interviews were completed with key informants. No attrition occurred once groups were convened. The decision to conduct six focus groups per cultural zone was intentional, balancing the need to capture local variability in dietary meanings and practices with the constraints of the study budget (Roller & Lavrakas, 2015). Thematic saturation, the point at which no new substantive themes emerge, typically occurs between four and eight focus groups in relatively homogeneous populations with focused objectives (Hennink et al., 2019; Hennink & Kaiser, 2022). In practice, saturation was reached at the fifth focus group in the west and east zones, sixth in the north, seventh in the south, and eighth in the Centre. These variations reflect both the empirical process of confirming saturation and adjustments within the budgetary limits. Saturation was continuously monitored throughout transcript analysis, ensuring that the decision to complete all groups was both methodologically sound and responsive to data emerging from early group sessions. Before each session began, participants were briefed on the study's objectives, the voluntary nature of participation, rights to confidentiality and anonymity, and their ability to withdraw at any time. The COREQ checklist is available in [Appendix B](#).

2.2.5. Interview transcription and data analysis

Audio recordings from interviews and FGDs were fully transcribed and systematically organised by target zones to map emerging patterns. Thematic analysis combined inductive and deductive logics (Braun & Clarke, 2019). The coding process followed established principles of qualitative content analysis, emphasising systematic categorisation and iterative refinement (Elo & Kyngäs, 2008). NVivo 12 software was used to structure the coding and facilitate the organisation of successive analytic stages. In a first stage, open coding was conducted to allow recurrent concepts to emerge directly from the data. In a second stage, these emergent codes were refined and organised into a coding framework, which also incorporated deductive elements informed by the study's objectives and relevant literature. Each theme was clearly defined, supported by illustrative textual excerpts, and linked to preliminary interpretive insights ([Appendix C](#)).

Coding reliability was ensured in two ways. First, researchers regularly compared their coding during calibration and consensus sessions. Whenever discrepancies arose, they were discussed as a team, prompting codebook revisions and methodological refinements. Data triangulation was achieved by crosschecking findings from focus groups and key informant interviews. Second, an independent socio-anthropologist, not involved in the coding, reviewed a sample of transcripts and the associated coding framework to assess consistency between the applied codes and intended definitions. Any discrepancies were discussed with the research team and adjustments were made where necessary.

This comprehensive analytical approach produced a multilevel framework integrating individual perceptions, household decision-making processes, and broader societal representations within the cultural and environmental contexts of Senegalese food practices.

2.3. Quantitative data

2.3.1. Study design and sample size calculation

Quantitative analysis was conducted using data related to food choice factors, collected through a nationally representative cross-sectional survey conducted in Senegal from August to October 2021, and coordinated by the CRES with the support of the Senegalese Ministry of Health and Social Action, National Council for Nutritional Development (CNDN), Laboratory for Analysis and Research on Human Nutrition (Cheikh Anta Diop University in Dakar), Food and Agriculture Organisation of the United Nations, and International Development Research Centre in Canada. The survey targeted dietary behaviours and nutritional intake among selected demographic groups using a robust and stratified sampling strategy.

The size of the sample was determined using the sampling method recommended by the INTAKE Initiative, which was designed for analysing nutrient intake in middle-income countries. INTAKE recommends a minimum sample size of 200 individuals per target and per level of analysis for a simple random sample (Tooze, 2020). This size is considered sufficient for estimating intakes of macronutrients (carbohydrates, proteins, and lipids) and key nutrients, such as vitamin C, vitamin B6, calcium, and iron. To ensure national representativeness while considering the cultural and nutritional specificities of the country, the population was stratified according to urban and rural areas. The target groups selected were children aged 2 to 5, adolescents aged 10 to 19, and adults aged 20 and over. Considering an estimated sampling effect of 2 and incorporating a non-response rate of 5 % (assumptions confirmed by pilot surveys conducted to test the sampling strategy), the minimum size per target and per stratum is increased to 420 individuals (i.e., $200 \times 2 \times 1.05$). To determine the number of households to be selected, the probabilities of including each target group in a household were calculated based on 2020 demographic projections from the 2013 General Census. The sampling was designed to give priority to the rarest category, children aged 2–5 years, which automatically ensures the presence of the other target groups, namely adolescents aged 10 to 19 and adults aged 20 and over. The calculations led to targeting a minimum of 1091 households in urban areas and 709 in rural areas, for a total of 1800 households nationwide, to achieve the minimum required size of 420 children aged 2 to 5 per stratum (see [Appendix D](#) for detailed methodology).

2.3.2. Participants

The sampling methodology was based on stratified random sampling according to strata (urban and rural areas), incorporating a multi-stage selection structure. At the first level, 150 census districts (CDs) were selected according to a plan of 12 households per CD. Each CD had between 200 and 250 households in urban areas, and between 120 and 150 in rural areas. The 150 CDs were distributed proportionally across regions, as well as urban and rural areas ([Appendix D](#)). A draw of CDs was conducted in each stratum with a probability proportional to size, defined as the number of households, to favour the inclusion of geographically more populated units. The framing data were officially provided by ANSD, which also conducted the CD draw. These data include the distribution of CDs and households by region and rural and urban areas, total populations, and numbers by target group (children aged 2 to 5, adolescents aged 10 to 19, and adults aged 20 and over), both nationally and within the selected CDs, which enabled the calculation of sampling weights of the CD, household, and individuals. At the second stage, in the absence of a household sampling frame, selection was based on the route method. In each CD, a sampling starting point (SSP) was set by the supervisor and validated by the survey coordination team. The first household surveyed was the fifth household in the direction from the SSP and each subsequent household was selected by skipping 10 households after the previous one. Three households were thus surveyed by an interviewer in each CD, ensuring that two households in the same concession were not surveyed. Finally, at the last level

of sampling, three age groups were targeted in each household: children aged 2–5 years, adolescents aged 10–19 years, and adults aged ≥ 20 years. A list of eligible individuals in the household was drawn up, and an automated random draw using the Kish table integrated into the interviewer's tablet was used to select one individual per target group. Notably, some households may not contain all the targeted categories (children or adolescents); data processing took this into account. A weighting of sampling units was applied in accordance with the calculation methodology detailed in [Appendix D](#). This statistical adjustment ensured the representativeness of the data collected by extrapolating the results observed among the individuals surveyed to the entire population in the same age group, as well as those of the households surveyed to all households in the country. This operation guarantees the validity of the inferences made from the sample by correcting for biases related to the sampling structure and inclusion probabilities.

Prior to data collection, written information letters signed by the Director of CRES were delivered to municipal authorities, including mayors and commune officials. A computer-assisted data collection (CAPI) application on an Android tablet was developed. This application automated skips, information transfers and filters, reducing errors and enabling daily remote quality monitoring.

Finally, 1800 households were successfully surveyed. Within these households, 1764 women responsible for food-related decisions were interviewed, forming the analytic sample used in this study. Survey weights were constructed at the census district, household, and individual levels to ensure national representativeness, and all analyses accounted for the stratified multistage design (urban/rural strata and census districts as primary sampling units).

2.3.3. Questionary

The survey was administered using a nationally standardised questionnaire structured into five thematic modules, each targeting a specific household respondent (head of household, selected individual, or food manager). Modules addressed: household characteristics (identification, demographics, housing conditions, expenditures, and income; module 1); individual characteristics by age group (children aged between 2 and 5 years, adolescents aged between 10 and 19 years, adults aged ≥ 20 years; module 2); and dietary intake, eating behaviours, physical activity, and health status; household dietary practices, primarily completed by female members responsible for food preparation and purchasing (module 3). Module 3 explored food-related habits and decision-making, through dimensions, such as meal frequency, iodised salt usage, impact of COVID-19, food sourcing, and drivers of food choice. These drivers were captured via a multiple-response format where respondents selected applicable factors from a predefined list (e. g., freshness, price, nutritional value, and taste). This targeted approach reflects national sociocultural dynamics, with over 98 % of households reporting women as the primary agents in food-related decisions. Consequently, the analysis of food-choice drivers was restricted to female respondents fulfilling these roles. The final modules focused on household food consumption and individual-level intake which were assessed through a 24-h dietary recall method, following the multiple-pass technique recommended to minimise underreporting and enhance data accuracy. For the household-level assessment (module 4), interviewers conducted a comprehensive inventory of all foods, beverages, and meals consumed during the 24 h preceding the interview, incorporating systematic probing to identify potential omissions. This module included detailed descriptions of dishes, covering ingredients, cooking methods, and approximate quantities, which facilitated the reconstruction of typical household recipes and supported nutritional composition analysis. The individual-level module (module 5) recorded only the food items consumed by a pre-selected household member, without detailing ingredient composition, to streamline the interview process. Portion sizes were estimated using empirically adapted visual tools (e.g., cups, modelling-clay replicas, and locally used utensils), calibrated via a survey of rural and urban restaurants to reflect culturally

relevant serving sizes. Anthropometric measurements (height, weight, and BMI) were also collected, allowing for direct linkage between reported dietary intake and nutritional status.

The final set of food-choice determinants was derived following a structured inductive-deductive process, designed to ensure both theoretical alignment and contextual relevance ([Table 4](#)). Initially, an international literature review identified a core list of well-established determinants (e.g. health, price, taste, convenience, and naturalness) as documented by foundational instruments, such as the Food Choice Questionnaire ([Cunha et al., 2018](#); [Step toe et al., 1995](#)). Based on this, a grey literature review specific to Senegal was conducted to capture locally salient socio-economic and cultural dimensions. Finally, validation and refinement were performed through consultations with national stakeholders, including the CNDN members, gender experts, and *Badienou Gox* who are female leaders appointed to support health and social initiatives at the neighbourhood level.

In the survey, respondents were asked: “I will cite the following factors, could you tell me whether each influences your household's food choices?” For each item, respondents could answer “yes” or “no,” and multiple selections were permitted. Prevalence estimates presented in the results were calculated as the proportion of respondents citing each factor over the total number of women in the analytic sample.

2.3.4. Preparation, implementation, and verification

Preparation involved recruiting and training 57 interviewers and 10 supervisors on the objectives, methodology, tools (questionnaire and CAPI), interview techniques and ethics. The training took place in two sessions and included role-playing, practical exercises on anthropometric measurements, and sessions in Wolof for better understanding. Sessions lasted an average of 1 h and 45 min. Responses were directly recorded in French on the tablet by each interviewer.

Two pilot surveys were conducted to test the tools and field strategy. Throughout the questionnaire development process, regular tests were conducted with a small group of households to ensure the relevance of the questions and verify that respondents clearly understood their meaning. During the training of interviewers and supervisors, additional tests were carried out with other households. The results of these tests led to necessary adjustments in the wording of questions, tools used to measure food quantities, procedures for collecting anthropometric data, and helped strengthen the internal consistency of the questionnaire modules. The survey involved 10 teams of investigators and supervisors, with a double-pass protocol in each household. A rigorous monitoring system was put in place via an Excel dashboard shared with all stakeholders. Quality control was carried out daily with progressive data cleansing to ensure consistency. This rigorous system, combining technology, training, and supervision, ensures the reliability of the results to

Table 4
Determinants of food choice included in the survey and their sources.

