

ANALYSIS OF SCHOOL SNACK-VENDING STAKEHOLDERS:
IN CONTRIBUTING TO BETTER NUTRITION FOR SCHOOLCHILDREN
IN RURAL INDONESIA

A Thesis

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ABSTRACT

Background

Indonesia ranks the fifth in the world by the number of undernourished people (million) after India, China, Pakistan and Ethiopia (FAO, 2015). The number has been high due to large population base. In the past decade, significant improvement in reducing the undernourished rate has been achieved. However, the improved statistics only represent a snapshot of the country's overall performance. The figure does not account for differences in undernutrition between the urban and rural area. As emphasised in the World Health Organisation (2010) and the World Bank (2013)'s reports, malnutrition rate among rural children in Indonesia remains relatively unchanged, despite the income per capita in the rural area has grown 5 folds in the past decade. Research which kept track of food recall at consistent intervals and conducted anthropometry in children age 1-12 years in a rural village in West Java, Indonesia shows that the stunting and underweight rate is more prevalent among the children who consume more snacks than those who consume less snacks (Sekiyama et al, 2012). Thus, snack foods consumption can be accounted for poor nutrition of rural children.

Nonetheless, little is known about the snack vendors despite being the key food providers to children. In light of limited literatures exploring the school snack vendors in developing countries, this research aims to identify the factors influencing the snack vendors' decision-making to understand what motivates the vendors to use low-cost ingredients and to examine the potential for snack vendors to use the more nutritious ingredients. This research seeks to contribute to better design the nutrition intervention targeting to change the school snack vendors' behaviour for the purpose of improving nutrition among schoolchildren in rural Indonesia context.

Methods

One intervention study and one follow-up study were conducted in August and November 2017 in Sukajadi and Sukajaya villages, West Java, Indonesia. Data collection process includes the nutrition intervention on school snack vendors as part of GFE Indonesia; whereby the vendors attended the nutrition session, followed by an assignment to create the healthier snacks, 2-day selling trials and evaluation. The follow-up study tracked the continuance of selling those healthy snacks, including interviewing the children, the parents and the teachers.

In order to understand how the vendors' decisions are influenced by the behaviour of other stakeholders, current interactions among stakeholders was examined using stakeholder analysis method. Snack Mapping adopted by FAO (2006) was performed in order to collect data on the snack items, price, main ingredients and nutritional component in the study area. Exploration of Food Suppliers was also performed to collect data of the price of reported ingredients, and to analyse the food supply chain surrounding the snack vendors.

Results and Discussion

The majority of primary school children receive Rp 5,000 (US\$ 0.37 in 2018) as daily pocket money. Whereas most of the snacks cost Rp 1,000 (US\$ 0.07) and 2,000 (US\$ 0.15) and Rp 2,000 is the maximum price that most of the interviewed children can afford, the children therefore tend to buy 3-4 portions of snack per half-day school hours. It was observed that the children would buy the traditional, salty, vendor-made snacks with spicy taste first, followed by processed sweet snacks. This preference generates demands for these two types of snacks.

The parents, while perceiving the snacks to be of relatively low quality and low nutrients, still give certain amount of pocket money for the children to buy snacks. The basis for giving such amount is mostly affordability, although some parents give such amount upon the children's request. The interviewed parents understood 'healthy snacks' as the ones that are cleanly prepared and prefer to educate the children instead of engaging with the snack vendors and the school for improved quality of snacks.

Except for a limited involvement by one of the schools in the study area, the schools do not supervise the vendors despite the national policy mandates the schools to monitor the snack vendors. The schools will only take initiative when the children become sick after eating the snacks. Hence, 'healthy snacks' for the schools are the ones that do not make the children sick.

The parents and the schools' behaviour do not constrain the vendors' decision. However, the children's daily pocket money amount influences the snack pricing. The children's snack-buying behaviour also determines the types of snack which the vendors consider selling. Moreover, the findings reveal that certain intervened vendors are financially distressed, as their snack-vending are not profitable. The financial constraint is further aggravated for the vendors who is the only income earner of their family. Driven by these earning deficits, certain vendors are strongly reluctant to change their ingredients to the healthier ones. Some vendors, in contrast, change to the more profitable type of snacks.

One lesson learned from the Intervention is that it is still possible for the snack vendors to add more nutrients to their snack while maintaining the profit. This lesson should be replicated to encourage the school snack vendors to sell healthy snacks.

Conclusion

This research identifies the factors affecting the snack vendors' decision in choosing the types of snacks and the types of ingredients. They are the vendors' financial constraints, the price cap or affordability, and the children's preference. Vendors have easy access to both nutritious and non-nutritious ingredients. However, the vendors are not incentivised to use nutritious ingredients, as those 'healthy' ingredients are costlier, not available all year-round, require more preparation and have short shelflife. Consequently, the vendors' options for ingredients turn towards processed products and artificial food additives, as using those will yield more profits.

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I would like to express my gratitude to my advisor, Hiekata sensei, who guided me; the friends at Hiekata Lab, who showed that hard work conquers all; to Matsuda sensei and the Research Institute for Human and Nature in Kyoto who supported funds for conducting the fieldwork, and to Sekiyama sensei, your contribution and experiences has made this research possible.

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A big thank to Huma and Helen, who gave permission to use the content of GFE Indonesia as part of this research. Working with you both was the most fun time in the world. Lastly, I am forever grateful to my host mother, *Chachan*, who loves me unconditionally, and who enlightened me that *Sake* can be soul-lifting when needed. Without her unwavering support throughout this enduring, I would not have made it to graduation.

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1 INTRODUCTION

1.1 Background

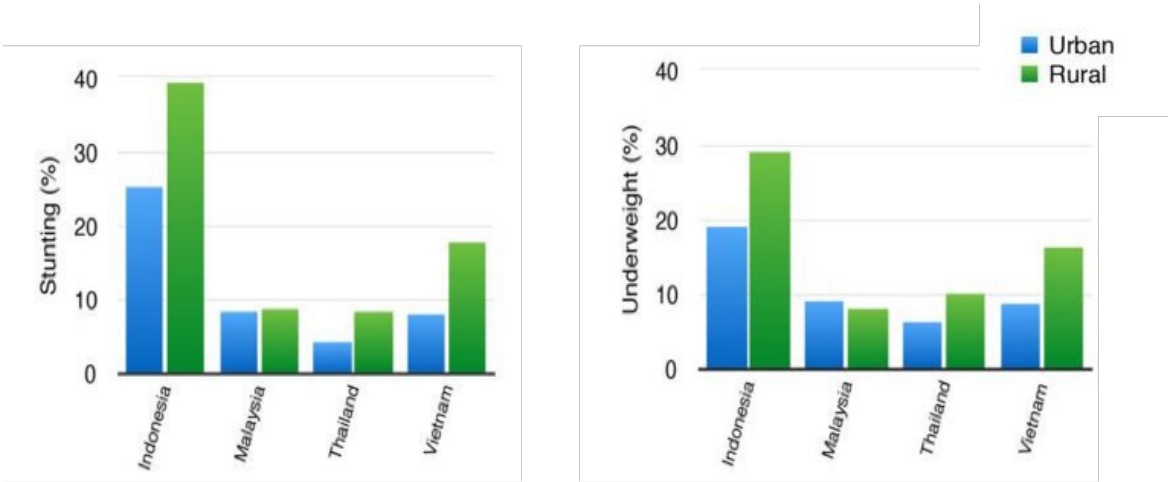
Indonesia ranks the fifth in the world by the number of undernourished people (million) after India, China, Pakistan and Ethiopia (FAO, 2015). The number has been high due to large population base. In the past decade, significant improvement in reducing the undernourished rate has been achieved. However, the improved statistics only represent a snapshot of the country's overall performance. The figure does not account for differences in undernutrition between the urban and rural area. As emphasised in the World Health Organisation (2010) and the World Bank (2013)'s reports, malnutrition rate in rural Indonesia remains relatively unchanged especially among the children. This, despite the income per capita in the rural area has grown 5 folds in the past decade.

Table 1 shows the malnutrition situation among children in Indonesia. Around one-third of school-aged children in Indonesia is stunted, between 8.9 to 13.3% is wasted, and considerable portion (9.2% - 14%) of young children are obese. The tendency of obesity becomes more alarming as children move towards adolescent age. During primary school-age (6-12y), the prevalence of malnutrition reaches as high as >50%. Figure 1 shows that stunting and underweight rates in rural area of Indonesia is much higher than in urban area. It is interesting to explore the causes of such high rate of malnutrition among the children in rural Indonesia and why it has been relatively unchanged over the years.

Table 1. Malnutrition situation among children in Indonesia

Malnutrition category	Age group				
	< 6y	6-12y	13-15y	16-18y	> 18y
Stunted	35.6	35.5	35.1	31.2	N.A.
Wasted	13.3	12.2	10.1	8.9	12.6
Obese	14	9.2	2.5	1.4	21.7

(Source: World Bank Report, 2013)



Source: frieslandcampinainstitute.asia

Figure 1. Compare malnutrition rate in urban and rural area

It is recognised that primary schools in rural Indonesia do not have canteens. However, there are snack vendors who fill the role of food providers at school. Children rely on snacks purchased from these vendors for snacking and, oftentimes, for breakfast and lunch. Research which kept track of food recall at consistent intervals and conducted anthropometry in children age 1-12 years in a rural village in West Java, Indonesia shows that the stunting and underweight rate is more prevalent among the children who consume more snacks than those who consume less snacks (Sekiyama et al, 2012). Thus, snack foods consumption can be accounted for poor nutrition of rural children.

That said, little is known about the snack vendors despite being the key food providers to children. Currently, there are limited literatures studying about the snack vendors in developing

countries. The existing ones mainly focus on food safety issues (Azanza et al, 2000; Singh et al, 2016) for concerns that the street-vended food could add the risk to foodborne disease (Imathiu, 2017). To date, there has been no study seeking to understand the dynamics of snack vendors' decision-making, such as the basis for choosing which snack to sell. The most comprehensive study conducted on school snack vendors which the author could identify so far is the FAO report (2006) conducted on Tanzania.

It is tempting to blame the school snack vendors as a major cause of rural children's poor nutrition. Nonetheless, the author asserts that there must have been justifiable reasons for the snack vendors to use low-cost ingredients. The factors influencing the snack vendors' decision-making and the potential to sell healthier snacks are the issues that this research seeks to address.

For the purpose of contributing to the existing literatures related to malnutrition in schoolchildren in rural Indonesia, the author conducted this research in the same area as the previous study – Sukajadi and Sukajaya village in West Java, Indonesia.

1.2 Research Objective

This research seeks to contribute to better design the nutrition intervention targeting to change the school snack vendors' behaviour for the purpose of improving nutrition among schoolchildren in rural Indonesia context.

1.3 Contribution of the research

Besides elaborating the school snack vendors' perspectives, the findings of this research can be used to design the intervention targeting to change the snack vendors' behaviour. Whereby the high malnutrition rate is rooted in consumption of low-nutrients snacks, the opportunity also lies in adding more nutrients to the snacks. As snack consumption accounts for a large part of the children's daily food intake, adding good nutrients to the snacks could be one effort towards improved nutrition. Nonetheless, such effort would not be possible without the snack vendors' collaboration. The intervention designed to encourage the vendors to sell healthier snacks seems promising. To understand what is needed for the vendors to sell healthier snacks would be the contribution of this research.

2 METHODS

2.1 Description of the study area

The study villages Sukajadi and Sukajaya are located in Tamansari sub-district, Bogor district, West Java. All villagers were Sudanese-speaking and 98% of them were Muslims. Villagers' predominant occupations were farming, small-scale retailers, and employees of small enterprises in the nearby towns (Sekiyama, 2012). Both Sukajadi and Sukajaya situate at the foothill of Mount Salak at approximately 400m altitude above sea level. The climate is relatively cooler than Jakarta, boasting tourists from the capital who escape the heat of the city to find the nature. The residences in both villages mainly consist of one-storey houses lying along the roadsides. One house is typically inhabited by 4-5 inhabitants. The main means of transport within the villages were public transportation called *angkot*, motorcycles, cars, and walking.

2.2 Data collection

2.2.1 Intervention study as part of GFE Indonesia

Overview of GFE Indonesia

As part of the degree fulfilment, GPSS-GLI students are required to participate in Global Field Exercise - a short trip to destinations in Japan and overseas to study about sustainability issues of the area and propose solutions. GFE Indonesia set out among the backdrop of malnutrition in schoolchildren in rural Indonesia. Lead by Project Associate Professor Makiko Sekiyama,

who is specialised in this topic, 3 students (Author, Huma M. and Helen Y.) were selected to participate. Initial preparations started in May 2017, with the field exercise scheduled from 5-12 August 2017 to Bogor city, West Java, Indonesia. GFE Indonesia was a collaboration between GPSS-GLI and Department of Community Nutrition, Bogor Agricultural University (IPB). Our local counterpart kindly facilitated in selecting target schools in the targeted villages, recruiting student research assistants and making the necessary local arrangements before our GPSS team's arrival. Preparation meetings with IPB students were done before departure, as well as upon arrival in Bogor.

During literature review process of GFE Indonesia, it was found that many intervention studies on malnutrition have been conducted on children, teachers and parents, yet limited interventions were conducted on the snack vendors despite being the key food providers to the children, as their snacks constitute a major part of children's daily food intake. Therefore, GFE Indonesia members resolved to involve schoolchildren and the snack vendors as targets of intervention. The objective was to find out whether the interventions conducted on either the children or the vendors, which one are more effective in terms of promoting the consumption of healthy snacks.

Intervention design

The intervention of Nutrition Education and Menu Creation was conducted targeting three schools (hereinafter "school A, B, and C") in Sukajadi and Sukajaya village in August 2017. The subjects of the intervention were all the fourth-grade students in the three schools and vendors stationed in the three schools.

To assess the effect of the intervention, pre-test and post-test were conducted before and after the intervention.

Pre-test

Before the session, all the participants (both vendors and children in school A, B, and C) did a Pre-test to measure the level of existing nutrition knowledge. For children, questions on familiarity with the Food Pyramid and the 'anticipated healthy snacks' were asked using structured questionnaire. For vendors, questions on nutrition knowledge and unhealthy ingredients were asked using structured questionnaire¹.

Nutrition Education session

Nutrition Education sessions were given to both children and vendors in school A, to vendors only in school B, whereas school C was preserved as Control case where no intervention at all was conducted. Participating vendors from school A and B were recruited by the IPB staffs and students on a voluntary basis. In total, 13 vendors accepted the invitation, of which 7 came from School A and 6 from School B. The recruited vendors were intended to represent the general population of vendors in 3 schools as much as possible. Therefore, the recruited vendors comprised of males and females, are of mobile and stationary-typed, sell homemade and processed snacks.

¹ For this research, the comparison of *Pre-* and *Post-*test results was out of scope. Hence the questionnaires and the results were not included in Annex.

For children, nutrition education including group activity to design the healthy snacks were performed using ingredient cards and drawing tools. After the education session, children in school A were asked to work in group to create their anticipated healthy snack and to evaluate. Each group was supervised by a student from Department of Community Nutrition. For vendors, nutrition education including evaluation of old and new snacks' ingredients were performed. The vendors were paired with Community Nutrition students who advised the vendors about the health effects of the ingredients.

In the Nutrition Education session for both children and vendors, the authors emphasized on the knowledge of essential macro and micro nutrients, while vendors' session included additional information on unhealthy ingredients, namely fat, sugar and salt. It was highlighted that vendors should reduce the use of these 3 unhealthy elements as they affect children's health. The aim of education session catered for vendors in such way was to establish the link that the ingredients that vendors use in their snack consequently produce effects on the children's health.

Menu Creation session

Participating vendors in school A and B, after the education session, evaluated the ingredients of their current snack whether or not the ingredients used are healthy. They were assigned to create a healthier snack either by changing the ingredients of their current snack to healthier ones or to come up with a new healthier snack entirely. Each was paired with a nutrition student for advice. This Menu Creation assignment was followed by the cooking session where vendors had to cook both old and new snacks and evaluate the outcome, including making adjustments. Finally, vendors in school A and B were asked to sell these old and new snacks for 2 days to gauge the children's feedback. During the 2 selling days, the members observed the impact of

nutrition education in intervened children in school A and compare with non-intervened children in school B.

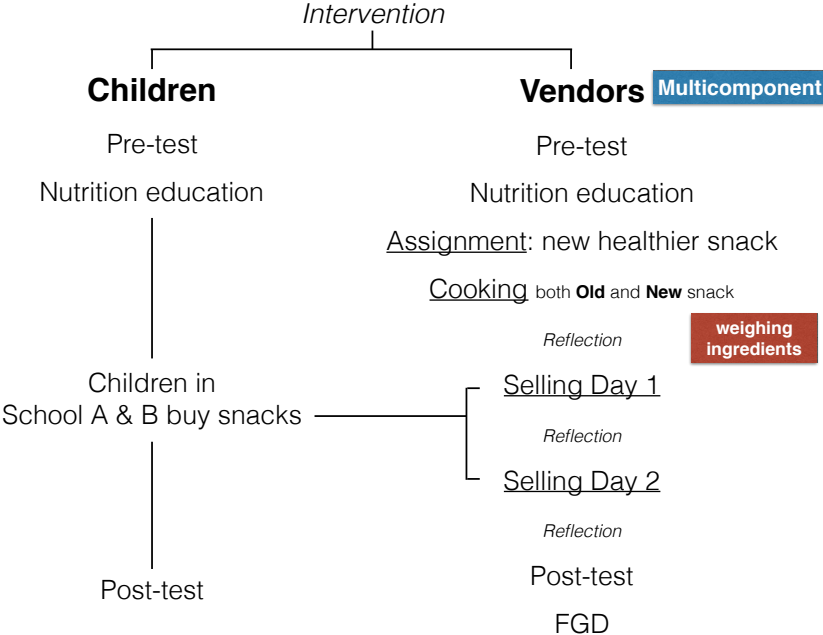


Figure 2. Intervention design

The activity relevant to this research is weighing of ingredients during the cooking session. Before cooking old and new snacks, vendors were asked to weigh every ingredient to the exact amount they use per one portion using a digital weighing scale. The students thereby had records of the ingredients that vendors used for the old and new snacks, as well as the weights. The author used this data to calculate the estimated costs of old and new snacks.

Post-test

After the 2-day selling session, post-test was conducted using the same questionnaires the authors used for the Pre-test. A focus group discussion was also conducted among participating vendors including a number of vendors from school C (Control school) to summarise the lessons learned and to share the experiences to vendors who have not participated.

2.2.2 Follow-up study: Stakeholder interview

As the research objective is to understand what factors guiding the snack vendors' decision-making, a follow-up study was carried out in November 2017 to examine the results of the Intervention. The assignment to create the healthier snack plus 2-day selling session conducted in August 2017 provided an opportunity to explore the vendors' decision of what to sell, and whether or not to continue to sell those healthy snacks. The 13 intervened vendors are the main target of the follow-up study. In addition, equal number of non-intervened vendors (hereinafter "control vendors") was also followed to compare the differences which the Intervention has made in terms of to what extent the nutritional knowledge plays a role in selling healthy snacks. The interview questions for both groups of vendors consist of inquiries on socio-economic backgrounds (Annex 5-7), ingredients supply and the factors affecting the continuance of selling healthy snacks for the intervened vendors (Annex 5-6). For the purpose of elaborating the factors influencing their decision-making, the intervened vendors were divided into 2 groups: 'Continue vendors' for those who continue to sell the healthy snacks at the time of the follow-up study; and 'Discontinue vendors' for those who stopped selling after the Intervention. The sample size of interview respondents for snack vendors was initially 26.

Other key stakeholders - children, parents, and school - were also the target of this follow-up study. The snack-buying behaviour of the children (Annex 8), the behaviour, attitude and awareness of the parents (Annex 9) and the involvement of the schools (Annex 10) were interviewed using structured questionnaire, as they were the external factors which contribute the vendors' decision. Socio-demographic factors were also interviewed for these stakeholders. The sample size for the children was 30 per each school, considering the number of students in the schools and feasibility. The sample size for parents was 10 per each school, considering

feasibility. And one school principal from each school was interviewed to represent the school's perspective.

Interviews were conducted in Sundanese by the research assistants. Data entry was done manually on the spreadsheets.

2.3 Data analysis

2.3.1 Stakeholder analysis

In order to understand how the vendors' decisions are influenced by the behaviour of other stakeholders, current interactions among stakeholders was examined using stakeholder analysis method.

Stakeholder analysis begins with identifying the persons involving in the issue and are affected by the acts of one another ('the stakeholders'); their relationship and needs, and the options to achieve those needs (NASA, 2014). The stakeholder analysis serves to narrow down the focus of the follow-up study as to who should be included as the interview respondents, and to determine the sample size. Understanding the needs and barriers of each stakeholders beforehand were also useful in designing the relevant interview questions.

2.3.2 Snack Mapping

FAO applied Snack Mapping Method for the purpose of gaining information of all the snacks available for children's consumption (FAO and Sokoine University, 2006). It collected data on the snack items, price per unit, sales volume per day of each item, main ingredients, and nutritional component to describe the nutrition landscape to which the snacks consumption

contributes, as well as to gauge the average daily sale of the vendors. Snack Mapping was applied to this research by having the research assistants inquire about the snack details from the vendors in 3 schools during the follow-up study. The intervened and control vendors were included. In total, the data of 144 snacks from 28 vendors were collected.

2.3.3 Exploration of Food Suppliers

This research traces the place from where the snack vendors purchased their ingredients in order to collect data on the price of every ingredient which vendors used. The list of snack ingredients used by the intervened was obtained through the weighing activity during the Intervention. The list of ingredients used by control vendors was obtain through inquiries during the interview. For packaged snacks sold by stationary vendors, the research assistants took photographs of every item. The photographs were used to identify the snacks at the suppliers' shops.

By using these data, the author calculated the snack's estimate cost and profit, and examined the food supply chain surrounding the school snack vendors that determines the choices of ingredients available for use.

2.4 Ethics declaration

The author received permission to conduct the Intervention in August 2017 and the follow-up study in November 2017 from the Foreign Research Permit Secretariat, Ministry of Research, Technology and Higher Education of Indonesia. In conducting interview, the 151 respondents were fully informed about the research purpose and the author received their consents thereof.

3 RESULTS

3.1 Result of stakeholder analysis

The hypothesis is that primary school-age children in rural Indonesia are malnourished due to consuming low-nutrients snacks sold by the snack vendors. Hence, 4 key stakeholders were identified: children, vendors, parents and school, with 2 additional stakeholders whose roles are indirectly related to the issue, namely the food suppliers and the Government.

The known relationships among stakeholders and their needs can be described as follows:

Children buy snacks from vendors.

[Children need food.]

Vendors sell snacks on school ground.

[Vendors need money.]

School provides education to children.

[School needs financial support, and is mandated by the Government to provide education to children.]

Parents give money to children to buy snacks and pay the tuition fee to the school.

[Parents need to take care of children and ensure that children receive education.]

Vendors buy ingredients from food suppliers.

[Food suppliers need money.]

Government impose policies for the school to follow.

[Government needs educated citizens.]

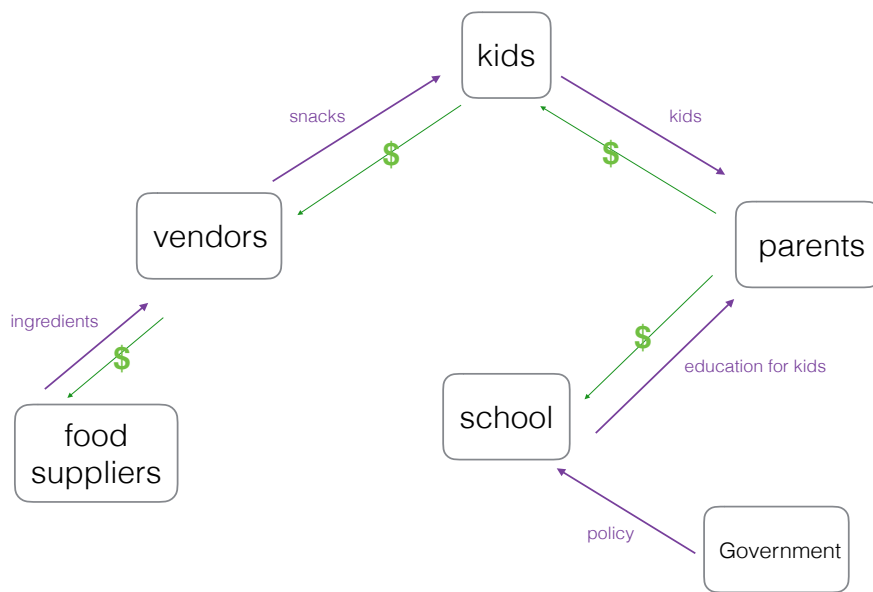


Figure 3. Stakeholders relationship

Nonetheless, before the follow-up study, it was unknown whether the school receives any kinds of benefit from the vendors in letting vendors selling snacks on the school ground. It was also unknown whether there were any kinds of control imposed upon vendors by either stakeholder. The findings from the follow-up study regarding stakeholders' relationship will be analysed in Discussion section.

3.2 Result of follow-up study: interview sample size

The follow-up study was conducted during 13-17 November 2017 in Sukajadi and Sukajaya villages, West Java province, Indonesia, where the 3 schools are located. Five student research assistants from Department of Community Nutrition, Bogor Agricultural University assisted in conducting interview with the respondents. A full-day preparation meeting was conducted prior to the follow-up study in order to explain the objective of the research, the tasks of research assistants, and every question in each questionnaire. The research assistants carried out the interviews while the author observed and kept records. At the end of each day's task, a meeting

was conducted among the author and the research assistants to go through the interview answers to ensure that no detail was committed, as the interview was conducted in local language while the recorded answers and questionnaire papers were in English.

Thirteen intervened vendors of GFE Indonesia were the target of follow-up study. Additionally, 16 randomly-selected non-intervened vendors (“control vendors”) were also included for the purpose of gaining better understandings about vendors’ socio-economic conditions, and to identify the differences the Intervention has made. It is also important to know how many out of the 13 intervened vendors still continue to sell the new healthy snacks 3 months after the Intervention, as their choice serves to reveal the factors influencing their decision-making. Hence, the questionnaire designated to vendors consist of 3 categories: vendors who continue to sell the new healthy snacks (“Continue vendors”), vendors who stop selling the new snacks (“Discontinue vendors”), and Control vendors. As for children, 30 randomly-selected children were drawn from each of the 3 schools. In selecting the children, the research assistants were requested to consider the gender balance and children’s Grades in order to make the sample size reflect the actual population as much as possible. As for parents, 10 parents from each school are randomly-selected from the parents who were waiting to pick up their children in the school’s vicinity. Lastly, 1 School Principal or school representative from each of the 3 schools was interviewed.