Factor	Source
Freshness	Grey literature, national stakeholders
Hygiene	Grey literature, national stakeholders
Food brand	Grey literature, national stakeholders
Price	(Cunha et al., 2018 ; Step toe et al., 1995)
Physical availability	Grey literature, national stakeholders
Good presentation/ packaging	Grey literature, national stakeholders
Aroma	(Cunha et al., 2018 ; Step toe et al., 1995)
Easy to cook	(Cunha et al., 2018 ; Step toe et al., 1995)
Advertising	Grey literature, national stakeholders
Nutritional value	(Ares & Gámbaro, 2008 ; Cunha et al., 2018 ; Step toe et al., 1995)
Taste	(Cunha et al., 2018 ; Step toe et al., 1995)
Income	Grey literature, national stakeholders
Preference of the household head	Grey literature, national stakeholders
Preference of household members	Grey literature, national stakeholders

guide the food and nutrition policies of the country. Missing data were minimised through real-time checks by data controllers during fieldwork, and corrections by interviewers and supervisors, ensuring a complete dataset for analysis.

2.3.5. Data analysis

All statistical analyses were conducted using Stata v16 (Stata Corp LLC, College Station, TX, USA). Although dietary intake data (24-h recalls) were collected as part of the overall survey, these data are not used in the current study. Instead, this analysis focused exclusively on the food-choice factors module and socio-economic characteristics of female respondents responsible for household food decisions. The primary focus of the analysis was to identify the drivers of food purchasing behaviour among women responsible for household food preparation. These drivers were assessed via a multiple-response questionnaire, allowing respondents to select from a predefined list of influencing factors (e.g., freshness, price, nutritional value, and taste). Participants were permitted to select multiple applicable factors. Descriptive statistics were computed to determine the overall frequency of each cited driver and compare patterns across income quintiles, defined as five equally sized groups of households ranked by income. All analyses incorporated survey weights and accounted for the stratified multistage design (urban/rural strata; census districts as primary sampling units) to ensure national representativeness. For inferential analysis, Pearson's chi-square tests were used to examine the association between each binary factor (cited or not cited), income group, and area of residence. The differences are significant if p -values < 0.05 . To assess the magnitude of these associations, Cramér's V was calculated for each driver, with corresponding χ^2 values and p -levels presented in [Supplementary Tables E.2 and E.3](#). Data validation and cleansing procedures were conducted prior to analysis and are detailed in [Appendix D](#), which includes information on coding protocols, error resolution processes, and consistency checks performed by the control team during and after fieldwork.

3. Results

The multifaceted determinants of food-related behaviours within the study population were examined. Findings are presented in three stages: (1) sociodemographic characteristics of participants; (2) core quantitative outcomes; and (3) qualitative insights derived from thematic analysis. The qualitative findings are organised around six factors identified through thematic analysis: economic constraints (prices and income), physical food availability, household member preferences, sensory appeal (taste and palatability), advertising exposure, and cultural or religious dietary restrictions.

3.1. Socio-demographic characteristics of participants

[Table 5](#) summarises the sociodemographic profiles of the 1764 female participants included in the quantitative survey. More than 87 % of household menu decision-makers are women and 98 % of those responsible for food purchases are also women, underscoring their central role in household food provisioning.

3.2. Quantitative results

The factors shaping Senegalese women's food choices were classified as either related to the food environment or individual preferences and are presented by household expenditure quintile and area of residence in [Supplementary Tables E2 and E.3](#). Differences across expenditure quintiles are first examined, followed by an exploration of how place of residence may reinforce or attenuate these patterns.

Among the environmental factors, freshness, hygiene, and price were the most frequently mentioned across all income levels. Freshness was cited by approximately 9 of 10 women in the highest-income quintile (88 %) and remained a concern for 8 of 10 in the third quintile and 6 of

Table 5

Socio-demographic characteristics of female participants.

Characteristic	Category	Frequency	%
Age group (years)	[14–18]	428	24 %
	[19–35]	709	40 %
	[36–60]	508	29 %
	Over 61	119	7 %
Highest level of education	None	812	46 %
	Quranic school/non-formal education	120	7 %
	Primary	292	17 %
	Intermediate	292	17 %
	Secondary	175	10 %
	Tertiary	58	3 %
	Technical and vocational education	15	1 %
Professional status	None	1236	70 %
	Self-employed	393	22 %
	Worked in the family business	43	2 %
	Employee	84	5 %
	Retired	8	0 %
Marital status	Married	1032	59 %
	Single	563	32 %
	Widow	136	8 %
	Divorced	33	2 %
Religion	Muslim	1674	95 %
	Christian	88	5 %
Residence	Rural	672	38 %
	Urban	1092	62 %
Ethnic group	Wolof	675	38 %
	Serer	275	16 %
	Pulaar	480	27 %
	Diola	88	5 %
	Mandingo	75	4 %
	Soninke	22	1 %
	Bambara	42	2 %
	Others	107	6 %

10 in the lowest quintile. The difference across quintiles was statistically significant ($\chi^2 = 92.59$, $p < 0.001$) with a moderate effect size (Cramér's $V = 0.227$), suggesting that income level influences the prioritisation of freshness. Hygiene followed a similar pattern, as cited by 72 % of women in the highest-income quintile, compared to 48 % of the lower-income quintile, showing a significant difference ($\chi^2 = 43.95$, $p < 0.001$) and indicating a moderate effect size (Cramér's $V = 0.156$). Price, while frequently mentioned (47–52 %), showed no significant variation across quintiles ($\chi^2 = 1.65$, $p > 0.05$, Cramér's $V = 0.03$), indicating that it is a universal concern, regardless of income. Other environmental factors, such as physical availability, packaging, nutritional value, ease of cooking, advertising, food brand and aroma were less frequently cited but showed statistically significant differences in some cases. Nutritional value, though less mentioned, by 17 % of women in the highest-income quintile and 8 % in the lower-income quintile ($\chi^2 = 21.40$, $p < 0.001$), had a small effect size (Cramér's $V = 0.109$), suggesting modestly greater health awareness among wealthier women. Physical availability was cited by 15 % of women in the highest-income quintile and 13 % in the lower-income quintile, with no significant difference ($\chi^2 = 6.05$, $p > 0.05$, Cramér's $V = 0.058$). Ease of cooking was more frequently cited by wealthier women (20 % in the highest-income quintile compared to 12–13 % in lower-income quintiles), with a significant difference ($\chi^2 = 14.39$, $p < 0.001$) and small size effect (Cramér's $V = 0.089$), possibly reflecting differences in time constraints or cooking preferences. Packaging was mentioned by 4 %–7 % of women, with no significant variation across quintiles ($\chi^2 = 5.84$, $p > 0.05$, Cramér's $V = 0.057$), but may still reflect aesthetic or perceived quality considerations. Food brand was cited by 15 % of women in the highest-income quintile, compared to just 2–3 % in the lowest, and showed both a significant difference and a moderate size effect ($\chi^2 = 78.24$, $p < 0.001$, Cramér's $V = 0.209$),

indicating disparities in brand sensitivity or purchasing power. Advertising and aroma, though mentioned by fewer than 5 % overall, varied significantly across quintiles ($\chi^2 = 23.16$ and 26.07 respectively, $p < 0.001$) but demonstrated small size effects (Cramér's $V = 0.113$ and 0.120 respectively), suggesting differences in exposure or responsiveness to marketing.

Among environmental factors, freshness and hygiene exhibit clear income gradients, whereas price remains a universal constraint. Wealthier women are more sensitive to nutritional value, convenience, and branding, reflecting greater financial flexibility and exposure to health-related information. In contrast, women in the lower-income quintiles rely primarily on price and basic food safety attributes, with limited room to prioritise nutritional value or convenience.

Based on these patterns, individual-level considerations also shape women's food choices. These factors interact with income gradients to influence decision-making across income groups. Taste is the most frequently cited, with significant variation across quintiles ($\chi^2 = 27.38$, $p < 0.001$, Cramér's $V = 0.123$). It was mentioned by 22 % of women in the highest-income quintile, compared to 11 % in the lower-income quintile. In contrast, income and preferences of household members showed mixed patterns. Income was more frequently cited by women in the lower-income quintile (12 %) than in the highest-income quintile (7 %), with a significant difference ($\chi^2 = 14.05$, $p < 0.001$) and small effect size (Cramér's $V = 0.088$), indicating the role of financial constraints in food choices. Preferences of the household head (Cramér's $V = 0.066$) and other household members (Cramér's $V = 0.050$) were infrequently cited, and showed no significant differences, suggesting limited influence of family members' preferences on individual food choice decisions.

Individual-level factors, such as taste influence women's food choices, but their expression is strongly influenced by economic capacity. Women with limited financial resources are constrained in their ability to prioritise taste, whereas wealthier women can weigh taste alongside other considerations, including income and household members' preferences. These patterns reflect those observed for environmental factors, illustrating how personal preferences and structural constraints jointly influence dietary decisions.

Subsequent to the examination of income patterns, we then assess additional role of place of residence in influencing women's food choices. Urban-rural differences reflect additional structural and contextual constraints that operate beyond household economic resources (Supplementary Table E2). Freshness was cited by 52 % of urban women compared to 26 % of rural women, showing a large and statistically significant difference ($\chi^2 = 74.88$, $p < 0.001$; Cramér's $V = 0.204$). Hygiene was also more frequently prioritised among urban women (40 %) compared to rural women (19 %), with a moderate effect ($\chi^2 = 43.55$, $p < 0.001$; Cramér's $V = 0.156$). Food brand was more commonly cited by urban women (4 %) compared to rural women (1 %) with a small-to-moderate effect ($\chi^2 = 13.93$, $p < 0.001$; Cramér's $V = 0.088$). Physical availability, good presentation/packaging, aroma, nutritional value, and taste all showed small but significant differences. These patterns indicate modestly greater concern in urban households. Preferences of household members were slightly higher among rural women (2.8 %) compared to urban women (2.2 %; $\chi^2 = 12.11$, $p = 0.001$; Cramér's $V = 0.082$), whereas preferences of the household head and income were similar across urban and rural area.

Urban women consistently prioritise freshness and hygiene more strongly than rural women, likely reflecting greater product variety, better infrastructure, and higher expectations of food standards. However, rural women face more substantial structural limitations, particularly with respect to availability and access, that hinder their capacity to act on these preferences. These findings highlight that place of residence shapes dietary decisions in ways that extend beyond household income, reinforcing the importance of contextual factors in food choice behaviour.

In summary, both environmental and individual factors shape

women's food choices, with their relative importance strongly influenced by household economic resources. Wealthier women can prioritise freshness, hygiene, taste, nutritional value, and branding; however, women in lower-income quintiles are constrained by price and income. An additional layer of influence stems from residential location, urban women more consistently foregrounding food quality and safety, while rural women are limited by structural constraints in physical availability and access. Quantitative data sets the stage for qualitative insights that reveal motivations and contextual influences of these observed patterns.