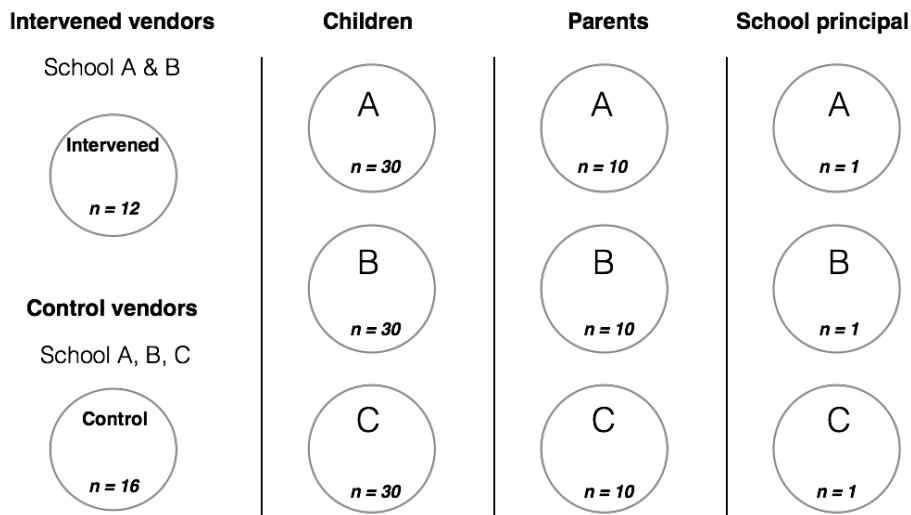


Figure 4. Interview sample size

3.3 Characteristics of the surveyed schools

The 3 surveyed schools are the public primary schools of their traditional administrative unit (“*Gadog*” - an administrative unit equivalent to community). The first school, hereinafter referred to as “school A”, belongs to *Gadog* 3 of Sukajadi township; the second school, hereinafter referred to as “school B”, belongs to *Gadog* 2; and the third school, hereinafter referred to as “school C”, belongs to *Gadog* 1. Each is located between 5-10km from one another, with school A situated in the furthest location up the foothill of Mount Salak.

The number of students in each school are: school A - 328 students, with 164 boys and 164 girls; school B - 575 students, with 275 boys and 300 girls; school C - 661 students, with 334 boys and 327 girls. Each school operates Grade 1 to Grade 6. The students’ age ranges between 6-12 years old. Every school operates half day (usually from 7.30 to 12.00, depending on the Grade), Monday to Saturday. The subjects taught are: Mathematics, Science, Social studies, National studies, Islamic studies, Indonesian language, Sundanese language, English language,

Arts, and Physical education. The class duration for each subject is between 35 minutes to 1.5 hour. In between the school hours, there is 30-minute morning break for each Grade in which the students are released at the respective time. Hence, the morning break duration for a school usually starts from 9.30 and lasts until 10.45. It is during this morning break that students rush to the snack vendors to buy snacks, as will be shown in the results from the children's survey.

Vendors sell the snacks inside and outside school grounds. Each school has an informally-designated area inside the school for snack vendors, and vendors generally gather in these areas. It was observed that in each school, there is at least one permanent-structured snack stall. These permanent stalls are run the middle-age females who also work as school keepers. Besides the permanent stalls, there are also temporary stalls, mobile vendors, and a number of snack shops located in the school's vicinity. Throughout the school's operating hours, the school gate is not closed. Every visitor is free to enter and exit, including parents who await to pick up their children, mobile vendors who roam in different schools, and children who rush out to buy snacks from vendors outside the school.

3.4 VENDORS

3.4.1 General observation on snack vendors

There are 2 types of snack-vending: mobile and stationary. Mobile vendors are individual vendors who sell snacks on the motorcycle which has been equipped with small cooking facilities, or vendors who carry all their snacks and tools and move from school to school on foot. Stationary vendors, on the other hand, have stationary stalls and sell at only one location. Mobile vendors are mostly male, whereas stationary vendors are mostly female or couples. The difference in type of snack-vending plays a great role in determining which snack to sell. Mobile vendors, since they are constrained by the fixed cooking facilities or the tools, can sell only one kind of snack, while the stationary stalls can sell as many kinds of snacks ranging from cooked meal to ice drinks since the vendors has the advantages of more space and not having to move constantly. In terms of cooking fuels, mobile vendors equip their motorcycle with a small gas tank or charcoal stove, while stationary vendors use portable gas stoves. Some stationary stalls have access to electricity, but none has access to running water.

Mobile vendors, as they are limited to selling one kind of snack, sell different snacks and none of them was found to sell similar kinds of snacks in one school. The kinds of snacks sold by mobile vendors are 2 categories: salty and sweet. The salty ones are mainly traditional snacks which vendors cook on the spot, i.e. at the cooking facility on their motorcycle. The sweet snacks sold by mobile vendors mostly contain ice, hence the vendors of these types also carry large ice containers. Stationary stalls, on the other hand, were found to sell similar items even in the stalls situated next to one another. Typically, one stall sells both salty and sweet snacks. Every stall has cooked snacks, which vendors cooked and brought from home, cook-on-the-

spot snacks, packaged snacks, packaged drinks and vendor-made drinks. The most popular item which every stationary stall sells was instant noodle, which vendors sell by pouring hot water and serve in plastic cups. One stall in 3 schools was found to sell fresh seasonal fruits, although as a small portion among her many other snacks. The snack price in both types of vendors is mostly Rp 1,000 - 2,000.

School A has the highest number of snack vendors despite being the smallest among the 3 surveyed schools. This is probably due to the fact that across the road from School A is a community day care centre. Parents gather along the road in front of the school, as well as the day care, while awaiting to pick up their children. Hence, it presents an opportunity for vendors to sell to wider customers when locating in school A's vicinity. In addition, the day care would finish short after school A's morning break. Therefore, vendors in school A area has longer time to sell besides only during the morning break as would be the case for school B and C. It was also observed that children in school A consumed more snack portions per person than children in School B and C.

School B has the second highest number of vendors. It was observed that the classrooms of lower Grades in School B are located near the school's back yard, which was the area designated for mobile snack vendors. Thus, students of lower Grades mainly buy snack from these vendors. On the other hand, the classrooms of higher Grades (Grade 5-6) are located near the permanent stall. Therefore, the author observed that customers of this stall are mainly students of higher Grades. The snacks sold at this stall are also catered for older children, such as having spicy taste and more varieties. Opposite school B are local grocery shops which also sell snacks.

School C has the fewest number of vendors despite being the largest among the surveyed schools. There is no designated area for mobile snack vendors inside the school. Mobile vendors, when selling at School C, lined up on the road in front of the school. However, inside school C, there are 2 permanent stalls which sell various types of snacks and children mainly buy snacks from these 2 stalls. Based on interview, mobile vendors know by their experience about the morning break time of each school. They would roam from school to school, taking advantage of the overlapping timing, to maximise their sale opportunity. It was common that we find some mobile vendor selling in all the 3 surveyed schools

Remarks:

For the purpose of this research, the surveyed vendors are categorised into ‘intervened vendors’, which refers to the participating vendors during GFE Indonesia Intervention; and ‘control vendors’ which refers to vendors who had not participated in GFE Indonesia Intervention. The distinction was made because the intervention served as the opportunity to understand the vendors’ decision-making, i.e. whether or not they continue to sell the new healthy snacks, of which the factors shall be elaborated later on. To this end, those vendors who continue to sell the new snacks are referred to as ‘Continue vendors’; those who stop selling the new snack are referred to as ‘Discontinue vendors’.

Of 13 intervened vendors, during the field survey in November 2017 the author was able to reach 12 of them, as 1 declined to be interviewed. In addition, 16 Control vendors were interviewed in order to obtain their demographic data to analyse the socio-economic conditions of snack vendors in general.

3.4.2 Vendors' demographics

All of the surveyed vendors are in their working age (21-60 years old), with slightly more proportion of males than females. Male vendors are generally younger than females with more than 90% aged between 21-50 years old, whereas 100% of female vendors aged 31-60 years old.

Table 2. Age and gender of the surveyed vendors

Age	Male					Female				
	Continue	Discontinue	Control	Total	%	Continue	Discontinue	Control	Total	%
21-30	1	0	4	5	31.25	0	0	0	0	0.00
31-40	1	1	3	5	31.25	2	1	3	6	50.00
41-50	0	1	4	5	31.25	1	2	0	3	25.00
51-60	0	0	1	1	6.25	0	2	1	3	25.00
Total	2	2	12	16	100.00	3	5	4	12	100.00

Most vendors (71.43%) are primary school-educated. It is interesting to note that some vendors who continue to sell the new snacks after GFE Indonesia Intervention have higher level of education (Lower secondary) than other groups.

Table 3. Education level of the surveyed vendors

Education level	<i>n</i>				
	Continue	Discontinue	Control	Total	%
No education	0	0	1	1	3.57
Primary	2	6	12	20	71.43
Lower secondary	3	1	1	5	17.86
Upper secondary	0	0	2	2	7.14
University	0	0	0	0	0.00
Total	5	7	16	28	100.00

3.4.3 Snack characteristics and type of vending

Mobile vendor is limited to selling only one type of snack due to the nature of being mobile. Stationary vendors generally sell all kinds of snacks, both salty and sweet. Traditional snacks refer to the snacks authentic to the locality, in this case West Java. Vendor-made snacks refer to the snack which vendors make by themselves from preparing the ingredients until cooking and serving. Processed snacks refer to the snacks which require little or almost no preparations by the vendors. They are mostly manufactured, packaged products. For example, instant noodle, instant powder drinks, candies, packaged jelly.

Table 4. Snack characteristics and type of vending of the surveyed vendors

Continue / Discontinue / Control	Vendor - School	Snack characteristics	Type of vending
Continue	Mr. U – School A	Traditional / Salty / Vendor-made	Mobile
	Mr. T – School A	Sweet / Processed	Mobile
	Ms. Aa– School B	Salty / Sweet / Vendor-made / Processed	Stationary
	Ms. Y– School B	Salty / Vendor-made	Stationary
	Ms. E – School b	Salty / Vendor-made	Mobile
Discontinue	Ms. M– School A	Traditional / Salty / Sweet / Vendor-made / Processed	Stationary
	Ms. SH – School A	Traditional / Salty / Sweet / Vendor-made / Processed	Stationary
	Ms. Aw– School A	Traditional / Salty / Vendor-made	Stationary
	Ms. Ed– School A	Traditional / Salty / Sweet / Vendor-made / Processed	Stationary
	Ms. En– School A	Traditional / Salty / Vendor-made	Stationary
	Mr. M– School B	Traditional / Salty / Vendor-made	Mobile
	Mr. H – School B	Traditional / Salty / Vendor-made	Mobile
Control	Ms. YI – School A	Traditional / Salty / Vendor-made	Stationary
	Mr. G– School A	Traditional / Salty / Vendor-made	Mobile
	Mr. D– School A	Traditional / Salty / Vendor-made	Mobile
	Ms. Am– School A	Sweet / Processed	Mobile
	Mr. RN – School A	Traditional / Salty / Vendor-made	Mobile

Mr. R– School A	Salty / Sweet / Processed	Mobile
Mr. Aj– School A	Salty / Vendor-made	Mobile
Mr. Ad– School B	Sweet / Processed	Mobile
Mr. Ac– School B	Traditional / Salty / Vendor-made	Mobile
Mr. N– School B	Traditional / Salty / Vendor-made	Mobile
Mr. B– School B	Traditional / Salty / Vendor-made	Mobile
Mr. H– School B	Sweet / Processed	Mobile
Mr. R– School C	Sweet / Processed	Mobile
Ms. O– School C	Traditional / Salty / Sweet / Vendor-made / Processed	Stationary
Ms. I – School C	Traditional / Salty / Sweet / Vendor-made / Processed	Stationary
Mr. Ad– School C	Salty / Processed	Mobile

3.4.4 Results of the Intervention: old and new snacks of intervened vendors

Of 12 intervened vendors who were interviewed, 5 continue to sell the new snacks up until 3 months after the Intervention. Their new snacks were sold at variations: by presenting as more options, by completely replacing the old snack, and as additional item to their current snacks. One male vendor, his old snack was *Papeda*, a crepe-like traditional snack. During the Intervention in August 2017, he proposed to add sausage to his snack, as he understood that by adding meaty element, children will gain more nutrition. During the fieldwork in November 2017, it was observed that this vendor has developed more options of toppings for his snack. Apart from plain *Papeda*, customers also have options of adding either sausage, fishball or meatball. The plain *Papeda* costs Rp 1,000, while *Papeda* with toppings cost Rp 2,000.

One male vendor, his old snack was *Cireng*, deep-fried flour balls coated with egg. During the Intervention, he came up with fruit jelly as his new healthier snack. Later on, it was observed that he stopped selling his old snack completely and currently selling only jelly, with condense milk but without fruits. His old snack was priced Rp 1,000, while the jelly was also priced Rp 1,000.

Two female vendors also came up with jelly drinks as their new healthier snacks, with one adding milk and one adding fruits. They both have stationary stalls selling various items. Among their main items were the instant noodles, which were their old snack. These 2 female vendors sell jelly drinks as additional items to their current stock. Jelly drinks were prepared in limited portions every day, and it was reported to be sold out every day.

One female vendor sells homemade *Siomay*, steamed dumplings. Her old snack was *Siomay* made of cabbage, potatoes and flour with no meat content. Her new snack was *Siomay* with chicken as ingredient. Originally, plain *Siomay* costs Rp 1,000 per 4 pieces. However, chicken *Siomay* costs Rp 1,000 per 3 pieces.

It is notable that 3 out of 5 vendors who continue to sell their new snacks were the ones who changed from salty cooked snacks to sweet, dessert-typed snacks which do not require cooking.