3.3. Qualitative results

Thirty-one focus groups were established (15 urban, 16 rural; 8 to 10 participants each; $N = 258$). Age diversity was ensured by grouping: 10 groups with participants over 60 years, 11 with youth aged between 15 and 25 years, and 10 with adults aged between 26 and 59 years of both sexes. Additionally, six semi-structured interviews were performed with key informants (e.g., doctors, health-post managers, and regional nutrition supervisors) in each locality, whose insights complemented community discussions. The analysis identified three primary factors shaping food choices among women, at the national level (Supplementary Table E4): prices and income, physical availability, and household members' preferences. Additionally, a secondary layer of influence, particularly salient in urban settings, included taste and palatability of food and advertising, while cultural and religious prohibitions appeared less influential. The following section provides a detailed examination of each category, emphasising its role in shaping women's dietary practices.

3.3.1. Prices and income

Food prices and purchasing power may be the two most important factors influencing food choices. Women living in poverty reported buying food with the intention of spending as little as possible. Limited financial resources restrict what they can purchase, leading to cheaper, less nutritious foods and a less diverse diet. To meet household needs, expensive ingredients are reduced or eliminated, with protein sources and fruit being the first to be sacrificed, while cereals remain the highest priority. Participants described trade-offs between budget and food quality, the rarity of meat consumption, and the central role of rice as a staple, with fruit consumption constrained by cost and seasonality.

"Food choices depend heavily on the availability of products on the market and budget available to purchase them. When financial resources are sufficient, people tend to choose higher quality foods in adequate quantities. However, when resources are limited, people reduce the number of ingredients or turn to less fresh products. Everyone aspires to a high-quality diet, but this comes at a significant cost." (Diourbel, focus group, woman, 32 years old)

"In Kahone, people don't eat much meat; the main butcher in the area sometimes takes several days to sell out." (Kahone, focus group, man, 28 years old)

"Meat is quite rare, except on special occasions." (Kaffrine, focus group, man, 62 years old)

"Everything is rice-based; it's the sauce that changes." (Fatick, focus group, woman, 29 years old)

"We'd love to eat more fruits, but we can't afford to. Our consumption of fruits depends essentially on the season and availability; it doesn't have to be expensive." (Fatick, focus group, woman, 44 years old)

In the groundnut basin of the central cultural zone of Senegal, economic constraints and local availability lead women to prioritise peanuts, which are widely cultivated in the region, often at the expense of dietary diversity. This pattern is particularly evident in Kaffrine, which is in the heart of the peanut basin. For example:

"Eighty per cent of meals are peanut-based. Mafé [rice and peanut paste sauce] is eaten one day in two, and Mbakhalou Saloum [rice and peanut flour] is often eaten one day in three." (Kaffrine, focus group, man, 36 years old)

Some women reported creating improvised recipes to cope with limited resources. This practice is particularly common in areas of acute poverty, such as in the North near Matam, where a dish called Diambar [fried rice with onions] was invented. As one participant explained:

"Because of the high cost of living, we've created a dish that requires few ingredients. With 1,500 CFA francs (2.6 US dollars) or 1,000 CFA francs (1.7 US dollar), you can prepare "Diambar" [fried rice with onions], a hearty dish that will keep you full until breakfast the next day." (Matam, focus group, woman, 24 years old)

Participants reported that wealthier households have greater access to ultra-processed products and supermarkets, which remain a luxury for rural areas. Statements, such as *"There are more and more supermarkets, but they are reserved for those who can afford them."* (Diourbel, focus group, man, 21 years old) and *"It is the wealthy who buy supermarkets products most often."* (Birkelane, focus group, woman, 27 years old) were made.

The consumption of fizzy drinks in Senegal perfectly illustrates this. People in towns and villages alike regret not having enough money to buy them. Fizzy drinks only appear on the menu for major events and celebrations or to welcome important guests.

Consumption of fizzy drinks further highlights income differences. Participants stated that fizzy drinks are generally consumed only during special occasions or when welcoming important guests, as most households cannot afford them on a regular basis. These were some of the statements made:

"We only drink water due to a lack of resources." (Goudomp, focus group, man, 28 years old)

"We drink tea because fizzy drinks are very expensive now." (Ziguinchor, focus group, woman, 54 years old)

"We'd like to drink soft drinks, but we can't afford them. We only drink them when we have guests or at parties." (Cajinolle, focus group, woman, 33 years old)

Price and purchasing power dominate food choices, influencing both purchases and meal composition. Economic hardship markedly narrow dietary possibilities. Women with limited resources reported prioritising inexpensive staples, such as rice and peanuts, improvising recipes to stretch budgets, and reducing or eliminating proteins, fruits, and other costly ingredients. In contrast, wealthier households can access supermarkets and processed products, highlighting stark disparities in dietary options.

3.3.2. Physical availability

Food choices are determined by accessibility to and availability of food supplies. Physical availability refers to the presence and accessibility of food items within a person's immediate food environment, including proximity to markets, shops, or other points of supply, as well as the diversity of products that can realistically be obtained. Most participants stated that physical availability drives their food choices.

"Purchasing power and the availability of food at the market are practically the main criteria for choice. Sometimes the head of the household is asked what he wants to eat, but once at the market, if certain products are missing, the plan is changed, and another dish is chosen instead." (Diourbel, focus group, woman, 65 years old)

Discussions reveal marked differences between urban and rural areas. Urban women have access to multiple food sources, such as communal markets, stalls, local shops, and supermarkets, offering a wide range of foods, including fruits, vegetables, fresh fish, and

processed products. In contrast, rural women often struggle to access markets because villages are isolated and supply points are far away. One participant said:

"Some villages are inaccessible, meaning people don't have access to markets to get supplies." (Tambacounda, focus group, woman, 53 years old)

Rural women primarily obtain food from household harvests (fields and granaries) and rely on weekly markets known locally as *Louma*, typically situated outside urban centres. However, these markets offer a much narrower selection of food products compared to urban marketplaces, which further limits access to dietary diversity. One participant said:

"We get our supplies mainly from the fields and the weekly markets. We are farmers, so we eat what we grow, and we get the rest from the weekly markets." (Niakhar, focus group, woman, 37 years old)

Although rural populations grow nutritious food, they often sell most of their harvest in urban centres, where purchasing power is higher, further reducing their own access to diverse foods. The head nurse at Niakhar said:

"I often tell parents not to sell the beans they produce, but to eat them with their children instead. But they don't listen; they sell most of what they produce and only eat a little themselves." (Niakhar, focus group, woman, 37 years old)

Overall, participants described physical availability as a decisive constraint influencing their daily food choices. Urban women benefit from multiple supply points and a wider range of products, which offers greater opportunities for dietary diversity, whereas rural women face limited market access and narrower food environments that restrict dietary diversity. These constraints compound economic hardship and shape nutritional outcomes.

3.3.3. Household member preferences

Family members play an essential role in food decision-making. The behaviour and discourse of children, youth, men, and older adults can influence women's perceptions of what foods are valued in the household, which influences their actual food choices for the family. In most localities visited during the survey, older adults advocated for a more traditional diet, expressing resistance to modern dishes perceived as unhealthy due to their high sugar, salt, and fat content. They consider traditional meals healthier because they avoid harmful ingredients, such as excess oil and stock cubes. For example:

"Before, we used to steam a lot, especially when making Laakhou Bissap or Niéleng [dishes made with broken millet and peanut flour]. The peanuts were steamed first, and we avoided oil as much as possible because the peanuts contained enough oil. Today's youth no longer know how to prepare these dishes." (Lagnar, focus group, man, 66 years old)

"Older people don't like spicy or hot meals, nor do they like fatty or salty meals in the evening." (Kaolack, focus group, woman, 23 years old)

"Older people are resistant and prefer Thiéré [millet couscous], even without sauce." (Fatick, focus group, woman, 19 years old).

By contrast, youth prefer "modern dishes" rich in fat, salt, or sugar and tend to reject traditional meals. A participant from Birkelane said:

"There used to be a dish called Niéleng that's now practically only seen in rural areas or as Laakhou Soow [millet porridge with curd] for lunch, which is also a rarity. But we don't dare present it to youth or children anymore because they won't eat it." (Birkelane, focus group, woman, 61 years old)

Youth preferences are influenced by their time spent in urban centres

and exposure to urban lifestyles, which promote the adoption of city eating habits. The head nurse at Niakhar said:

“The tastes of youth are like those of city dwellers (rice, sauces, bread, etc.). Throughout the year, they travel to Dakar, Kaolack, and the country’s other major urban centres in search of work. While there, they adopt habits that they then bring back here. Contact with others leads them to copy them. Here, you only see complete families during the winter months; the rest of the time, they’re scattered, they’re too nomadic. They go looking for work everywhere.” (Niakhar, focus group, woman, 37 years old)

Despite these generational differences, women, who manage both purchasing and cooking, act as mediators. They reconcile competing preferences while adapting to available products and household budgets. Even when household heads set directives, women often exercise implicit authority in deciding what is prepared.

“It’s mainly the women who go to the market who decide on the menu, because they know what’s available and what isn’t.” (Kaolack, focus group, man, 17 years old)

“The management of food choices is essentially the responsibility of the person in charge of cooking, often a housewife. The head of the household simply provides financial resources, while the cook is responsible for all practical decisions. Sometimes, even when specific instructions are given, such as avoiding the use of stock cubes, they are quietly ignored, revealing the implicit authority and decision-making power of the person who prepares the meals.” (Vélingara, focus group, woman, 49 years old)

However, 21 respondents stated that the head of household defines the menu and the woman selects the food items based on those instructions. The household head refers to the person recognised as the primary decision-maker for finances and overall household management, typically the father, husband, or eldest adult male.

“Decisions regarding menu choices are made by the head of the family, who gives instructions and expresses preferences which are then carried out. The person in charge of cooking simply prepares meals based on those directives.” (Fatick, focus group, woman, 25 years old)

Collectively, these narratives show that household food choices are influenced by marked generational divergences: older adults tend to favour traditional dishes, whereas youth express strong preferences for modern, energy-dense foods influenced by urban consumption norms. Despite these contrasting expectations, women retain their role as household food gatekeepers, mediating daily choices and reconciling divergent preferences while contending with financial and availability constraints.

3.3.4. Taste and palatability of food

The influence of taste on food choices was a frequent topic of discussion during the focus group sessions. Most participants stated that stock cubes and other flavour enhancers are widely used in meal preparation. Very few women manage to do without these products, which they regard as essential for making meals appetising. Some participants said:

“The advantage of stock cubes is their taste. When we use them in our cooking, people are happy and find the dishes delicious.” (Diourbel, focus group, woman, 30 years old)

“Consumption is excessive; some women use 4 or 5 stock cubes for 2 kg of rice.” (Diourbel, focus group, man, 61 years old)

“Overconsumption of stock cubes is a reality in our country. Women like stock cubes and think they give their dishes flavour. But men are dying and becoming impotent because of these products. Women are poisoning us.” (Bembou, focus group, man, 48 years old)

Some participants felt that women are generally more sensitive to sweet, salty, and fatty tastes. This influences their choice of food for the household, particularly about the use of fats when preparing family meals. This could explain why they are more likely to be affected by NCDs. Some statements made were:

“Most women think that if they don’t use a lot of oil, the food won’t taste good, but that’s a mistake. We’d be better off if we ate more couscous at night instead of fatty meals.” (Diourbel, focus group, man, 64 years old)

“It’s mainly older women who are affected by NCDs here. We have kidney disease, high blood pressure, and diabetes, but these conditions mainly affect women, especially older women. We need to work specifically with them and go to their homes to raise awareness.” (Niakhar, focus group, woman, 37 years old)

Furthermore, urban populations seem to pay more attention to the taste of food than rural populations do. The latter are more concerned about satiety than taste. One participant said:

“The major difference is that people in the city are more concerned about eating good-tasting food, whereas people in the countryside are primarily concerned with filling their bellies and ensuring that everyone can eat their fill. We prioritise quantity over quality because we can’t afford both.” (Diourbel, focus group, man, 42 years old)

Taste strongly influences food preparation, driving widespread use of stock cubes and fats to enhance flavour. Women’s sensitivity to palatability shapes household meals but may contribute to health risks, such as NCDs. Urban households prioritise taste, while rural households focus on satiety, reflecting economic constraints and divergent food priorities.

3.3.5. Advertising

Many focus group participants emphasised the strong influence of advertising on women’s food choices. This was vividly illustrated through participants’ testimonies, including the following statements:

“These products give strength and support growth.” (Merina Dakhar, focus group, woman, 26 years old)

“They are good for your health.” (Louga, focus group, woman, 22 years old)

“They taste better.” (Missirah, focus group, woman, 17 years old)

“They’re easy to prepare.” (Matam, focus group, woman, 34 years old)

“They are affordable.” (Louga, focus group, woman, 41 years old)

“Using these products gives women a sense of prestige and modernity. The appeal of modernity is one of the main factors. Modern products undoubtedly influence people, perhaps giving them a feeling of prestige. Products presented in attractive packaging may wrongly convey the idea of better quality.” (Niakhar, focus group, woman, 37 years old)

After completing household tasks, many women spend considerable time watching television or engaging with social media. This extended exposure to media content significantly increases their susceptibility to advertising, which influences food preferences and consumption practices. For example:

“Advertising can influence our choices. Sometimes we see recipes on YouTube, such as the pizza omelette, which makes us want to try making it. We’re trying more of the new dishes we see on social networks.” (Kaffrine, focus group, woman, 19 years old)

Advertising exerts a powerful influence on food choices by framing industrial products as symbols of modernity, health, and convenience. Media exposure reinforces these perceptions, shaping aspirations

toward prestige and urban lifestyles and potentially increasing demand for ultra-processed foods, which may displace more nutritious options and contribute to the risk of developing NCDs.

3.3.6. Cultural and religious prohibitions

Participants reported several forms of traditional food prohibition in Senegal. Some of these prohibitions relate to totemic animals associated with families. For example, the “Sène” families are prohibited from eating rabbit or hare meat, the “Sarr” families are prohibited from eating dromedary meat, the “Danfakha” families are prohibited from eating caiman meat, and the Serers, Toucouleurs, and Wolofs are prohibited from eating varan meat. Other traditional prohibitions apply particularly to women. For instance, pregnant women are forbidden from eating eggs or bananas. Young virgins are forbidden from eating white rice porridge, sweetened white rice balls, or curdled milk diluted with water, a dish commonly known as “Ndiar Soow”. Those living in the central, eastern, and southern regions of Senegal tend to respect these prohibitions.

Apart from traditional prohibitions, food prohibitions may have religious justifications. The most predominant form of this is found within the Muslim community, which accounts for 96 % of the total population. Participants stated that pork, carrion, meat from carnivorous animals, such as cats and dogs, and meat from wild boars and warthogs, as well as alcoholic beverages, are prohibited for Muslim's.

Collectively, these findings show that although cultural and religious food prohibitions are not the most frequently cited determinants, they continue to influence food acceptability and influence women's dietary options in specific contexts. They introduce symbolic boundaries that restrict consumption independently of economic or availability factors. Overall, traditional and religious norms add a culturally embedded layer to women's food choices, particularly in rural regions and among specific demographic groups.

3.4. Mixed methods integration

The information collected during the focus groups and semi-structured interviews corroborated and enriched the survey findings, providing a deeper understanding of how environmental and individual factors interact with economic and contextual constraints to shape women's food choices. This section focuses on quantitative contrasts that the qualitative evidence helps to explain, including income-related differences in the salience of freshness, hygiene, taste, branding, and convenience, as well as urban-rural differences in dietary priorities. Some determinants, such as freshness, hygiene, product brand, presentation, aroma, nutritional value and convenience (i.e., ease of cooking), appeared more prominently in the quantitative data, while cultural and religious prohibitions emerged exclusively from the qualitative discussions. This complementarity illustrates how different methods capture distinct but overlapping dimensions of women's food choices and supports the integrated interpretation that follows.

Quantitatively, freshness and hygiene were more salient among wealthier women, while price was a universal concern across quintiles. Qualitative narratives clarified that: women living in poverty often described making difficult budget trade-offs, struggling to afford fresh products, and frequently substituting them with cheaper, less nutritious options, prioritising cereals or peanuts over proteins and fruits. In contrast, wealthier women reported greater access to supermarkets and branded products, enabling them to privilege freshness, hygiene, or even nutritional value when making food choices.

Similarly, quantitative results showed that taste and brand sensitivity were more common among urban and higher-income women. Qualitative discussions revealed that these preferences were closely linked to the perceived prestige of packaged goods and advertising influence. Conversely, rural women and those living in poverty emphasised the primacy of satiety and affordability, noting that financial constraints limited both variety and quality.

Place of residence added another layer of influence. Urban women consistently prioritised freshness, hygiene, and overall food quality more strongly than rural women, as shown in the quantitative survey. Qualitative insights highlighted the structural barriers of physical availability and access that rural women faced, which limited their ability to act on preferences that wealthier. Collectively, integrating quantitative and qualitative findings illustrates that economic resources strongly influence women's food choices, with lower-income women constrained by cost and availability, while wealthier women can incorporate personal preferences, symbolic attributes of foods, and marketing exposure into their decisions. This mixed-methods approach provides a nuanced picture of how environmental and individual factors jointly influence dietary behaviour across socioeconomic strata and residential settings.

4. Discussion

In the present study, we explored the multifactorial drivers of food choices among Senegalese women, integrating quantitative survey data with qualitative insights from focus groups and semi-structured interviews. Food decisions were influenced by a complex interplay of prices and income, physical availability, household member preference, taste and palatability of food, advertising, and cultural and religious prohibitions. Quantitative data highlighted that while price is a universal concern across income groups, higher-income women are significantly more likely to prioritise freshness, hygiene, nutritional value, taste, and product branding in their food decisions. In contrast, lower-income women emphasised affordability and cited income limitations more frequently. These findings point to distinct socio-economic realities influencing dietary priorities. Qualitative narratives complemented this by illustrating how women navigate budget constraints, market availability, and cultural expectations, particularly in their roles as primary cooks, underscoring the convergence of structural and normative influences in influencing food behaviours and nutrition outcomes within Senegalese households.

These results can be explained using the FCPM, which conceptualises food decisions as shaped by the interplay of life course experiences, personal systems, and environmental contexts (Sobal et al., 2006, pp. 1–18; Winter Falk et al., 1996). Economic constraints and physical availability correspond to the “life course and contextual factors” of the model, establishing the realistically accessible foods. Household preferences and cultural or religious norms reflect “social influences,” while taste and palatability align with “personal food systems” that guide sensory expectations. Symbolic drivers, such as advertising and aspirations for modernity, illustrate how “ideational and identity-related factors” intersect with gender roles, reinforcing women's responsibility for meal preparation and social validation through food. Introducing this framework clarifies how the diverse determinants identified in our study operate jointly rather than in isolation and provides a coherent structure for interpreting the empirical findings discussed below.

Economic constraints emerge as the most immediate and constraining contextual factor shaping daily food decisions. Poverty, high prices, and cultural preferences in sub-Saharan Africa limit healthy eating (Headey & Hirvonen, 2023). In South Africa, lower-income women emphasise cost and availability, whereas higher-income women prioritise health and taste (Magano et al., 2023). Previous studies further highlight that limited economic access leads to greater consumption of processed less nutritious foods by women (Stone et al., 2024). These findings underscore the central role of financial resources in dietary decisions. While prior research has established the role of economic constraints in shaping food choices (Headey & Hirvonen, 2023; Magano et al., 2023), this study extends this understanding by integrating complementary insights from both qualitative and quantitative perspectives. Qualitative narratives detailed how limited purchasing power shapes everyday decisions, often forcing women to sacrifice nutrient-dense foods, such as meats, fruits, and legumes, in favour of

cheaper, energy-dense staples, such as rice and peanuts. This dynamic is particularly acute in rural settings, where women described recipe improvisation and reliance on locally available but nutritionally limited ingredients. These adaptive strategies often lead to monotonous diets and increased risk of nutritional deficiencies as stated by [Vilar-Compte et al. \(2021\)](#). Our quantitative findings corroborated these observations, showing that while concerns about price were reported across all income groups, income itself was more frequently cited by women in the lowest expenditure quintile, particularly among those in rural areas, indicating heightened financial hardship. Conversely, women in the highest-income quintile were significantly more likely to prioritise freshness, hygiene, nutritional value, taste, and product branding, reflecting greater financial flexibility and access to a wider food environment. Consistent with our findings, evidence from other contexts have reported that economic hardship is associated with reduced diet quality and lower dietary diversity ([Magano et al., 2023](#); [Zembe-Mkabile et al., 2022](#)). Consistently, comparative evidence from Sub-Saharan Africa showed that women in higher wealth quintiles are substantially more likely to achieve minimum dietary diversity than those in lower-income households, underscoring the role of income in enabling access to fresher, more nutritious, and higher-quality foods ([Janmohamed et al., 2024](#)). Collectively, these contributions help explain why the Senegalese context produces specific dietary patterns that differ from those documented elsewhere in the region and they set the foundation for further interpreting the nutritional implications of these findings. Regardless of income level, food choices often fail to support adequate nutritional status. Low purchasing power favours undiversified diets lacking in key nutrients, such as protein sources, fruits, and vegetables, which facilitates the development of malnutrition ([Kimani-Murage, 2013](#); [Korir et al., 2023](#)). Meanwhile, increases in income tend to promote the consumption of ultra-processed products, such as soft drinks, contributing to the increasing prevalence of obesity and diet-related NCDs ([de Araújo et al., 2021](#); [Valizadeh & Ng, 2024](#)). These findings highlight the need for public interventions that promote the production, preservation, and accessibility of nutritious foods, particularly fruits and vegetables, targeted to the lowest income quintiles, and support value chains that make these foods more available in everyday diets. While financial resources shape the range of foods households can afford, the types of foods that are realistically accessible are further constrained by the physical and seasonal availability of food within local markets and communities.