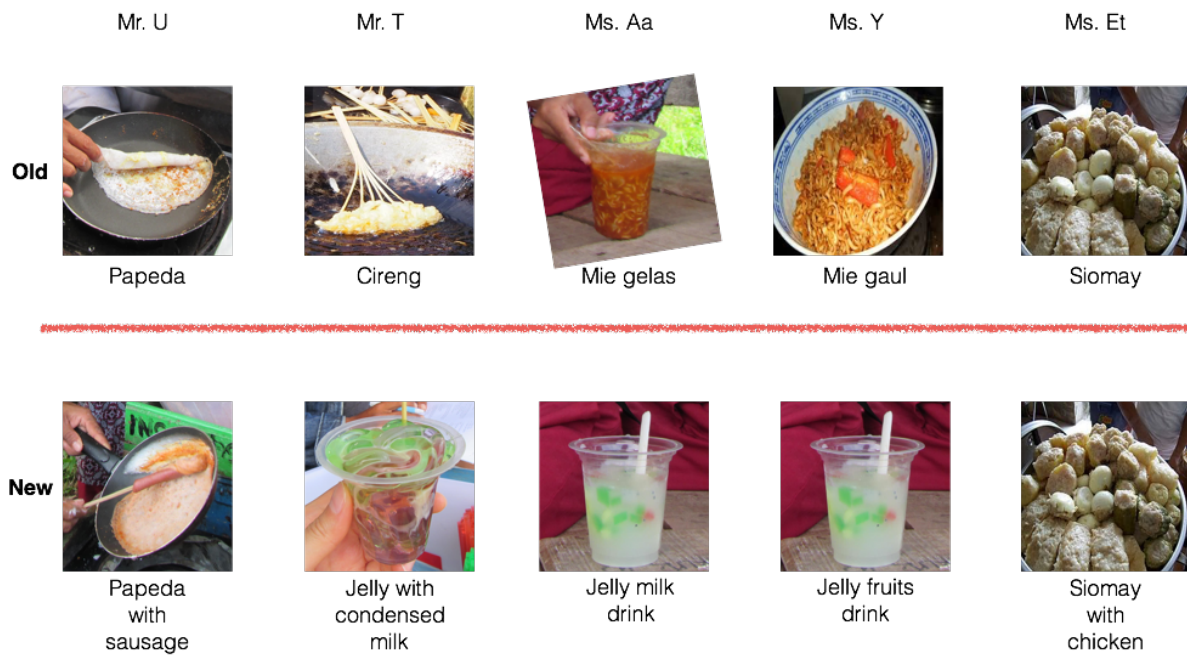


Figure 5. The old and new snacks of Continue vendors

In contrast, of 12 intervened vendors who were interviewed, 7 stopped selling the new snacks at the time of field survey in November 2017, with one stopped as soon as 2 days after the Intervention while some kept selling up until 2 months after the Intervention. It is notable that all of those Discontinue vendors, except one, were the older age vendors with long years of experience in selling snacks. The characteristics of their new snacks are mainly the addition of extra healthy ingredient to their old ones. For instance, by adding egg, cheese, shrimp powder and carrots. Or, by changing the current unhealthy ingredient to the healthier one, such as using lime instead of vinegar. Or, changing to something healthier yet more costly or required more preparation. The children's feedback for their new snacks ranges from not interested at all to positive feedback at first but declining later on.

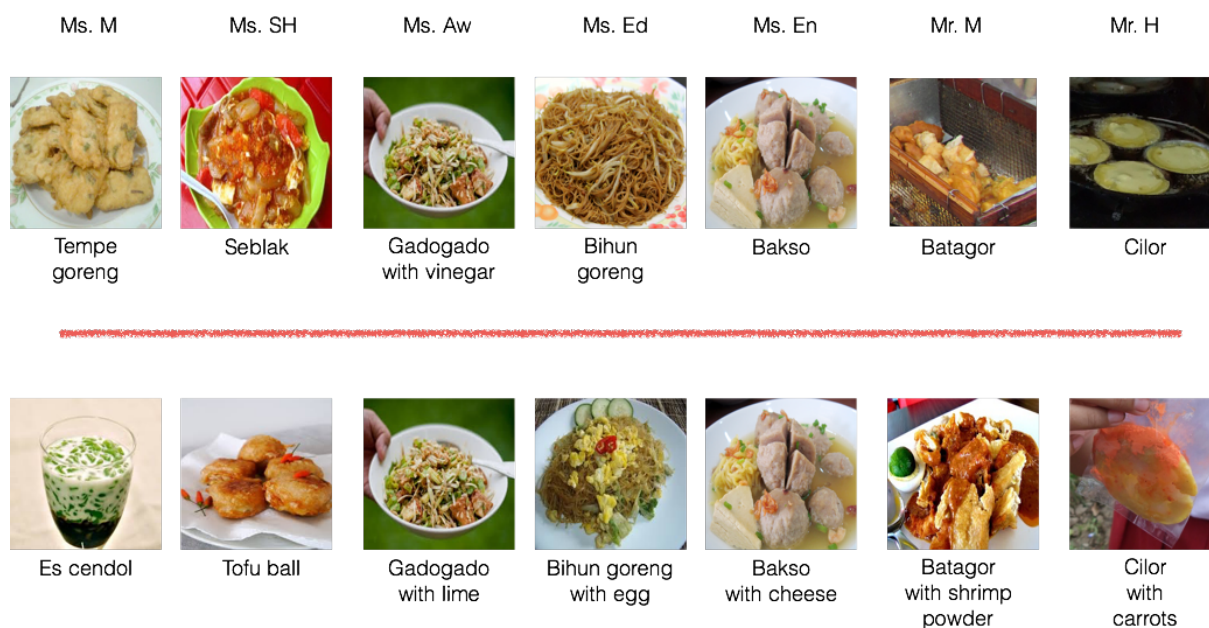


Figure 6. The old and new snacks of Discontinue vendors

3.4.5 Nutrition analysis

The characteristics of Discontinue vendors' new snacks were mainly by adding nutritious ingredients, such as egg, cheese, shrimp powder and carrots, or by replacing with healthier ingredient, such as using lime juice instead of vinegar, or by changing to the new type of snack completely. Consequently, it was evident that the new snacks of Discontinue vendors had improved nutrient content compared to their old snacks. In contrast, the new snacks of 3 Continue vendors were changed from macro nutrient-rich type to jelly-based, thereby reducing nutrient content significantly. Except for 2 Continue vendors whose new snacks had improved nutrient content through adding sausage and chicken meat. As a result, the new snacks of Continue vendors had lower nutrient content than the new snacks of Discontinue vendors (Figure 7).

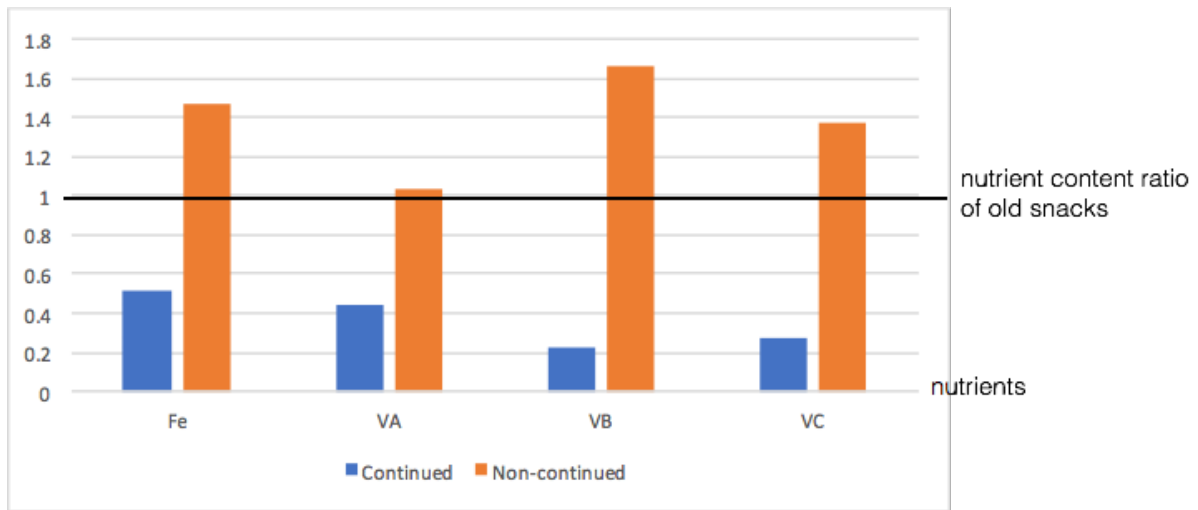


Figure 7. Compare nutrient content of old and new snacks

It was also observed that, on average, the new snacks of both Continue and Discontinue vendors contained lower fat and higher protein per energy compared to their old snacks (Figure 8).



Figure 8. Macro nutrient per energy ratio of old and new snacks

3.4.6 Cost and profit analysis

The author was able to obtain data on ingredient costs of the intervened vendors through the weighing activity during cooking session of the Intervention; wherein the ingredients for both old and new snacks of every vendor were prepared, and vendors weighed the exact amount of ingredients used in one portion of both old and new snacks. Hence, the author had data on ingredients and amount. Later through Exploration of Food Suppliers method, the author gathered data on ingredients price. Thereby, it was able to calculate the ingredient cost and the profit per portion of the old and new snack. Nonetheless, this cost is only a rough estimation as it does not include cooking fuels and the vendor's labour cost. Yet the ingredient cost alone is sufficient to justify the analysis on cost, as the ingredient cost constitute the largest part of the overall cost.

In terms of cost-nutrition analysis, as discussed above, the new snacks of majority of Discontinue vendors had improved macro nutrient content. Nonetheless, they stopped selling soon after the Intervention. Further cost and profit analysis would serve to understand the underlying reason for their decision to stop selling those new snacks despite being healthier. As for Continue vendors, one notable case of increased nutrient content together with increased profit (*Papeda* vendor) also served to understand why this particular vendor continued to sell his new snack. His new snack had Protein per energy ratio increased nearly 7 folds by adding sausage as toppings (Figure 9).

The majority of Continue vendors (3 out of 5) had their ingredient costs significantly decrease, with one vendors had their ingredient costs increase sharply and one with slight change in cost.

In contrast, for every of the Discontinue vendors, the ingredient costs of their new snack increase significantly compared to the ingredient costs of their old snacks (Figure 10).

The majority of Continue vendors (3 out of 5) had their profit of the new snacks increased, with one notable vendor who change from incurring loss in selling the old snack to earning much higher profit in selling the new snack. One Continue vendor, despite his ingredient cost of the new snack increased 3 folds, turns profitable in selling the new snack. That is because he increased the price. Two Continue vendors see their profit of the new snacks slightly decreased as compared to the old snacks. Yet they reported to earn more money in selling their new snacks, because the new snacks were the additional items on top of their current items and by having new items it generated more sales.

In contrast, every Discontinue vendor see the profit of their new snacks decreased as compared to the old snacks, with one notable vendor who turned from being profitable in selling the old snack to incurring loss by adding one extra ingredient (Figure 11).

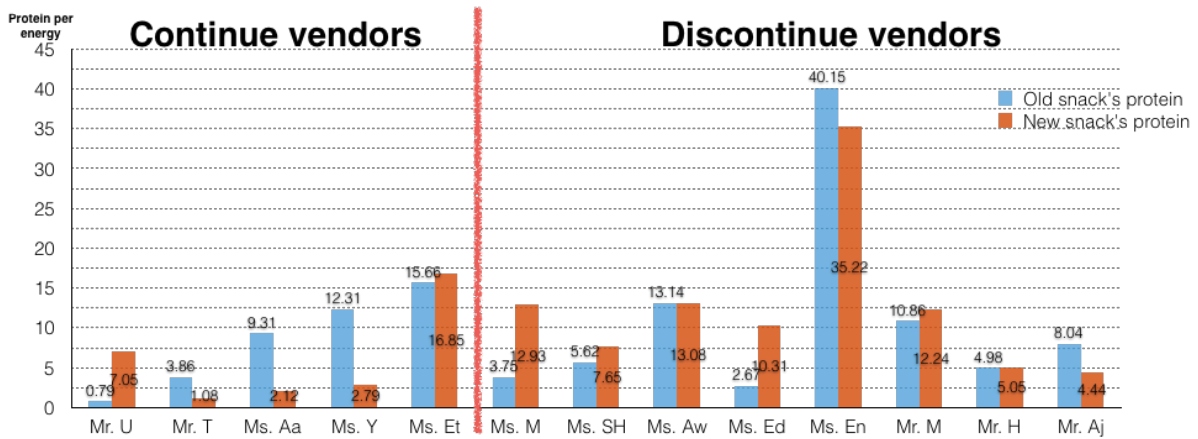


Figure 9. Compare Protein per energy ratio of old and new snacks

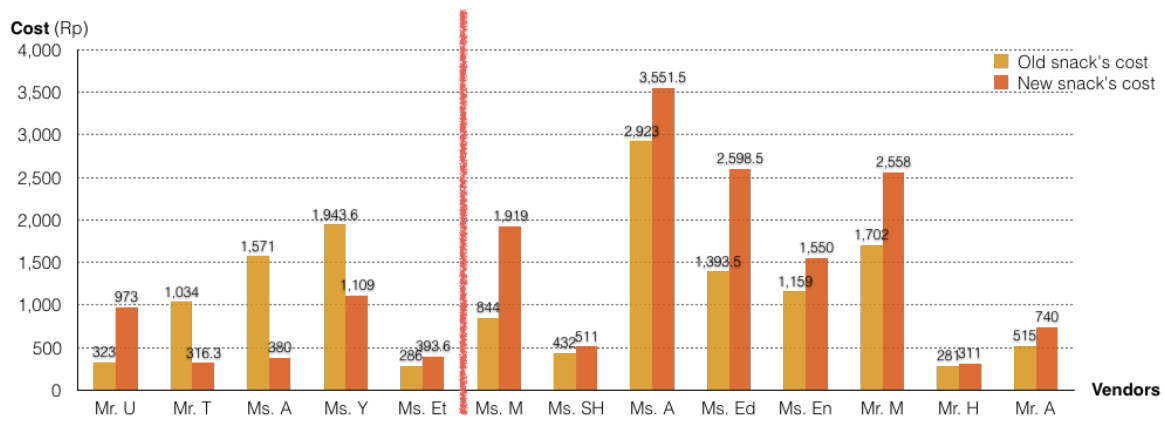


Figure 10. Compare the cost per portion of old and new snacks

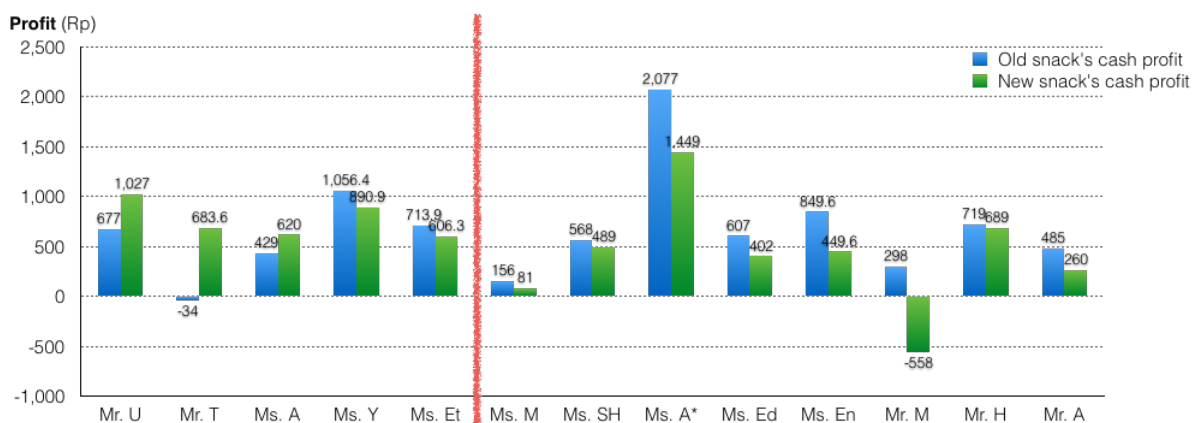


Figure 11. Compare the profit per portion of Old and New snacks

3.4.7 Vendors' financial circumstances

The author obtained data on average daily revenue and daily expense excluding ingredient cost of the intervened vendors through interview. Through profit calculation, the author was able to identify the profit margin of the old snack (in % of the selling price). Hence, the author was able to calculate the estimate daily income from selling the old snacks of all intervened vendors. Daily income deducted by daily expense excluding ingredient cost is the net daily income of the vendors. The net daily income times 20 (as vendors sell snacks only on weekdays) is the estimate net monthly income.

The result shows that some of the intervened vendors (highlighted in red) are financially distressed, as monthly-wise the income generated from snack vending do not meet the expenses. In case of stationary-stall vendors, the loss incurred by selling the old snack can be mitigated by selling other snack items. However, in case of mobile vendors who sell only one item, there is no way to mitigate the loss. One mobile vendor, the ingredient cost of his old snack alone exceeded the selling price, let alone the cost of cooking fuels and his labour. This means that he incurs loss on every piece of the old snack he sold. And the more he operated, the more he lost money. He was the vendor who completely stopped selling his old snack and currently sells jelly which is much more profitable.

The financial constraints are more aggravated when the vendors are the only income earner of the family. From interview, some vendors have other sources of income, such as farming, make bamboo sticks or running small grocery shops, and some have spouse who are full-time employed. However, half of the intervened vendors are the only income earners of the family, whereby the whole family rely on oncome from snack-vending.

Table 5. Intervened vendors' estimate income calculated from the old and new snacks

Continue / Discontinue / Control	Vendor - School	Average daily revenue	Profit margin of Old snack (%)	Estimate daily income	Daily expense (excluding ingredient cost)	Estimate net daily income	Estimate net monthly income (daily income*20)	The only income earner?
Continue	Mr. U – School A	300,000	67.70	203,100	100,000	103,100	2,062,000	No
	Mr. T – School A	150,000	-3.40	-5,100	100,000	-105,100	-2,102,000	No
	Ms. Aa– School B	80,000	21.45	17,160	50,000	-32,840	-656,800	Yes
	Ms. Y – School B	120,000	35.21	42,252	30,000	12,252	245,040	No
	Ms. E– School B	200,000	71.39	142,780	50,000	92,780	1,855,600	No
Discontinue	Ms. M– School A	180,000	15.60	28,080	25,000	3,080	61,600	Yes
	Ms. SH – School A	50,000	56.80	28,400	50,000	-21,600	-432,000	Yes
	Ms. Aw – School A	200,000	41.50	83,000	30,000	53,000	1,060,000	No
	Ms. Ed– School A	200,000	30.30	60,600	30,000	30,600	612,000	Yes
	Ms. En– School A	120,000	42.48	50,976	30,000	20,976	419,520	No
	Mr. M– School B	150,000	14.90	22,350	100,000	-77,650	-1,553,000	Yes
	Mr. H– School B	200,000	71.90	143,800	50,000	93,800	1,876,000	Yes
Mr. A– School B	100,000	48.50	48,500	50,000	-1,500	-30,000	Yes	

3.4.8 Criteria for choosing ingredients

The intervened and control vendors reported they mostly buy their ingredients from the local market. The strategies to reduce the cost of ingredients include buying in bulk, buying from wholesalers, and buying ingredients of compromised quality.

Table 6 shows that availability and cost are the criteria that the majority of surveyed vendors (75%) consider when choosing which ingredient to use. Only 1 vendor among those who continue to sell the new snacks reported to consider children's health when choosing the ingredients.

Table 6. Criteria for choosing ingredients

Criteria for choosing ingredients*	<i>n</i>				
	Continue	Discontinue	Control	Total	%
Cost	2	3	8	13	32.50
Availability	2	4	11	17	42.50
Children's preference	1	1	2	4	10.00
Ingredients shelflife	0	1	2	3	7.50
Quality	0	2	0	2	5.00
Children's health	1	0	0	1	2.50
Total	6	11	23	40	100.00

* multiple answers are accepted

3.5 CHILDREN

3.5.1 Children's demographics

Thirty children from 3 schools were interviewed. Of the total, 41 were boys and 49 were girls. They are primary school students aged between 6-12 years old. The children were selected randomly across the age range.

Table 7. Age and gender of the surveyed children

Age	Boys					Girls				
	School A	School B	School C	Total	%	School A	School B	School C	Total	%
6	1	0	1	2	4.88	4	1	0	5	10.20
7	3	6	2	11	26.83	4	7	3	14	28.57
8	2	1	3	6	14.63	2	1	5	8	16.33
9	2	1	3	6	14.63	3	5	0	8	16.33
10	3	2	3	8	19.51	2	0	5	7	14.29
11	1	3	2	6	14.63	2	2	2	6	12.24
12	1	0	1	2	4.88	0	1	0	1	2.04
Total	13	13	15	41	100.00	17	17	15	49	100.00

3.5.2 How much money children receive

The majority (57.78%) of interviewed students received Rp 5,000 as pocket money per day. Younger children received lower amount. It was observed that those who received twice as much amount (Rp 10,000-12,000 – US\$ 0.75-0.90) did not have breakfast from home. It is presumed that their parents gave them such amount in order to buy breakfast at school.

Table 8. Daily pocket money of the surveyed children

Rp/day	<i>n</i>				
	School A	School B	School C	Total	%
2,000	2	2	6	10	11.11
3,000	0	8	0	8	8.89
4,000	3	4	4	11	12.22
5,000	20	15	17	52	57.78
6,000	3	0	1	4	4.44
7,000	0	0	1	1	1.11
8,000	0	0	0	0	0.00
9,000	0	0	0	0	0.00
10,000	2	0	1	3	3.33
12,000	0	1	0	1	1.11
Total	30	30	30	90	100.00

3.5.3 For which meal children buy snacks

The majority (62.14%) of children buy snacks during morning break, while certain portion also buy for breakfast and lunch. It is possible that certain portion of the interviewed children consume snacks more than once during school hours.

Table 9. Children mostly buy snacks during morning break

Meal*	<i>n</i>				
	School A	School B	School C	Total	%
Breakfast	9	7	8	24	23.30
Morning break	25	16	23	64	62.14
Lunch	3	7	5	15	14.56
Total	37	30	36	103	100.00

* multiple answers are accepted

3.5.4 The most frequently-bought snacks

The most popular type of snacks among the interviewed children are the salty vendor-made snacks (45.16%). These are mostly traditional snacks which are cooked on the spot by either boiling, deep-frying or grilling. This type of snack also provides higher energy and nutritional content.

The second most popular type (30.11%) is sweet processed snacks. Most of this type contains ice, and are served as drinks or desserts. Vendors only need minimal preparation, as most of the ingredients are instant, packaged ones. The preparation required for most case is only to open the package and mix with ice or seasoning flavours. Every vendor of this type of snacks reported using artificial sweetener instead of sugar.

The third most popular type (19.35%) is salty processed snacks. The main ingredients are instant products, such as instant noodles, sausage and fishball. Vendors only need minimal preparation, such as pouring hot water. This type also includes the packaged salty snacks.

The least popular type (5.38%) is the sweet vendor-made snacks. They are traditional desserts which require considerable preparations and use more ingredients than sweet processed snack. Most also contain ice, and every vendor of this type reported using artificial sweetener instead of sugar.

Table 10. The most frequently-bought snacks of the surveyed children

Salty / Sweet	Snack type	Snack Name	<i>n</i>				
			School A	School B	School C	Total	%
Salty	Vendor-made	<i>Bakso</i> (meatball)	4	1		5	5.38
		<i>Cimol</i> (steamed sago ball topped with seasonings)	1			1	1.08
		<i>Nasi uduk</i> (rice cooked in coconut milk)	2	1		3	3.23
		<i>Cireng</i> (deep-fried tapioca ball coated with egg)	4	3		7	7.53
		<i>Cilor</i> (tapioca flour pancake)		2	2	4	4.30
		Deep-fried <i>tempe</i>		1		1	1.08
		<i>Batagor</i> (deep-fried dumpling made of tapioca flour)		1	2	3	3.23
		<i>Cilung</i> (deep-fried rice noodle coated with egg)		2		2	2.15
		Chicken <i>satay</i>		1		1	1.08
		<i>Gorengan</i> (deep-fried assortments)				7	7.53
		<i>Papeda</i> (sago flour crepe)				8	8.60
						Total	45.16
	Processed	<i>Seblak</i> (stir-fried assortments with seasonings)	1	1	1	3	3.23
		<i>Mie gelas</i> (instant noodle in plastic cup)	3			3	3.23
		<i>Macaroni</i> (crispy macaroni coated with seasoning)	1			1	1.08
		<i>Mie gaul</i> (instant noodle with toppings)	1			1	1.08
		Popcorn with seasonings	1	1		2	2.15
		Biscuit		4	1	5	5.38
		Wafer				1	1.08

		Grilled sausage			2	2	2.15
						Total	19.35
Sweet	Vendor-made	<i>Es buah</i> (ice fruit jelly drink)	1			1	1.08
		<i>Es doger</i> (ice coconut drink with toppings)	3			3	3.23
		<i>Es cendol</i> (desserts drink with coconut milk and coconut syrup)	1			1	1.08
						Total	5.38
	Processed	Ice drinks	4			4	4.30
		Pop ice	1			1	1.08
		Ice cococrunch	3			3	3.23
		<i>Es kocok</i> (ice shake with sweetened flavours)		1	3	4	4.30
		Fanta drink		1		1	1.08
		Ice tea		5		5	5.38
		Chocolate bread		2		2	2.15
		Chocolate ice drink		2		2	2.15
		Chocolate			1	1	1.08
		Toast bread		1	3	4	4.30
<i>Ice kino</i> (frozen fruit-flavoured drink)			1	1	1.08		
					Total	30.11	
	Total	31	30	32	93	100.00	

3.5.5 The maximum price children can afford

Most of the snacks cost Rp 1,000 and 2,000. The difference in price reflects a larger portion, more assorted ingredients, or more toppings. The majority of interviewed children (64.44%) can afford Rp 2,000 maximum per portion.

Table 11. The maximum snack price which the surveyed children can afford

Price	<i>n</i>				
	School A	School B	School C	Total	%
1,000	0	1	4	5	5.56
2,000	21	18	19	58	64.44
3,000	3	6	3	12	13.33
4,000	4	3	2	9	10.00
5,000	2	1	2	5	5.56
6,000	0	1	0	1	1.11
Total	30	30	30	90	100.00

3.5.6 The criteria for choice of snacks

The interviewed children (73.33%) nominated Taste as the prime consideration for which snack to buy. Taste, when the children elaborated, refers to deliciousness of the snacks. And when asked what taste the children like best, most of them preferred spicy taste.

Table 12. Criteria for choice of snack among the surveyed children

Criteria for choice of snack	<i>n</i>				
	School A	School B	School C	Total	%
Taste	23	22	21	66	73.33
Look	1	4	1	6	6.67
Price	3	2	4	9	10.00
Quantity	3	1	2	6	6.67
Cleanliness	0	1	0	1	1.11
Healthy	0	0	2	2	2.22
Total	30	30	30	90	100.00

3.5.7 The criteria for choice of vendors

The interviewed children (46.67%) chose from which vendor to buy based on the type of snack the vendor sells. Certain portion (25.56%) reported to choose the vendor based on the vendor's cleanliness.

Table 13. Criteria for choice of vendors among the surveyed children

Criteria for choice of vendor	<i>n</i>				
	School A	School B	School C	Total	%
The type of snack	15	14	13	42	46.67
The price of snack	1	2	1	4	4.44
Vendor's cleanliness	6	10	7	23	25.56
Vendor who is nice and friendly	2	3	4	9	10.00
Vendor whom I know personally	1	0	2	3	3.33
Vendor who gives larger portion	0	1	0	1	1.11
Vendor who is located nearest	5	0	3	8	8.89
Total	30	30	30	90	100.00

3.5.8 Consideration for nutritional value of the snacks

Most of the interviewed children (91.11%) do not know the nutritional value of the snacks they consume, and 86.67% do not consider the nutritional value when they buy the snacks.