Physical availability falls under the contextual and environmental factors that delimit what foods are realistically accessible in daily life. Our findings highlight that this dimension is particularly salient given the marked contrast between urban and rural food environments. Urban populations reported benefiting from greater diversity in food environments, with access to communal markets, supermarkets, and retail outlets, whereas rural populations often relied on limited weekly markets, subsistence farming, and seasonal availability. [Reardon et al. \(2021\)](#) demonstrate that in sub-Saharan African cities, food purchases span multiple market channels, indicative of a complex urban food landscape shaped by diverse access modalities. In contrast, [Benassai-Dalmay et al. \(2025\)](#) document that rural and economically disadvantaged communities experience longer travel times, restricted market access, and lower spatial redundancy, which constrains food choice. Similarly, [Nandi and Nedumaran \(2022\)](#) show that rural households often heavily rely on subsistence production, with diets that vary seasonally and depend on the diversity of locally grown foods. These disparities shape dietary options and contribute to differences in nutritional status and health outcomes across settings. They are consistent with studies showing how food environments influence nutritional behaviour and access to healthy choices ([Blake et al., 2023](#); [Esfandiari Bahraseman et al., 2025](#)). Beyond physical distance, the literature further underscores the importance of perceptions. [Morland et al. \(2015\)](#) emphasises that spatial distribution of food outlets, proximity and density strongly affect food purchasing patterns, particularly among

populations with limited mobility or transportation options. Consistently, [Rideout et al. \(2015\)](#) noted that food environments are multifaceted, encompassing both physical and social dimensions, where perceptions of food quality, affordability, and cultural relevance significantly influence dietary decisions. [Rivera-Navarro et al. \(2021\)](#) further highlighted that residents' perceptions of their local food environments play a critical role in shaping dietary patterns. In socioeconomically diverse urban neighbourhoods, perceptions of food quality, affordability, and accessibility widely vary, reinforcing the notion that availability is not merely physical but socially constructed. While physical and economic access determine the range of foods realistically available to households, women's choices within these constraints are further influenced by personal preferences and sensory expectations.

Taste and palatability belong to the "personal food system," encompassing sensory expectations, evaluations of liking, and internalised preferences shaped over the life course. Previous research indicates that individuals with higher socio-economic status perceive healthier foods as more palatable and satisfying and often select foods based on sensory appeal rather than cost or nutrition alone ([Andretti et al., 2025](#); [Drewnowski, 1997](#); [Feraco et al., 2024](#)). Our study aligns with these findings showing that taste was significantly more cited by women in the highest-income quintile compared with those in the lower-income quintile (22 % compared to 11 %), suggesting greater autonomy in prioritising sensory appeal over cost-based decisions. Similar dynamics have been observed elsewhere in West Africa; [Tibère et al. \(2023\)](#) highlighted how aspirations for palatability increasingly influence food practices in Bamako (Mali), particularly among more affluent households. This trend was echoed in qualitative narratives from our study where women across urban and rural settings emphasised the importance of flavourful meals often achieved using stock cubes, oils, sugar, and salt. These ingredients were described not only as culinary essentials but also as tools for social validation, ensuring meals are perceived as delicious and satisfying by household members. However, these preferences have nutritional consequences. Foods high in salt, sugar, and fat are more likely to be consumed due to their sensory appeal ([Daly et al., 2023](#); [Kibr, 2021](#); [Kourouniotis et al., 2016](#); [Magano et al., 2023](#); [Sato et al., 2020](#); [Sørensen et al., 2003](#)). This aligns with behavioural evidence suggesting that exposure to energy-dense, palatable foods undermines the willingness to choose healthier alternatives ([Cunningham & Egeth, 2018](#); [Forde & de Graaf, 2022](#); [McCrickerd & Forde, 2016](#)). In Senegal, sociocultural expectations further reinforce this dynamic. Culinary expertise is closely tied to women's social identity and perceived value within households, where food is not only sustenance but a marker of generosity, hospitality, and femininity ([Lioré, 2010](#)). From an early age, girls are socialised into cooking roles, with expectations to master meal preparation by adolescence ([Ndoye & Diop, 2001](#)). Moreover, women's food practices are closely linked to gendered ideals of desirability, with cooking constituting part of a wider repertoire of symbolic and embodied labour through which femininity and attractiveness are negotiated ([Gilbert, 2016](#)). [Cohen and Boëtsch Patrick \(2012\)](#) also highlighted how the social construction of the body in Senegal is associated with food practices and gender norms, emphasising the embodied dimensions of femininity and social identity. These norms place implicit pressure on women to prioritise palatability, often at the expense of health, contributing to widespread overconsumption of flavour-enhancing products. Importantly, our collected data also highlights men's perspectives, which provide additional insight into household food dynamics. Men frequently commented on women's use of flavour enhancers and expressed concerns regarding both perceived excess and potential health consequences. While women are primarily responsible for meal preparation, men's awareness of dietary risks and their views on palatability reveal that food practices are negotiated within households, reflecting gendered expectations, power dynamics, and perceptions of health. These gendered interactions intersect with urban-rural differences, where urban households tend to emphasise taste and meal quality, whereas rural households prioritise satiety and

sufficient food quantity. In this context, focus group participants and health professionals of our study expressed concern over rising NCDs, including hypertension, diabetes, and kidney conditions, disproportionately affecting older women. These findings emphasise the need for culturally grounded interventions that recognise how gendered roles, taste expectations, and nutritional risk are closely associated with household food dynamics. While taste and palatability guide women's personal food choices, these preferences are further influenced and amplified by ideational and identity-related factors, such as advertising and media exposure, which influence aspirations, perceptions of modernity, and social validation.

Our findings indicate that this influence is highly context dependent. Urban populations appear more responsive to marketing cues, likely due to higher exposure and greater access to commercially processed and promoted foods. In contrast, rural households seem less affected by advertising and more guided by other determinants, such as household priorities and resource limitations. Arnolds (2023) showed that exposure to food advertising increases women's consumption, especially when attention is divided, while Zimmerman and Shimoga (2014) demonstrate that television food marketing affects dietary decisions across populations. Other studies have further shown that food marketing stimulates appetite hormones and contributes to increased consumption of unhealthy, ultra-processed products (Dos Santos & De Rose, 2018; Santos et al., 2020), deepening nutritional vulnerability.

Beyond these symbolic drivers, more prescriptive social influences, such as cultural and religious food prohibitions, further delineate what is considered acceptable or desirable to eat, highlighting the interplay between aspirational and normative determinants in shaping women's dietary practices. Cultural and religious prohibitions align with social influences and symbolic meaning systems, which define what is considered acceptable, desirable, or morally appropriate to eat. Although cited less frequently in our study, these norms introduce nuanced constraints on women's dietary choices, particularly in rural areas and among specific groups such as pregnant women and adolescent girls. Our findings highlighted cultural prohibitions, such as avoiding totemic animal meats, remain respected in rural areas of central and southern Senegal, as well as gendered restrictions particularly affecting pregnant women and adolescent girls. These prescriptive norms shaped by religion or culture illustrate how symbolic beliefs continue to shape what is deemed acceptable or harmful to eat, even when nutritional considerations might suggest otherwise. Consistently, Meyer-Rochow (2009) stated that totemic animals are avoided in some cultures due to beliefs about illness or misfortune. Among pregnant women, culturally rooted restrictions are common; Tugume et al. (2024) report avoidance of sugarcane, fish, eggs, and chicken in Uganda, while Rayna et al. (2024) described the belief that consuming sheep meat during pregnancy may cause undesirable body odour in the newborn. Monterrosa et al. (2020) emphasise that ideational aspects of food culture, including symbolic meanings, moral codes, and social roles, are central to understanding dietary behaviours and their implications for nutrition and health. This perspective resonates with Douglas (1966), who provides a foundational anthropological framework for interpreting food prohibitions as systems of symbolic boundary-making that structure what is considered acceptable or unacceptable to eat. Religious norms also shape dietary choices, particularly within Senegal's Muslim majority population. Our study found that prohibitions on pork, alcohol, and carrion guide food acceptability and reinforce moral and social codes, although they are not the primary drivers of everyday food decisions. These findings align with broader literature showing that cultural and religious norms, such as totemic prohibitions, gendered restrictions, and ritual prohibitions play a substantial role in shaping food acceptability and consumption patterns (Filimonau et al., 2023; Roudsari et al., 2019). Cultural and religious prohibition presence underscores the importance of considering symbolic and normative dimensions when analysing dietary practices and designing nutrition-sensitive interventions.

Based on these findings through the FCPM, it is useful to establish Senegalese women's food choices in the broader African context. Compared with the results in this study, studies from South, West, and East Africa converge on several determinants of women's food choices that are also observed in Senegal. Research from South Africa (Janmohamed et al., 2024; Zembe-Mkabile et al., 2022) and Kenya (Kimani-Murage, 2013; Korir et al., 2023) highlight the central role of financial constraints, mirroring our finding that limited purchasing power is the dominant barrier shaping women's diets. Similar patterns are reported in Ethiopia and Uganda (Headey & Hirvonen, 2023; Magano et al., 2023), where increasing food prices and income instability constrain dietary diversity. The influence of cultural and religious norms in Senegal is also consistent with research from Uganda (Tugume et al., 2024) and Ghana (Filimonau et al., 2023), which identifies the persistence of symbolic food prohibitions and gendered restrictions among women and adolescent girls. These similarities also extend to previous research conducted within Senegal. Gendered nature of food work, with cooking representing an essential dimension of femininity, social identity, and hospitality are highlighted in certain studies on Senegal (Gilbert, 2016; Lioré, 2010; Ndoye & Diop, 2001). This is consistent with our observation that women's food decisions are embedded in moral, social, and symbolic expectations and negotiated within household dynamics.

This study advances the African literature through several methodological contributions. First, it uses a nationally representative dataset, whereas most comparative studies rely either on urban samples (Gilbert, 2016; Holdsworth et al., 2006; Ndoye & Diop, 2001; Stone et al., 2024) or rural-specific populations (Magano et al., 2023; Owolodun et al., 2025), limiting their generalisability. Second, the mixed-method design, combining a quantitative and qualitative survey, both representing the national level, allows for a deeper understanding of how structural, sensory, symbolic, and normative drivers interact. Our study is distinguished by its integration of quantitative gradients (e.g., by expenditure quintile) with qualitative narratives to contextualise these patterns. Third, the integration of quantitative gradients, particularly by expenditure quintile, together with qualitative narratives provides a layered interpretation of how economic constraints, social norms, food environments, and marketing pressures shape dietary practices differently across contexts. Fourth, our findings reveal that in the Senegalese context a unique combination of ethnic totemic prohibitions, religious norms linked to the Muslim majority, and strong generational negotiations within extended households are less clearly documented in studies from Ghana or Nigeria.