Table 14. Awareness of nutritional value of the snacks among the surveyed children

Know nutritional value?	<i>n</i>				
	School A	School B	School C	Total	%
Yes	4	2	2	8	8.89
No	26	28	28	82	91.11
Total	30	30	30	90	100.00

Table 15. Consideration for nutritional value of the snacks among the surveyed children

Consider nutritional value?	<i>n</i>				
	School A	School B	School C	Total	%
Yes	5	6	1	12	13.33
No	25	24	29	78	86.67
Total	30	30	30	90	100.00

3.6 PARENTS

3.6.1 Parents' demographics

Most of the interviewed parents are relatively young parents, age between 21-35 years old, with significantly more number of females than males. This was partly due to the parents the author was able to reach were the parents who awaited their children at schools. Hence, more mothers came to pick up children than fathers. They mostly have 1-2 children, as they are still young parents.

Most of the interviewed parents (63.33%) have primary-school level of education. The significant part (70%) are housewife, in other words unemployed. Certain part (16.67%) of them run own shops or are self-employed (6.67%).

Table 16. Age and gender of the surveyed parents

Age	Male					Female				
	School A	School B	School C	Total	%	School A	School B	School C	Total	%
21-25	0	0	1	1	20.00	0	0	1	1	4.00
26-30	0	0	2	2	40.00	3	4	2	9	36.00
31-35	0	0	1	1	20.00	3	4	0	7	28.00
36-40	0	1	0	1	20.00	2	0	2	4	16.00
40+	0	0	0	0	0.00	2	1	1	4	16.00
Total	0	1	4	5	100.00	10	9	6	25	100.00

Table 17. Education level of the surveyed parents

Education level	<i>n</i>				
	School A	School B	School C	Total	%
No education	0	1	1	2	6.67
Primary	8	5	6	19	63.33
Lower secondary	0	3	2	5	16.67
Upper secondary	1	1	1	3	10.00
University	1	0	0	1	3.33
Total	10	10	10	30	100.00

Table 18. Occupation of the surveyed parents

Occupation	<i>n</i>				
	School A	School B	School C	Total	%
Housewife	8	8	5	21	70.00
Own shop	1	1	3	5	16.67
Self-employed	0	1	1	2	6.67
Employee	0	0	1	1	3.33
Teacher	1	0	0	1	3.33
Total	10	10	10	30	100.00

3.6.2 How much the parents spend on children's pocket money

The majority of the interviewed parents (53.33%) gave the total amount of Rp 5,000-10,000 as their children's pocket money per day. Presumably, because they were still young parents with young-aged children. The minimum amount reported was Rp 2,000/day per family, while the maximum amount was Rp 35,000/day per family (US\$ 2.62). The amount per child increases as the child grows up. In some families of 3-4 children with the eldest children studying in high school while the youngest children in primary school, the amount spent on children's pocket money per day is around Rp 30,000 (US\$ 2.25).

Table 19. Amount of pocket money which the surveyed parents spend per day

Pocket money given to children per family per day	<i>n</i>				
	School A	School B	School C	Total	%
0-5,000	3	4	2	9	30.00
6,000-10,000	2	2	3	7	23.33
11,000-15,000	1	2	2	5	16.67
16,000-20,000	1	0	2	3	10.00
21,000-25,000	1	2	0	3	10.00
26,000-30,000	2	0	0	2	6.67
30,000-35,000	0	0	1	1	3.33
Total	10	10	10	30	100.00

3.6.3 Basis for giving such amount

Nearly half (43.33%) of the interviewed parents gave such amount of money to their children because they perceived that it was enough to buy small snacks. Therefore, it was observed that the parents were aware of the price range and the number of snack portions the children would be able to buy with such amount.

Another significant part (33.33%) reported that they gave such amount because it was what they can afford, thus they were not willing to spend more if not necessary. Some parents (6.67%) gave extra more than average for the children to buy breakfast, while some (6.67%) gave such amount upon the child's request.

Table 20. The basis for giving the amount of pocket money

Basis for giving such amount	<i>n</i>				
	School A	School B	School C	Total	%
This is the amount I can afford to give my children.	4	3	3	10	33.33
Since I don't provide breakfast at home, this amount covers meal and snack.	1	1	0	2	6.67
This amount is enough to buy small snacks.	3	4	6	13	43.33
This amount matches what other parents give to their children.	1	1	1	3	10.00
Others (I give this amount upon my children's request.)	1	1	0	2	6.67
Total	10	10	10	30	100.00

3.6.4 Parents' perception and awareness about the snacks

The parents were interviewed using structured form about their perceptions on the snacks sold by vendors in the following aspects: price, nutrition, quality of ingredients, cleanliness in preparation and packaging material used. Their perceptions were not optimal, as their answers met only low to mid-range of their expectation.

The majority (60%) of interviewed parents perceived the snack price as just right, while significant part (36.67%) consider the price to be cheap. One-third perceived the snacks to be low in nutrients, while some (23.33%) thought the nutritional content is just adequate. However, another one-third were not sure about the nutritional content. Some (23.33%) parents indicated that the quality of snack ingredients is poor, while almost half (46.67%) think the quality is acceptable. However, certain percentage (23.33%) is not sure. Some of the interviewed parents (16.67%) expressed concerns that the snacks were not cleanly prepared, while the majority (76.67%) considered the cleanliness as acceptable. Nearly half (4 out of 10) of the interviewed

parents in school A considered the packaging which vendors used as poor quality, while the majority of interviewed parents in school B and C (7 and 8 out of 10 respectively) thought the packaging was acceptable; this despite the fact that the packaging materials used by the vendors in 3 schools used are not much different.

Table 21. Perception on price by the surveyed parents

Price	<i>n</i>				
	School A	School B	School C	Total	%
Cheap	5	5	1	11	36.67
Just right	5	5	8	18	60.00
Expensive	0	0	0	0	0.00
Don't know	0	0	1	1	3.33
Total	10	10	10	30	100.00

Table 22. Perception on nutrition by the surveyed parents

Nutrition	<i>n</i>				
	School A	School B	School C	Total	%
Low in nutrients	6	3	1	10	33.33
Adequate	2	3	2	7	23.33
Nutritious	0	1	1	2	6.67
Don't know	2	3	6	11	36.67
Total	10	10	10	30	100.00

Table 23. Perception on quality of ingredients by the surveyed parents

Quality of ingredients	<i>n</i>				
	School A	School B	School C	Total	%
Poor quality	5	2	0	7	23.33
Acceptable	3	6	5	14	46.67
Good quality	0	1	1	2	6.67
Don't know	2	1	4	7	23.33
Total	10	10	10	30	100.00

Table 24. Perception on cleanliness in preparation by the surveyed parents

Cleanliness in preparation	<i>n</i>				
	School A	School B	School C	Total	%
Not clean	3	1	1	5	16.67
Acceptable	7	8	8	23	76.67
Very clean	0	0	0	0	0.00
Don't know	0	1	1	2	6.67
Total	10	10	10	30	100.00

Table 25. Perception on packaging material by the surveyed parents

Packaging material	<i>n</i>				
	School A	School B	School C	Total	%
Poor quality	4	1	1	6	20.00
Acceptable	5	7	8	20	66.67
Suitable	0	1	0	1	3.33
Don't know	1	1	1	3	10.00
Total	10	10	10	30	100.00

Nonetheless, the majority (83.33%) of parents in 3 schools were aware that the snacks which the children consumed at school can affect the children's growth.

Table 26. The surveyed parents' awareness that snacks can affect child's growth

Aware that snacks can affect child's growth	<i>n</i>				
	School A	School B	School C	Total	%
Yes	9	8	8	25	83.33
No	1	2	2	5	16.67
Total	10	10	10	30	100.00

When interviewed about what they understood by a nutritious snack, a significant part (4 out of 10) of parents from school A referred to snacks which contain meat or fruits or vegetables, while some parents (4 out of 10) in school B thought of a nutritious snack as ones which do not use chemical additives or preservatives. However, the majority (53.33%) of interviewed parents in 3 schools agreed that nutritious snacks mean the snacks which are cleanly prepared.

Table 27. Definition of nutritious snacks by the surveyed parents

Definition of nutritious snack	<i>n</i>				
	School A	School B	School C	Total	%
Any snack that is delicious.	1	0	0	1	3.33
Snacks which contain meat or fruits or vegetables.	4	0	2	6	20.00
Snacks which do not use chemical additives or preservatives.	1	4	1	6	20.00
Snacks which avoid using MSG.	1	0	0	1	3.33
Snacks which are cleanly prepared.	3	6	7	16	53.33
Total	10	10	10	30	100.00

3.7 SCHOOL

3.7.1 School's involvement with vendors

The author conducted interviews with the school principal of school A and the school's representatives in school B and C, who are in charge of the school facilities and, informally, supervising issues of snack vendors.

School A and school C reported no involvement of any kinds with vendors who sell snacks inside and outside the schools. Vendors in these 2 schools operated freely in terms of who sell, what to sell, where to sell which ingredients to use. School B, on the other hand, has designated the school backyard to be the only area where vendors can sell snacks inside the school, apart from one permanent stall. The school B representative also reported of inquiring the types of snacks and the ingredients which vendors use. All 3 schools do not require vendors to pay any price for selling inside the schools, or have any mandate to manage vendors who sell snacks outside the schools, or to instruct vendors to use healthier ingredients.

In short, the 3 schools play relatively passive role in controlling the vendors. The schools expected snack vendors to self-regulate. It was learned that the only occasion in which the school would take initiatives on vendors is when the children become sick after eating the snack. The school A reported one case of children incurring stomach ache, while school B and C reported no case.

Table 28. Types of involvement with vendors

Types of involvement with vendors	School A	School B	School C
Select vendors to operate inside the school	No	Yes, based on the kinds of snacks and preparation methods	No
Designate location inside the school for vendors	No	Yes, vendors can sell only at the school's backyard	No
Require vendors to pay any price for selling inside the school	No	No	No
Manage vendors who operate outside the school	No	No	No
Ensure the quality of snacks sold by vendors	No	Yes, see how the vendors make snack and inquire about the ingredients	No
Instruct vendors to increase nutritional quality of snacks	No	No	No

3.8 SNACK MAPPING

The author gathered data on the snack items, price per unit, sales volume per day of each item, main ingredients, and nutritional component of every snack of every vendor in 3 schools. The results of snack mapping in each school are shown in Annex 1-3.

The findings of Snack Mapping method indicate that most of the snacks cost Rp 1,000 and 2,000, with the cheapest items cost Rp 500 (US\$ 0.04) and the most expensive item cost Rp 7,000 (US\$ 0.52).

Every of the 144 surveyed items contains energy, carbohydrate and fat. 45 out of 144 items contain protein. Only 20 out of 144 items contain vitamins. It serves to understand the nutritional component of the snacks which the children consume, and which accounts for a large portion of their daily food intake. The findings support the conclusion of previous research conducted in the same area that snack consumption contribute to children's poor health, as most of the snacks are energy and fat-dense while very low in micronutrients. The poor health of the children is manifested in high stunting and wasting rate among children in rural Indonesia.

3.9 INGREDIENTS PRICE

The author obtained data on ingredients from the weighing activity and through Snack Mapping method in which main ingredients of the snacks were identified. Most of the interviewed vendors reported buying ingredients from local market (*'Pasar Bogor'* – Bogor City Market). Therefore, the author and the research assistants team went to the market to collect data on ingredients price. The details of the ingredients price are shown in Annex 4.

The ingredients are divided into 2 categories: packaged snacks and fresh ingredients. Packaged snacks are the common items found in every stationary stall. The variety ranges from salty to sweet and drinks. Vendors buy these packaged snacks in bulk, for example a box of 10, and sell per individual piece at profit. It was observed that the packaged snacks earn profit margin around 10-40% of the selling price. Fresh ingredients range from proteins, such as meat and egg, to flour, vegetables, and ingredients for seasoning. It was found that Protein ingredients are the most expensive of all: beef Rp 120,000/kg (US\$ 8.98), chicken Rp 35,000/kg (US\$ 2.62), egg Rp 23,000/kg (US\$ 1.72); while the vegetables cost around Rp 10,000 – 15,000/kg (US\$ 0.75-1.12). The author used these data to calculate the ingredient cost of intervened vendors, whose results were shown in the ‘Cost and profit analysis’ section.

Another finding from Exploration of Food Suppliers method was the ingredient options available to vendors. Besides fresh ingredients, vendors go to wholesale shops to buy ‘dry’ ingredients. The products available at the wholesalers are mainly processed products with long shelflife; for example, sausage, meatball, bread buns, instant noodles, seasoning powders, etc. Food additives, such as food colourings, preservatives, and artificial sweetener were also found selling in bulk. Most of the products used as snack ingredients contain no label, or in other cases, labels without details of ingredient composition.

4 DISCUSSION

4.1 FINDINGS ON STAKEHOLDER ANALYSIS

The findings of this research reveal the actual interactions among stakeholders in the study area. The parents prefer to do things within their capacity, such as educating the children and providing healthy meals at home, instead of engaging with vendors to promote the consumption of healthy snacks. Having the school lunch program is also another alternative for improved nutrition, nonetheless, the parents are reluctant to support if they have to contribute certain amount of money to the school.

Despite the National Action Plan prescribes that schools are to monitor the snack vendors, in reality the 3 surveyed schools play a passive role towards the vendors. The 3 schools do not supervise over the types of snacks, the types of ingredients, nor the nutritional component. Only school B made effort to designate the area inside the school for the vendors, and to inquire which snacks are there. The schools also prefer to educate the children which snacks not to buy. The only occasion that the schools would take initiative to deal with vendors is when the children become sick after eating the snacks.