Overall, our findings demonstrate that women's food choices are shaped by a multifactorial nexus of economic constraints, sensory preferences, marketing exposure, physical access and socio-cultural norms, operating within gendered food roles and unequal food environments. The differential manifestation of these determinants across income groups, and urban and rural environments underscores the need for context-sensitive public health strategies that move beyond singular explanatory models of dietary behaviour. By integrating nationally representative survey data with qualitative insights, this study demonstrates how economic and structural barriers, aspirations for palatable and socially valued foods, exposure to advertising, and embedded cultural and religious codes jointly shape both the diversity and quality of diets, with implications for persistent forms of malnutrition, increasing obesity rates, and diet-related non-communicable diseases.

Effective interventions must therefore be multifaceted, context-sensitive, and culturally grounded to meaningfully improve nutritional outcomes. Based on the study findings and existing literature, three key aspects are established for intervention to improve nutrition outcomes. First, enhancing access to nutritious foods requires targeted investment in local food systems, specifically through the development of rural market infrastructure, transportation networks, and support for small-holder production, to ensure the consistent availability of diverse and nutrient-rich foods. Second, fostering healthier dietary practices in

urban contexts calls for regulatory measures addressing food marketing and advertising, particularly of ultra-processed products, alongside the promotion of affordable, nutritious, and culturally appropriate alternatives. Third, strengthening gender-responsive social protection mechanisms, including cash or in-kind transfers and subsidies for nutritious foods, should be integrated with nutrition education initiatives aimed at improving women's knowledge and agency in household food decision-making.

5. Limitations

This study has some limitations that should be acknowledged. First, although we identified factors shaping food choices, the study does not include direct dietary assessments. The lack of objective nutritional indicators, such as dietary diversity or nutrient adequacy measures, limits the ability to link these factors with specific nutritional outcomes. Second, the qualitative component may be affected by selection and social desirability bias, as participants could overreport socially approved behaviours or underreport fewer non-desirable practices. Third, while geographic and cultural variations across regions were considered, intra-regional and intra-cultural nuances were not fully explored, which could further inform understanding of dietary practices. Finally, the exclusive focus on women, despite their central role in household food provision, leaves male food-related behaviours and decision-making underexamined. Incorporating men's roles, particularly in budgeting and food preferences, would enhance the gendered analysis and provide a more complete picture of household food dynamics.

6. Conclusion

Our findings highlight the intricate interaction between cultural norms, economic limitations, and personal preferences in determining women's food choices in Senegal. The findings also show a nuanced understanding of how economic constraints, social norms, and food environments intersect to shape dietary practices. The results emphasise the need for interventions that go beyond improving affordability and nutritional knowledge, by also addressing socially driven taste preferences and marketing practices that encourage unhealthy diets. Future research should incorporate direct dietary assessments, examine cultural variations across regions, and include male perspectives to support the development of more inclusive and context-sensitive nutrition policies and programs. It may also be relevant to further explore the phases of dietary transition as defined by Popkin and Ng (2022), to highlight Senegal's specific trajectory within this broader framework. Likewise, a closer examination of rural settings is needed to assess the role of local produce and traditional practices in maintaining dietary quality, as well as the impact of modernisation on these practices and their possible deterioration.

CRediT authorship contribution statement

Fanta Ndioba Sylla: Writing – review & editing, Writing – original draft, Formal analysis, Data curation, Conceptualization. **Abdoulaye Diagne:** Writing – review & editing, Supervision, Project administration, Funding acquisition, Conceptualization.

Ethical Statement

Hereby, I, Fanta Ndioba Sylla, consciously assure that for the manuscript entitled "Behind the plate: revealing the drivers of women's food choices in Senegal", the following is fulfilled:

1. This material is the author's own original work, which has not been previously published elsewhere.
2. The paper is not currently being considered for publication elsewhere.

3. The paper reflects the author's own research and analysis in a truthful and complete manner.
4. The paper properly credits the meaningful contributions of co-authors and co-researchers.
5. The results are appropriately placed in the context of prior and existing research.
6. All sources used are properly disclosed (correct citation). Literally copying of text must be indicated as such by using quotation marks and giving proper reference.
7. All authors have been personally and actively involved in substantial work leading to the paper and will take public responsibility for its content.

The violation of the Ethical Statement rules may result in severe consequences.

To verify originality, your article may be checked by the originality detection software iThenticate. See also: <http://www.elsevier.com/editors/plagdetect>.

I agree with the above statements and declare that this submission follows the policies of Solid State Ionics as outlined in the Guide for Authors and in the Ethical Statement.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.appet.2025.108423>.

Data availability

Data will be made available on request.

References

Abderrahmane, N'Gaïde (2003). *Stéréotypes et imaginaires sociaux en milieu haalpulaar*.

- Agence Nationale de la Statistique et de la Démographie [ANSD] & Ministère de l'Économie, des F. et du P. [MEFP]. (2016). Enquête nationale sur les facteurs de risque des maladies non transmissibles (STEPS 2015) – Rapport généré de la documentation. https://www.ansd.sn/sites/default/files/2024-02/RAP_RAPPORT%20PRELIMINAIRE%20STEPS%202015.pdf.
- Ajzen, I. (1991). *The theory of planned behavior*.
- Al-Jawaldeh, A., & Abbass, M. M. S. (2022). Unhealthy dietary habits and obesity: The major risk factors beyond non-communicable diseases in the Eastern Mediterranean region. In *Frontiers in nutrition* (Vol. 9). Frontiers Media S.A. <https://doi.org/10.3389/fnut.2022.817808>
- Andretti, B., Vieites, Y., Elmor, L., & Andrade, E. B. (2025). How socioeconomic status shapes food preferences and perceptions. *Journal of Marketing*. <https://doi.org/10.1177/00222429241296048>
- Ares, G., & Gámbaro, A. (2008). Food choice and food consumption frequency for Uruguayan consumers. *International Journal of Food Sciences & Nutrition*, 59(3), 211–223. <https://doi.org/10.1080/09637480701497402>
- Arnolds, L. (2023). *Food Marketing: The Adverse Effects of Food Advertisements and Food Marketing: The Adverse Effects of Food Advertisements and Media Messaging on Men, Women, and Children Media Messaging on Men, Women, and Children*. <https://scholarworks.uark.edu/mgmtuht>.
- Benassai-Dalmau, R., Voukelatou, V., Schifanella, R., Fiandrino, S., Paolotti, D., & Kalimeri, K. (2025). Unequal journeys to food markets: Continental-scale evidence from open data in Africa. <http://arxiv.org/abs/2505.07913>.
- Bigna, J. J., & Noubiap, J. J. (2019). The rising burden of non-communicable diseases in Sub-Saharan Africa. *Lancet Global Health*, 7(10), e1295–e1296. [https://doi.org/10.1016/S2214-109X\(19\)30370-5](https://doi.org/10.1016/S2214-109X(19)30370-5). Elsevier Ltd.
- Blake, C. E., Monterrosa, E. C., Rampalli, K. K., Khan, A. N. S., Reyes, L. I., Drew, S. D., Dominguez-Salas, P., Bukachi, S. A., Ngutu, M., Frongillo, E. A., Iruhriye, E., & Girard, A. W. (2023). Basic human values drive food choice decision-making in different food environments of Kenya and Tanzania. *Appetite*, 188. <https://doi.org/10.1016/j.appet.2023.106620>
- Bozena STOMAL-WEIGEL. (1988). *L'évolution récente et comparée des systèmes de production serer et wolof dans deux villages du vieux Bassin Arachidier (Sénégal)*.
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>. Routledge.
- Bronfenbrenner, U. (1994). Ecological models of human development. *International Encyclopedia of Education*, 3(2), 37–43.
- Cabral, D., Cunha, L. M., & Vaz de Almeida, M. D. (2019). Food choice and food consumption frequency of Cape Verde inhabitants. *Appetite*, 139, 26–34. <https://doi.org/10.1016/j.appet.2019.04.005>
- Cohen, E., & Boëtisch Patrick, G. P. (2012). La construction sociale du corps chez les Sénégalais, une clé pour appréhender leur rapport à la corpulence dans le contexte de la transition des modes de vie. <http://www.theses.fr/2012AIXM5048/document>.
- Commission économique pour l'Afrique. (2024). Comité d'experts de la Conférence des ministres africains des finances, de la planification et du développement économique : Quarante-deuxième réunion, Victoria Falls (Zimbabwe), 28 février–1er mars 2024. <https://papersmart.uneca.org/download/5047>.
- Cuevas, C., Herrera, P., Morales, G., Aguayo, L., & Galvez, E. P. (2021). Understanding the food-family relationship: A qualitative research in a Chilean low socioeconomic context. *Appetite*, 156. <https://doi.org/10.1016/j.appet.2020.104852>
- Cunha, L. M., Cabral, D., Moura, A. P., & de Almeida, M. D. V. (2018). Application of the food choice questionnaire across cultures: Systematic review of cross-cultural and single country studies. *Food Quality and Preference*, 64, 21–36. <https://doi.org/10.1016/j.foodqual.2017.10.007>
- Cunningham, C. A., & Egeth, H. E. (2018). The capture of attention by entirely irrelevant pictures of calorie-dense foods. *Psychonomic Bulletin & Review*, 25(2), 586–595. <https://doi.org/10.3758/s13423-017-1375-8>
- Daly, A. N., O'Sullivan, E. J., Walton, J., Kehoe, L., McNulty, B. A., Flynn, A., & Kearney, J. M. (2023). Determining the food choice motivations of Irish teens and their association with dietary intakes, using the food choice questionnaire. *Appetite*, 189. <https://doi.org/10.1016/j.appet.2023.106981>
- Das, S., & Mishra, A. J. (2021). Dietary practices and gender dynamics: Understanding the role of women. *Journal of Ethnic Foods*, 8(1). <https://doi.org/10.1186/s42779-021-00081-9>. BioMed Central Ltd.
- de Araújo, T. P., de Moraes, M. M., Magalhães, V., Afonso, C., Santos, C., & Rodrigues, S. S. P. (2021). Ultra-processed food availability and noncommunicable diseases: A systematic review. *International Journal of Environmental Research and Public Health*, 18(14). <https://doi.org/10.3390/ijerph18147382>. MDPI AG.
- Dos Santos, S. L., & De Rose, J. C. C. (2018). Investigating the impact of stimulus equivalence on children's food choice and preference. *Trends in Psychology*, 26(1), 1–14. <https://doi.org/10.9788/TP2018.1-01>
- Douglas, M. (1966). *Purity and danger: AN analysis of the concepts of pollution and taboo*.
- Drewnowski, A. (1997). Taste preferences and food intake. *Annual Review of Nutrition*, 17. www.annualreviews.org.
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Esfandiari Bahraseman, S., Dashtabi, M. D., Firoozare, A., Boccia, F., Pakook, S., & Covino, D. (2025). Understanding consumer behavior in the choice of healthy food retail outlets: An examination of information types and the interplay between institutional trust and social recommendations. *Economic Analysis and Policy*, 86, 2070–2094. <https://doi.org/10.1016/j.eap.2025.05.035>
- Farris, A. R., Misyak, S., O'Keefe, K., VanSicklin, L., & Porton, I. (2020). Understanding the drivers of food choice and barriers to diet diversity in Madagascar. *Journal of Hunger & Environmental Nutrition*, 15(3), 388–400. <https://doi.org/10.1080/19320248.2019.1566110>
- Feraco, A., Armani, A., Amoah, I., Guseva, E., Camajani, E., Gorini, S., Strollo, R., Padua, E., Caprio, M., & Lombardo, M. (2024). Assessing gender differences in food preferences and physical activity: A population-based survey. *Frontiers in Nutrition*, 11. <https://doi.org/10.3389/fnut.2024.1348456>
- Fernqvist, F., Spendrup, S., & Tellström, R. (2024). Understanding food choice: A systematic review of reviews. *Heliyon*, 10(12), Article e32492. <https://doi.org/10.1016/j.heliyon.2024.e32492>. Elsevier Ltd.
- Filimonau, V., Matute, J., Kubal-Czerwńska, M., & Mika, M. (2023). Religious values and social distance as activators of norms to reduce food waste when dining out. *Science of the Total Environment*, 868. <https://doi.org/10.1016/j.scitotenv.2023.161645>
- Forde, C. G., & de Graaf, K. (2022). Influence of sensory properties in moderating eating behaviors and food intake. *Frontiers in Nutrition*, 9. <https://doi.org/10.3389/fnut.2022.841444>. Frontiers Media S.A.
- Furst, T., Connors, M., Bisogni, C. A., Sobal, J., & Falk, L. W. (1996). Food choice: A conceptual model of the process. *Axelson & Brinberg*, 26. Thompson.
- Gama, A. P., Adhikari, K., & Hoisington, D. A. (2018). Factors influencing food choices of Malawian consumers: A food choice questionnaire approach. *Journal of Sensory Studies*, 33(5). <https://doi.org/10.1111/joss.12442>
- Gilbert, V. (2016). *Mokk pooj: Gender, interpretive labour and sexual imaginary in senegal's art/work of seduction*.
- Greenwood, N., Ellmers, T., & Holley, J. (2014). The influence of ethnic group composition on focus group discussions. *BMC medical research methodology*, 14(1), 107. <https://doi.org/10.1186/1471-2288-14-107>
- Habib, S. H., & Saha, S. (2010). Burden of non-communicable disease: Global overview. *Diabetes & Metabolic Syndrome: Clinical Research Reviews*, 4(1), 41–47. <https://doi.org/10.1016/j.dsx.2008.04.005>. Elsevier Ltd.
- Harbers, M. C., Middel, C. N. H., Stuber, J. M., Beulens, J. W. J., Rutters, F., & van der Schouw, Y. T. (2021). Determinants of food choice and perceptions of supermarket-based nudging interventions among adults with low socioeconomic position: The supreme nudge project. *International Journal of Environmental Research and Public Health*, 18(11). <https://doi.org/10.3390/ijerph18116175>
- Harrell, M. C., & Bradley, M. A. (2009). Data collection methods: Semi-structured interviews and focus groups. www.rand.org.
- Headley, D., & Hirvonen, K. (2023). Higher food prices can reduce poverty and stimulate growth in food production. *Nature Food*, 4(8), 699–706. <https://doi.org/10.1038/s43016-023-00816-8>
- Hennink, M. M. (2007). *International focus group research: A handbook for the health and social sciences*. Cambridge University Press. <https://books.google.sn/books?id=LoLxswEACAAJ>.
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292. <https://doi.org/10.1016/j.socscimed.2021.114523>
- Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2017). Code saturation versus meaning saturation: How many interviews are enough? *Qualitative Health Research*, 27(4), 591–608. <https://doi.org/10.1177/1049732316665344>. SAGE Publications Inc.
- Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative Health Research*, 29(10), 1483–1496. <https://doi.org/10.1177/1049732318821692>
- Holdsworth, M., Delpeuch, F., Landais, E., Gartner, A., Eymard-Duvernay, S., & Maire, B. (2006). Knowledge of dietary and behaviour-related determinants of non-communicable disease in urban Senegalese women. *Public Health Nutrition*, 9(8), 975–981. <https://doi.org/10.1017/PHN2006979>
- Ibrahima Thiaw. (2010). *Espaces, culture matérielle et identités en Sénégal*.
- Janmohamed, A., Baker, M. M., Doledec, D., Ndiaye, F., Konan, A. C. L., Leonce, A., Kouadio, K. L., Beye, M., Danboyi, D., Jumbo, T. J., Ndjebayi, A., Ombati, C., Njenga, B. K., & Dissieka, R. (2024). Dietary quality and associated factors among women of reproductive age in six sub-saharan African countries. *Nutrients*, 16(8). <https://doi.org/10.3390/nu16081115>
- Karanja, A., Ickowitz, A., Stadlmayr, B., & McMullin, S. (2022). Understanding drivers of food choice in low- and middle-income countries: A systematic mapping study. *Global Food Security*, 32. <https://doi.org/10.1016/j.gfs.2022.100615>. Elsevier B.V.
- Kibr, G. (2021). Food choice behaviors of lactating women: Association with body mass index and fruits and vegetables intake in central amhara region, Ethiopia-An observational study. *Journal of Nutrition and Metabolism*, 2021. <https://doi.org/10.1155/2021/6654659>
- Kimani-Murage, E. W. (2013). Exploring the paradox: Double burden of malnutrition in rural South Africa. *Global Health Action*, 6(1). <https://doi.org/10.3402/gha.v6i0.19249>
- Knodel, J. (1995). Focus groups as a qualitative method for crosscultural research in social gerontology. *Journal of Cross-Cultural Gerontology*, 10(1), 7–20. <https://doi.org/10.1007/BF00972029>
- Kolliessuah, N. P., Olum, S., & Ongeng, D. (2023). Status of household dietary diversity and associated factors among rural and urban households of northern Uganda. *BMC Nutrition*, 9(1). <https://doi.org/10.1186/s40795-023-00739-4>
- Korir, L., Rizov, M., & Ruto, E. (2023). Diet diversity, malnutrition and health: Evidence from Kenya. *Journal of Agricultural Economics*, 74(2), 534–550. <https://doi.org/10.1111/1477-9552.12519>
- Kourouniotis, S., Keast, R. S. J., Riddell, L. J., Lacy, K., Thorpe, M. G., & Cicerale, S. (2016). The importance of taste on dietary choice, behaviour and intake in a group of young adults. *Appetite*, 103, 1–7. <https://doi.org/10.1016/j.appet.2016.03.015>
- Kroese, K., Ofori, B. A., Abdulai, D. R., Monahan, M., Prah, A., & Tabiri, S. (2021). Community engagement and involvement in Ghana: Conversations with community stakeholders to inform surgical research. *Research Involvement and Engagement*, 7(1). <https://doi.org/10.1186/s40900-021-00270-5>