Thus, the snack vendors in the study area are free from constraints by other stakeholders. The constraints for the vendors' decision-making come in other forms, as will be analysed in Discussion section.

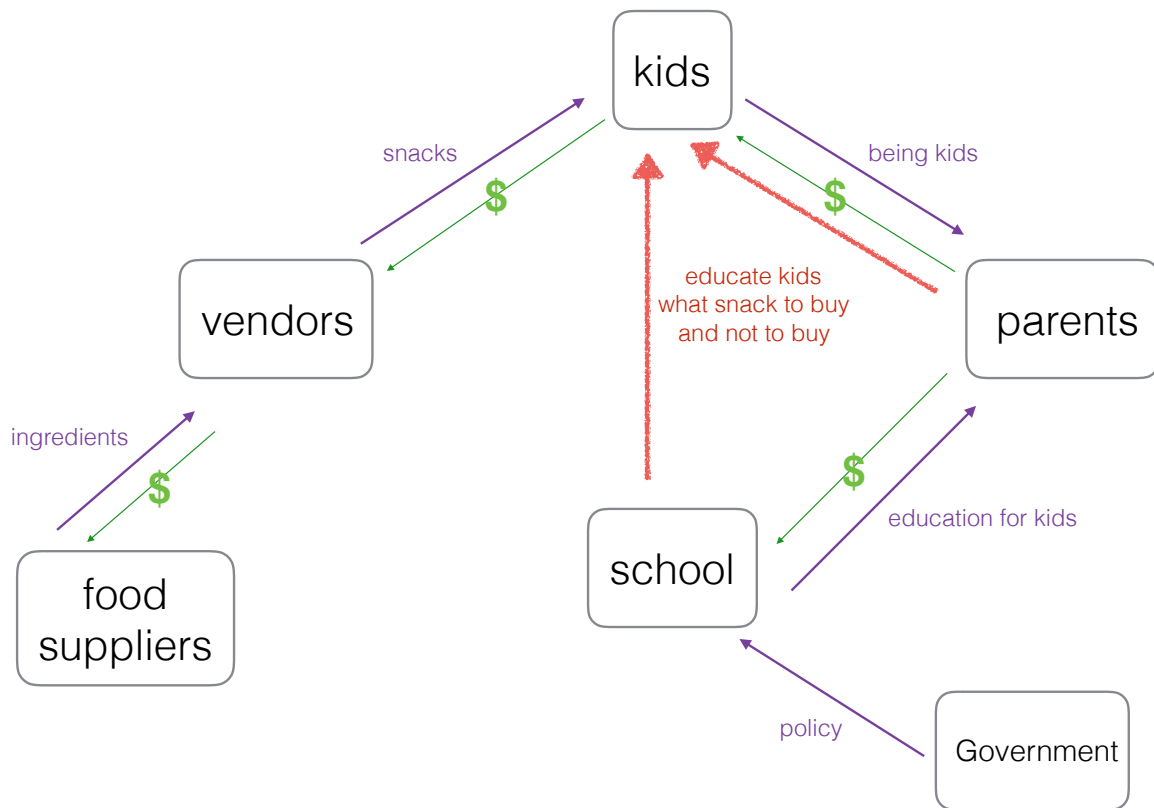


Figure 12. Finding on stakeholder analysis

4.2 STAKEHOLDERS' BEHAVIOUR

4.2.1 Children

It was found that Rp 5,000 is the standard pocket money amount for primary school children in the study area. As most of the snacks cost Rp 1,000 and 2,000, and most of the interviewed children reported that Rp 2,000 is the maximum price they can afford, the children consequently buy 3-4 portions per person during the half-day school hours. As soon as the teacher released them from the classroom for morning break, the children rushed to the vendors who stood ready at their usual spots. The findings of this research reveal how the children's decision-making mechanism of which snack to buy is at work.

First, the children considered the type of snack. It was found that the most popular type is the traditional, salty, vendor-made snacks which are mainly sold by mobile vendors who prepare the snacks per order on the spot. The children would observe the vendor while preparing, and at this point would request the vendor to season the snack to their favourite taste – Spicy. As the author observed, every snack vendor who sell the snacks of this type had chilli powder or spicy seasoning powder as their essential ingredient. The same occurred at stationary vendors who sell vendor-made snacks. Whether it is instant noodle served in plastic cup or *Seblak*, children would request the vendors to add extra chilli to the extent that the snacks turned red colour.

Next, it was evident that after consuming spicy snacks, the children would desire sweet, icy taste afterwards to cool down their mouth. The findings show that the second most frequently bought snacks are the sweet, processed type. They are mostly drinks which contain ice and have sweet taste. It was observed that some children would buy both salty and sweet snacks at a time, then start eating. Likewise, besides the salty cooked snacks, there is always demand for sweet snacks. The vendors respond to this demand by selling more variations of sweet processed snacks, as evidenced by 3 of the intervened vendors continue to sell their jelly-based snacks. Alternative to the sweet processed snacks are the sweet traditional snacks. However, it was observed that less number of vendors are selling this type. The reasons as to why vendors are not motivated to sell traditional sweet snacks despite there could have been demands will be discussed in the later part.

4.2.2 Parents

The interviewed parents know the types of snack available including the price range. They are not optimally satisfied with the snacks in terms of quality and nutritional component. Nonetheless, they give daily pocket money to children as a mean for children to buy the snacks from vendors. The basis for the majority of interviewed parent for giving certain amount of money is affordability, although some parents give such amount upon the children's request. On average, the parents spend Rp 5,000 – 10,000 (US\$ 0.37-0.75) per day for the primary-school children's pocket money. The amount increases as the children grow. Financial concern may arise if the parents have 3 - 4 school-age children, as the data shows that some parents spend up to Rp 35,000 (US\$ 2.62) per day for the children's pocket money. This figure accounts for significant household expenses: between 13% - 22% of the parents' income, based on West Java's minimum wage of Rp 1,544,360.57 (US\$ 115.60) (Berita, 2017).

The interviewed parents prefer to instruct the children of which snacks not to buy, rather than engaging with the vendors to monitor the snack quality and ingredients used. The lists of '*Don't Buy*' include ice, candy, soda drink, powder drink, jelly, spicy snacks, and grilled sausage. Nonetheless, the parents' instructions prove to be less effective, as the children still buy what they want to eat, and most of the interviewed children also reported not considering the nutritional value of the snacks when they buy. Hence, the parents' instructions, albeit practical and feasible, could be one way but not always the most effective way towards improving nutrition at schools.

The interviewed parents prefer to take actions within their capacity and routine, such as cook healthy meals at home, rather than preparing homemade snacks every day for the children to

bring to school. They also opt for a non-confrontational role towards other stakeholders. Likewise, it is found that the parents have limited involvement with the snack vendors, despite providing money for the children to buy snacks. Additionally, the interviewed parents were also reluctant to support the school lunch program at their own expense.

4.2.3 School

Despite the National Action Plan on Food and Nutrition prescribes the school to monitor the snack vendors for the benefits of children's health, the 3 schools in the study did not actively do so. Except for school B's limited engagement, the 3 schools were not concerned about the nutritional component, nor the ingredient quality. The schools would respond only in case where the children become sick after consuming the snacks. Thus, the definition of '*Healthy Snack*' from the 3 schools' perspective is the snacks which do not make the children sick. This is far from the understanding of '*Healthy Snack*' in Nutrition field. Therefore, this research affirms that Nutrition Education is a Must among the stakeholders. Not only educating the children, the parents and the vendors, It is a Must to educate the educator in order to yield a sustainable impact.

4.3 FACTORS AFFECTING VENDORS' DECISION-MAKING

4.3.1 Vendors' financial constraints

The result shows that the net income of some of the intervened vendors could not meet their expense. Some manage to meet the expense with barely minimal saving, and a few are more profitable. It emphasises that a sizeable number of vendors are financially distressed. The financial constraints of some snack vendors are even more aggravated when snack-vending is the only source of income to feed their entire family.

The financial constraints affect the vendors' decision-making in their criteria for choosing ingredients. Vendors are driven to choose the cheaper ingredients to reduce the cost, for any reduced cost means more profit, hence more income for them. As it was observed through Exploration of Food Suppliers method that the cheapest of all ingredients are those of flour, processed meat, seasoning powder, artificial food additives, it is not surprising that those become the main ingredients of the snacks. Likewise, snack vendors avoid using the costlier yet healthier ingredients such as meat, egg, and vegetables. Even if they use, it would be a very little amount.

4.3.2 Affordability and children's preference

The majority of interviewed children receive Rp 5,000 for pocket money per day, with the maximum price of Rp 2,000 which they can afford for a portion of snack. These figures cap the price of snacks the vendors can sell. In reality, most of the snacks also cost either Rp 1,000 or

2,000. The consequence is that children tend to spend all the money, thus buying 3-4 portions per person during the half-day school hours.

As it is shown that the most popular category is the salty vendor-made snacks and the second most popular is the sweet processed snacks, the mobile vendors tend to opt for either of these 2 types as there is always the demand, while the stationary vendors would have both types available in their stalls.

The salty vendor-made type requires more ingredients and has to be cooked on the spot, hence this type of snack provide much less profit. On the other hand, besides cheaper ingredient cost, the sweet processed type does not require much preparation nor cooking, hence selling this type of snacks is much more profitable. In deciding what to sell, the vendors are more inclined to choose the sweet processed snacks, as evidenced from 3 out of 5 Continue vendors changed from the salty vendors-made snacks to jelly drinks.

4.3.3 Characteristics of preferred ingredients

Availability was expressed as the prime criteria for vendors when choosing the ingredients, as evidenced by a Continue vendor who switched from selling jelly with melons to jelly with condense milk for reasons that melons are not always available. Cost was discovered to be a major concern. Thus, vendors are more likely to choose cheaper ingredients rather than healthier ones. The ingredients which require less preparation are also more preferred. For example, many vendors use processed meat, such as sausage and meatball, instead of real meat. The vegetables which do not require much preparation, such as cucumber and corn, are used more than the ones that require certain preparation time, such as carrots and leafy vegetables.

Lastly, the ingredients with longer shelflife help vendors to better control the cost and the ingredient stocks. As observed in cook-on-the-spot snacks, their ingredients are mainly flour, seasonings and egg, instead of fresh vegetables and fresh meat. In case vendors cannot sell all the amount they have prepared for one-day sale, they can still manage the ingredient stocks by keep them for the next day.

4.4 FUTURE PROJECTION AND CONCERN

4.4.1 Vendors move towards selling sweet processed snacks

The assignment of creating a new healthier snack was given during GFE Indonesia Intervention. As a result, every participating vendor came up with their new snacks, and 5 out of 13 intervened vendors continue to sell the new snacks up until 3 months after the Intervention. It is notable that 3 out of those 5 Continue vendors, their new snacks are the sweet processed type (1 jelly with condense milk and 2 jelly drinks). On the other hand, one vendor who stopped selling the new snack, her new snack was also a dessert, yet traditional vendor-made type (*Es cendol* – traditional dessert consists of red bean, sugarcane syrup, coconut milk and ice). Nonetheless, she stopped selling after 2 weeks because the ingredient cost was too high and it was not profitable, despite getting positive feedback from children.

Thus, it was learned that the sweet processed snacks are more viable in terms of cheaper cost and higher profit. Consequently, where vendors had the opportunity to change their snacks, they are more likely to consider the sweet processed type.

4.4.2 Use of artificial sweetener

Sodium Cyclamate is the artificial sweetener used to substitute sugar to provide sweetness in drinks and desserts. It is 30-50 times sweeter than sugar for the same amount, and often used in combination with Sodium Saccharin in a ratio of 10:1 (Bruso, 2017). The use of Sodium Cyclamate is banned in the US, Japan and other 45 countries, although it is allowed in certain countries including Indonesia. Concerns about Sodium Cyclamate as being carcinogenic were raised in a number of studies (Price et al, 1970; Taylor et al, 1980). However, the conclusion is still debated as for determining the safe intake level and exposure duration (Hicks et al, 1975). The instruction on Sodium Cyclamate package in Indonesia prescribes the daily intake amount of not exceeding 11mg/kg body weight per day. In primary school students weighed between 20-40 kg, the daily intake should not exceed 0.022 – 0.044 g per day.

Every interviewed vendor who sells sweet snacks reported using Sodium Cyclamate instead of sugar. The author found Sodium Cyclamate being sold in bulk at wholesalers, and sold individually at grocery shops in the school's vicinity. Those who use Sodium Cyclamate as ingredients were reluctant to be interviewed, and refused to provide information on the amount used. The author observed in one incident that the use of Sodium Cyclamate by one vendor per one portion exceeds the daily limit prescribed on the package. While it is not certain about the side effects of Sodium Cyclamate, the exposure to excessive amount over long term through consumption of snacks definitely raises concerns about the consequence to children's health.

5 CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

This research identifies that the factor affecting the snack vendors' decision-making in choosing the types of snacks and the types of ingredients are the vendors' financial constraints, the price cap or affordability, and the children's preference. Vendors have easy access to both nutritious and non-nutritious ingredients as they can be purchased from the local market. However, the vendors are not incentivised to use nutritious ingredients, as those 'healthy' ingredients are costlier, not available all year-round, require more preparation and have short shelflife. Consequently, the vendors' options for ingredients turn towards processed products and artificial food additives, as using those will yield more profits.

In absence of the school lunch program, it would be ideal if the snack vendors could become the healthy snack agents. As the snacks account for a major part of the children's daily food intake, if the snacks sold by the vendors could be richer in nutrients, the staggering malnutrition rate in rural Indonesian children could have been alleviated. Nonetheless, any attempt to sustainably encourage the vendors to sell healthy snacks must take into account the factors influencing the vendors' decision-making. This research has shown that for snack vendors, at least in the study area, profit takes priority over the children's health.