- Lioré, J. (2010). Les mères, les filles et la cuisine "africaine" en situation de migration (Marseille). *Hommes & Migrations*, 1286–1287, 178–188. <https://doi.org/10.4000/hommesmigrations.1746>
- Magano, N. N., Tuorila, H., & De Kock, H. L. (2023). Food choice drivers at varying income levels in an emerging economy. *Appetite*, 189. <https://doi.org/10.1016/j.appet.2023.107001>
- McCrickerd, K., & Forde, C. G. (2016). Sensory influences on food intake control: Moving beyond palatability. *Obesity Reviews*, 17(1), 18–29. <https://doi.org/10.1111/obr.12340>
- McMullin, S., Njogu, K., Wekesa, B., Gachuiri, A., Ngethe, E., Stadlmayr, B., Jannadass, R., & Kehlenbeck, K. (2019). Developing fruit tree portfolios that link agriculture more effectively with nutrition and health: A new approach for providing year-round micronutrients to smallholder farmers. *Food Security*, 11(6), 1355–1372. <https://doi.org/10.1007/s12571-019-00970-7>
- Meyer-Rochow, V. B. (2009). Food taboos: Their origins and purposes. *Journal of Ethnobiology and Ethnomedicine*, 5. <https://doi.org/10.1186/1746-4269-5-18>. BioMed Central Ltd.
- Ministère de la Santé & Agence nationale de la statistique et de la démographie. (2024). Atlas des indicateurs phares de l'enquête STEPS Sénégal 2024. https://drive.google.com/file/d/1-KJq-vj-PVQMOL_rgi94Fk0Lkhk50xgX/view?fbclid=IwZxh0bgNhZW0CMTAAAYnJpZBExb285ZGc3Y3JfYTdtNiZhNQEeOdo-RlrRB_FGha_ZXMWwKESdijUyGjKXicYJrFUSAVdxhfaVt9J8cd6Fn62s_aem_hX2YOXZIfnA_c10L0-53Q
- Monteiro, C. A., & Rezende, L. F. M. (2024). Are all ultra-processed foods bad for health? *The Lancet Regional Health - Europe*, 46, Article 101106. <https://doi.org/10.1016/j.lanepe.2024.101106>
- Monterrosa, E. C., Frongillo, E. A., Drewnowski, A., de Pee, S., & Vandevijvere, S. (2020). Sociocultural influences on food choices and implications for sustainable healthy diets. *Food and Nutrition Bulletin*, 41(2 suppl), 59S–73S. <https://doi.org/10.1177/0379572120975874>
- Morland, K. B., Lehmann, Y. M., & Karpyn, A. E. (2015). *Local food environments: Food access in America* (1st ed.). CRC Press.
- Nandi, R., & Nedumaran, S. (2022). Rural market food diversity and farm production diversity: Do they complement or substitute each other in contributing to a farm household's dietary diversity? *Frontiers in Sustainable Food Systems*, 6. <https://doi.org/10.3389/fsufs.2022.843697>
- Ndoye, F., & Diop, A. (2001). Evolution des styles alimentaires à Dakar. CIRAD ; ENDA-GRAF https://agents.cirad.fr/pjijmg/nicolas.bricas@cirad.fr/Ndoye_al_2001.pdf
- Njuki, J., Eissler, S., Malapit, H., Meinzen-Dick, R., Bryan, E., & Quisumbing, A. (2022). A review of evidence on gender equality, women's empowerment, and food systems. *Global Food Security*, 33. <https://doi.org/10.1016/j.gfs.2022.100622>
- O'Brien, C., Leavens, L., Ndiaye, C., & Traoré, D. (2022). Women's empowerment, income, and nutrition in a food processing value chain development project in Touba, Senegal. *International Journal of Environmental Research and Public Health*, 19(15). <https://doi.org/10.3390/ijerph19159526>
- Ochieng, B. M. N. (2010). "You Know What I Mean?" the ethical and methodological dilemmas and challenges for black researchers interviewing black families. *Qualitative Health Research*, 20(12), 1725–1735. <https://doi.org/10.1177/1049732310381085>
- Okoro, C. S., Musonda, I., & Agumba, J. (2017). Evaluating the influence of nutrition determinants on construction workers' food choices. *American Journal of Men's Health*, 11(6), 1713–1727. <https://doi.org/10.1177/1557988315625775>
- Owolodun, B., Gmür, D., Felber, S., Ollier, C., Haller, T., & Merten, S. (2025). From diversity to uniformity: Comparing nutritional transition of food consumption in four regions in Senegal. *Food, Culture and Society*, 28(3), 503–527. <https://doi.org/10.1080/15528014.2024.2310380>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Perez-Cueto, F. J. A. (2019). An umbrella review of systematic reviews on food choice and nutrition published between 2017 and 2019. *Nutrients*, 11(10). <https://doi.org/10.3390/nu11102398>. MDPI AG.
- Pienaaah, C. K. A., Molle, M. N., & Luginaaah, I. (2025). The role of child nutrition counselling, gender dynamics, and intra-household feeding decision-making on child dietary diversity in semi-arid northern Ghana. *Appetite*, 204. <https://doi.org/10.1016/j.appet.2024.107755>
- Popkin, B. M., & Ng, S. W. (2022). The nutrition transition to a stage of high obesity and noncommunicable disease prevalence dominated by ultra-processed foods is not inevitable. *Obesity Reviews*, 23(1). <https://doi.org/10.1111/obr.13366>
- Poulain, J. P. (2013). Sociologies de l'alimentation. <https://doi.org/10.3917/puf.pou1.2013.01>
- Raaijmakers, I., Snoek, H., Maziya-Dixon, B., & Achterbosch, T. (2018). Drivers of vegetable consumption in urban Nigeria: Food choice motives, knowledge, and self-efficacy. *Sustainability (Switzerland)*, 10(12). <https://doi.org/10.3390/su10124771>
- Rayna, S. E., Khan, F. A., Samin, S., Siraj, S., Nizam, S., Islam, S. S., & Khalequzzaman, M. (2024). A qualitative study on food taboos among rural pregnant women in Bangladesh: Motivators for adherence and influencers of taboo-breaking behavior. *Frontiers in Nutrition*, 10.1101/2024.09.09.24313362.
- Reardon, T., Tschirley, D., Liverpool-Tasie, L. S. O., Awokuse, T., Fanzo, J., Minten, B., Vos, R., Dolislagel, M., Sauer, C., Dhar, R., Vargas, C., Lartey, A., Raza, A., & Popkin, B. M. (2021). The processed food revolution in African food systems and the double burden of malnutrition. *Global Food Security*, 28. <https://doi.org/10.1016/j.gfs.2020.100466>
- Rideout, K., Mah, C. L., & Minaker, L. (2015). *Food environments: An introduction for public health practice*.
- Rivera-Navarro, J., Conde, P., Díez, J., Gutiérrez-Sastre, M., González-Salgado, I., Sandín, M., Gittelsohn, J., & Franco, M. (2021). Urban environment and dietary behaviours as perceived by residents living in socioeconomically diverse neighbourhoods: A qualitative study in a mediterranean context. *Appetite*, 157. <https://doi.org/10.1016/j.appet.2020.104983>
- Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. Guilford Publications. <https://books.google.sn/books?id=0zAXBgAAQBAJ>
- Rosenstock, I. M. (2015). Historical origins of the health belief model. *Health Education Monographs*, 2(Issue 4).
- Roudsari, A. H., Vedadhir, A., Rahmani, J., & Bonab, A. M. (2019). Explaining the barriers and facilitators of ethnic and traditional food choices from the viewpoints of women. *Journal of Ethnic Foods*, 6(1). <https://doi.org/10.1186/s42779-019-0034-2>
- Rozin, P. (1999). Preadaptation and the puzzles and properties of pleasure. *Well-Being: The Foundations of Hedonic Psychology*, 109, 133.
- Santos, O., Alarcão, V., Feteira-Santos, R., Fernandes, J., Virgolino, A., Sena, C., Vieira, C. P., Gregório, M. J., Nogueira, P., Graça, P., & Costa, A. (2020). Impact of different front-of-pack nutrition labels on online food choices. *Appetite*, 154. <https://doi.org/10.1016/j.appet.2020.104795>
- Sato, P. de M., Couto, M. T., Wells, J., Cardoso, M. A., Devakumar, D., & Scagliusi, F. B. (2020). Mothers' food choices and consumption of ultra-processed foods in the Brazilian amazon: A grounded theory study. *Appetite*, 148. <https://doi.org/10.1016/j.appet.2020.104602>
- Sicilia, M., López, M., & Palazón, M. (2023). The combined effect of front-of-package labels and influencer recommendations on food choice decisions. *Appetite*, 191. <https://doi.org/10.1016/j.appet.2023.107074>
- Sim, J. (1998). Collecting and analysing qualitative data: issues raised by the focus group. *Journal of advanced nursing*, 28(2), 345–352. <https://doi.org/10.1046/j.1365-2648.1998.00692.x>
- Sobal, J., & Bisogni, C. A. (2009). Constructing food choice decisions. *Annals of Behavioral Medicine*, 38(SUPPL). <https://doi.org/10.1007/s12160-009-9124-5>
- Sobal, J., Bisogni, C. A., Devine, C. M., & Jastran, M. (2006). *A conceptual model of the food choice process over the life course*. CABI. <https://doi.org/10.1079/9780851990323.0001>
- Sørensen, L. B., Møller, P., Flint, A., Martens, M., & Raben, A. (2003). Effect of sensory perception of foods on appetite and food intake: A review of studies on humans. *International Journal of Obesity*, 27(10), 1152–1166. <https://doi.org/10.1038/sj.ijo.0802391>
- Steptoe, A., Pollard, T. M., & Wardle, J. (1995). *Development of a measure of the motives underlying the selection of food: The food choice questionnaire* (Vol. 25).
- Stokes-Walters, R., Fofana, M. L., Songbono, J. L., Barry, A. O., Diallo, S., Nordhagen, S., Zhang, L. X., Klemm, R. D., & Winch, P. J. (2021). "If you don't find anything, you can't eat" – Mining livelihoods and income, gender roles, and food choices in northern Guinea. *Resources Policy*, 70. <https://doi.org/10.1016/j.resourpol.2020.101939>
- Stone, R. A., Brown, A., Douglas, F., Green, M. A., Hunter, E., Lonnie, M., Johnstone, A. M., & Hardman, C. A. (2024). The impact of the cost of living crisis and food insecurity on food purchasing behaviours and food preparation practices in people living with obesity. *Appetite*, 196. <https://doi.org/10.1016/j.appet.2024.107255>
- Thakwala, C., Flax, V. L., Phuka, J. C., Garcia, H., & Jaacks, L. M. (2020). Drivers of food consumption among overweight mother-child dyads in Malawi. *PLoS One*, 15(12 December). <https://doi.org/10.1371/journal.pone.0243721>
- Tibère, L., Poulain, J.-P., Fischler, C., & Bricas, N. (2023). *Manger à Bamako (Mali) : entre besoins et aspirations Retour sur les résultats d'une enquête sociologique de 2013 Eating in Bamako (Mali): between needs and aspirations. A review of the results of a 2013 sociological survey*.
- Tine, J. A. D., Niang, K., Faye, A., & Dia, A. T. (2018). Assessment of women's dietary diversity in southern Senegal. *Food and Nutrition Sciences*, 9(10), 1192–1205. <https://doi.org/10.4236/fns.2018.910086>
- Tooez, J. A. (2020). *Estimating Usual Intakes from Dietary Surveys: Methodologic Challenges, Analysis Approaches, and Recommendations for Low-and Middle-Income Countries Intake.org APPROACHES TO ESTIMATING EPISODICALLY CONSUMED FOODS IN DIETARY SURVEYS*. <https://www.intake.org/sites/default/files/2020-01/Intake-Epi-sodic-Foods-Tooez-Jan2020.pdf>
- Tugume, P., Mustafa, A. S., Walusansa, A., Ojele, S., Nyachwo, E. B., Muhumuza, E., Nampeera, M., Kabbale, F., & Ssenku, J. E. (2024). Unravelling taboos and cultural beliefs associated with hidden hunger among pregnant and breast-feeding women in Buyende district Eastern Uganda. *Journal of Ethnobiology and Ethnomedicine*, 20(1). <https://doi.org/10.1186/s13002-024-00682-z>
- Valizadeh, P., & Ng, S. W. (2024). Promoting healthier purchases: Ultraprocessed food taxes and minimally processed foods subsidies for the low income. *American Journal of Preventive Medicine*, 67(1), 3–14. <https://doi.org/10.1016/j.amepre.2024.02.019>
- Vilar-Compte, M., Burrola-Méndez, S., Lozano-Marrufo, A., Ferré-Eguiluz, I., Flores, D., Gaitán-Rossi, P., Teruel, G., & Pérez-Escamilla, R. (2021). Urban poverty and nutrition challenges associated with accessibility to a healthy diet: A global systematic literature review. *International Journal for Equity in Health*, 20(1). <https://doi.org/10.1186/s12939-020-01330-0>. BioMed Central Ltd.
- Westbury, S., Oyebo, O., van Rens, T., & Barber, T. M. (2023). Obesity stigma: Causes, consequences, and potential solutions. *Current Obesity Reports*, 12(1), 10–23. <https://doi.org/10.1007/s13679-023-00495-3>. Springer.
- Winter Falk, L., Bisogni, C. A., & Sobal, J. (1996). Food choice processes of older adults: A qualitative investigation. *Journal of Nutrition Education and Behavior*, 28(5), 257–265. [https://doi.org/10.1016/s0022-3182\(96\)70098-5](https://doi.org/10.1016/s0022-3182(96)70098-5)

- World Health Organization. (2018). Noncommunicable diseases country profile: Senegal. https://cdn.who.int/media/docs/default-source/country-profiles/ncds/sen_en.pdf?download=true&sfvrsn=da5049ad_38&utm_source=chatgpt.com.
- World Health Organization. (2022). Monitoring progress on noncommunicable diseases 2022. In *World health organization*. <https://www.who.int/publications/i/item/9789240047761>.
- Zembe-Mkabile, W., Sanders, D., Ramokolo, V., & Doherty, T. (2022). 'I know what I should be feeding my child': Foodways of primary caregivers of child support grant recipients in South Africa. *Global Health Action*, 15(1). <https://doi.org/10.1080/16549716.2021.2014045>
- Zimmerman, F. J., & Shimoga, S. V. (2014). The effects of food advertising and cognitive load on food choices. *BMC Public Health*, 14(1). <https://doi.org/10.1186/1471-2458-14-342>