The lessons learned from GFE Indonesia Intervention were that, nonetheless, there is still a way to reconcile the snack vendors' profit and the children's health. As one Continue vendor previously selling plain *Papeda* (crepe) demonstrated, he was able to add more nutrients to his snack while earning more profit. Despite it remains controversial whether adding a sausage

makes the snack healthier, nutrition-wise, *Papeda* with toppings yields more macro and micro nutrients than plain *Papeda*. His case demonstrated that it was possible for the snack vendors to use low-cost ingredients, yet adding more nutrients to the snack.

5.2 RECOMMENDATIONS

5.2.1 Short-term

Intervention for snack vendors

Young vendors proved to be more adaptive than older vendors with long years of experience. The GFE Indonesia Intervention shows that when the opportunity was given, certain vendors prompted to change their snack items, or to have additional items on top of their current snacks. The intervention for snack vendors of similar design could serve as an opportunity to educate the snack vendors about nutrition, while concurrently encouraging them to use more nutritious ingredients. The first step is to establish the connection between the snacks they sell and their effects on children's health, then elaborate which nutritious ingredients yet low-cost are available as their options. It is also important to justify to the vendors that selling healthy snacks can also be profitable.

One example of *Papeda* vendor demonstrated that it was possible for the vendors to sell improved-nutrient snacks while maintaining profit. His lesson to be replicate was to add nutritious ingredient while charging the price for it. Nonetheless, the overall price has to be in affordable range for the children, which in this case is still within the maximum price that the

children said they could afford (Rp 2,000). It is also possible for the vendors to increase the options of nutritious toppings to their snacks, as *Papeda* vendor successfully demonstrated.

Policy approach to ban the use of artificial sweetener

The vendors use Sodium Cyclamate to substitute sugar as it is much cheaper. As the findings shows that the snack vendors always opt for the cheaper ingredients where possible, an attempt to encourage the vendors to stop using Sodium Cyclamate for concerns of the children's health would hardly yield any result. Therefore, a more effective approach to prevent excessive use of Sodium Cyclamate in snacks is through policy or regulation to ban the sale of Sodium Cyclamate.

Promote consumption of healthy traditional snacks

Not all the snacks are unhealthy. Certain traditional snacks are rich in macro and micro nutrients. Examples are 'Chicken *satay*' – charcoal grilled chicken on the stick served with peanut sauce, sliced cucumber and steamed rice cake, which contains carbohydrate, protein, fat, fiber and vitamins; '*Gadogado*' – steamed vegetables salad with peanut sauce dressing, are high in vitamins as it consists of various kinds of vegetables. Both types of traditional snacks are sold in the surveyed schools.

However, given many other options available the children are more attracted by snacks which have their favourite taste – spicy. It was observed that after the children consume very spicy snacks, they would then buy sweet snacks as if they need the desserts after the meal.

One strategy can be to promote the consumption of healthy traditional snacks through education in the classroom and by the parents at home.

5.2.2 Long-term

Nutrition education for children, parents, teachers

The research findings show that the key stakeholders in the study area still understand ‘healthy snacks’ differently from the common understanding: the majority of interviewed parents think of healthy snacks as the snacks which are cleanly prepared; the schools think of healthy snacks as the snacks which do not make the children sick. It is urgently called for nutrition education for the stakeholders, not only the children but also to the parents and teachers. In absence of nutrition education in formal curriculum, it is called for the government to take initiatives to include nutrition education in schools, as education could provide a more sustainable outcome, nonetheless in long term, than requiring the schools to supervise the snack vendors in the National Action Plan which has no binding power.

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Annex 1. Snack Mapping: School A

No.	Vendor's name	Snack name	Price (Rp)	Sales volume / day	Main ingredients	Nutritional component
1	Mr. M	<i>Baslok</i> (meatball) with egg	3,000	20 pcs	chicken, meat, egg, tofu, flour, tapioca flour, MSG, salt, water	energy, carbohydrate, fat, protein
		<i>Baslok</i> + tofu	3,000	70 pcs	chicken, meat, tofu, flour, tapioca flour, MSG, salt, water	
		<i>Baslok</i>	2,000	50 pcs	chicken, meat, tofu, flour, tapioca flour, MSG, salt, water	
		small <i>Baslok</i>	1,000	100 pcs	chicken, meat, tofu, flour, tapioca flour, MSG, salt, water	
2	Ms. Aw	<i>Gadogado</i> (steamed vegetable salad with peanut sauce)	7,000	10 to 15 portions	<i>lontong</i> (rice cake), water spinach, bean sprouts, nut, long bean, vinegar/lime	energy, carbohydrate, fat, protein, vitamin, fiber
3	Mr. H	<i>Es gulali</i> (sweetened ice drink with candy)	1,000	70-80 cup	ice, soda (big cola), pop ice, sugar, artificial sugar,	energy, carbohydrate
4	Mr. A	<i>Es doger</i> (ice crush with coconut milk and toppings)	1,000	300	sticky rice, tape (fermented sticky rice), coconut, milk	energy, carbohydrate, fat
5	Mr. R	popcorn	1,000	1kg	corn, chili powder	energy, carbohydrate, fat
		<i>Es goriorio</i> (ice crush with cookies toppings)	1,000	100 pcs	ice, milk, <i>gorioorio</i> (cookies)	energy, carbohydrate
6	Mr. G	<i>Cimol</i> (steamed sago ball topped with seasonings)	1,000	4 kg sago	tapioca flour, flour, seasoning (<i>balado</i> , chili, barbeque, salty powder)	energy, carbohydrate
7	Mr. Y	<i>Martabak</i> (roti pattie with assortments)	1,000	3-4 kg flour	flour, milk, egg, sugar, chocolate, nut, strawberry and blueberry jam	energy, carbohydrate, fat, protein, vitamin
8	Ms. Ed	<i>Pilus</i>	500	5-6 pcs	flour	energy, carbohydrate
		<i>Better Biscuit</i>	1,000	5-6 pcs	flour, chocolate colouring	energy, carbohydrate, fat

	<i>Sukro Garuda</i>	500	5-6 pcs	flour, peanut	energy, carbohydrate, fat
	<i>Wallens Soes</i> (choco pastry)	1,000	5-6 pcs	flour, sugar, milk	energy, carbohydrate, fat, protein
	<i>Beng Beng</i>	1,500	5-6 pcs	flour, rice crispy, chocolate	energy, carbohydrate, fat
	<i>Superstar Wafer</i>	1,000	5-6 pcs	flour, chocolate	energy, carbohydrate, fat
	<i>Gery Salut</i>	500	5-6 pcs	flour, chocolate	energy, carbohydrate, fat
	<i>Nabati Wafer</i>	1,000	5-6 pcs	flour, cheese colouring	energy, carbohydrate, fat
	<i>Tictac</i>	1,000	5-6 pcs	flour	energy, carbohydrate
	<i>Lontong</i> (homemade rice cake)	2,000	5-6 pcs	rice	energy, carbohydrate
	<i>Gorengan</i> (deep-fried assortments)	2,000	5-6 pcs	flour, vegetables (carrot, cabbage), <i>tempe</i> , tofu, cooking oil	energy, carbohydrate, fat, protein
	<i>Pangsit</i> (deep-fried fish dumpling)	1,000	5-6 pcs	flour, tapioca flour, cooking oil	energy, carbohydrate, fat
	<i>Nextar</i>	2,000	5-6 pcs	flour, egg, sugar, pineapple jam	energy, carbohydrate, fat, protein, vitamin
	<i>Sosis So Nice</i>	1,000	5-6 pcs	meat, flour	energy, carbohydrate, fat, protein
	<i>Klik</i>	2,000	5-6 pcs	flour, egg, sugar	energy, carbohydrate, fat
	<i>Jasjus</i>	500	5-6 pcs	sugar, fruit flavour	energy, carbohydrate
	<i>Indomilk</i>	3,000	5-6 pcs	cow milk, skim milk, sugar, chocolate, vanilla and fruits flavour (strawberry, banana)	energy, carbohydrate, fat, protein, vitamin
	<i>Ultramilk</i>	3,000	5-6 pcs	cow milk, skim milk, sugar, chocolate, vanilla and fruits flavour (strawberry, banana)	energy, carbohydrate, fat, protein, vitamin
	<i>Momogi Crackers</i>	500	5-6 pcs	flour, corn flavour, salt, sugar	energy, carbohydrate

9	Ms. M	<i>Mie gelas</i> (instant noodle in plastic cup)	2,500	3 pcs	flour, egg, tapioca flour, salt	energy, carbohydrate, fat, protein
		<i>Otak-otak</i> (deep-fried fishball)	1,500	60 pcs	fish, cooking oil, flour	energy, carbohydrate, fat, protein
		<i>Bakwan</i> (veggies fritter)	2,000	30 pcs	flour, carrot, bean sprout, cooking oil	energy, carbohydrate, fat, vitamin
		<i>Gorengan tempe</i> (deep-fried tempe)	2,000	30 pcs	<i>tempe</i> , flour, cooking oil	energy, carbohydrate, fat, protein
		<i>Gorengan jagung</i> (corn fritter)	2,000	30 pcs	corn, flour, cooking oil	energy, carbohydrate, fat, vitamin
		<i>Nasi uduk</i> (rice cooked in coconut milk)	3,000	50 portions	rice, coconut milk, MSG, <i>tempe</i> , cooking oil, soy sauce, rice noodle	energy, carbohydrate, fat, protein, vitamin
		<i>Pop Ice</i>	1,000	2-3 pcs	sugar, fruit flavour	energy, carbohydrate
		<i>Jasjus</i>	1,000	2-3 pcs	sugar, fruit flavour	energy, carbohydrate
		<i>Marimas</i>	1,000	2-3 pcs	sugar, fruit flavour	energy, carbohydrate
		<i>Choco Go</i>	1,000	2-3 pcs	sugar, chocolate flavour	energy, carbohydrate, fat, protein
		<i>Sisri Tea</i>	1,000	5 pcs	sugar, fruit flavour	energy, carbohydrate
10	Ms. En	<i>Baslok</i>	500/1,000	100 pcs	flour, meat, chicken, tapioca flour	energy, carbohydrate, fat, protein
11	Mr. D	<i>Basreng</i> (fried meatball)	2,000	500 pcs	tapioca flour, fish, flour, soy sauce, chili sauce	energy, carbohydrate, fat, protein
12	Ms. Am	Chocolate stick	1,000	100 sticks	chocolate, flour	energy, carbohydrate
		Banana chips	1,000	1 pcs	banana, cooking oil	energy, carbohydrate, fat, vitamin
		Ice drinks	1,000	200 cups	pop ice, water, sugar, ice cube	energy, carbohydrate
13	Ms. SH	<i>Seblak</i> (stir-fried crackers and assortments with seasonings)	1,000-2,000	20 cups	noodle, <i>kerupuk</i> (crackers), tofu, meatball, rice noodle, cooking oil, MSG, salt, garlic	energy, carbohydrate, fat, protein

		<i>Es buah</i> (jelly drink with fruit)	1,000	10 cups	jelly, melon, sugar, condensed milk	energy, carbohydrate, fat, protein, vitamin, fiber
		Fresh mango	2,000	6 fruits	mango	energy, carbohydrate, vitamin, fiber
		<i>Mie gelas</i> (instant noodle in plastic cup)	1,500	2 cups	flour, egg, tapioca flour, salt	energy, carbohydrate, fat, protein
		<i>Otak-otak</i> (fishball)	500	20 pcs	fish, cooking oil, flour	energy, carbohydrate, fat, protein
		<i>Pop Ice</i>	1,000	20 pcs	sugar, fruit flavour	energy, carbohydrate
		<i>Sisri Tea</i>	1,000	20 pcs	sugar, fruit flavour	energy, carbohydrate
		<i>Wallens Soes</i> (choco pastry)	1,000	4 pcs	flour, sugar, milk	energy, carbohydrate, fat, protein
		<i>Gorioorio</i> (cookies)	500	4 pcs	flour, sugar	energy, carbohydrate
		Kopiko candy	500	4 pcs	sugar, coffee flavour	energy, carbohydrate
		Yupi	500	4 pcs	sugar, fruit flavour	energy, carbohydrate, vitamin
		Colourful jelly	500	4 pcs	sugar, jelly powder	energy, carbohydrate, vitamin
		Nabati wafer	2,000	4 pcs	flour, cheese colouring	energy, carbohydrate, fat
		Macaroni snack	500	4 pcs	flour, seasoning	energy, carbohydrate, fat
		Fried sausage	1,000	4 pcs	meat, flour, cooking oil	energy, carbohydrate, fat, protein
14	Ms. I	<i>Nasi kuning</i> (rice cooked in coconut milk and tumeric)	1,000	20 portions	rice, coconut milk, turmeric	energy, carbohydrate, fat
		<i>Tempe goreng</i> (deep-fried <i>tempe</i>)	500	20 pcs	<i>tempe</i> , cooking oil	energy, carbohydrate, fat, protein
		<i>Bihun goreng</i> (fried rice noodle)	1,000	20 pcs	rice noodle, cooking oil	energy, carbohydrate, fat
		<i>Otak-otak</i> (fishball)	500	20 pcs	fish, cooking oil, flour	energy, carbohydrate, fat, protein

15	Mr. R	<i>Bubur ayam</i> (chicken porridge)	2,000	2,5 L of rice	rice, <i>kerupuk</i> (flour tapioca), soybean, slices of fried chicken	energy, carbohydrate, fat, protein
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Annex 2. Snack Mapping: School B

No.	Vendor's name	Snack name	Price (Rp)	Sales volume / day	Main ingredients	Nutritional component
1	Ms. A	<i>Seblak</i> (stir-fried crackers and assortments with seasonings)	1,000	50 cups	noodles, chili powder, cooking oil, rice noodles, MSG	energy, carbohydrate, fat
		<i>Baslok</i> (meatball)	1,500	25 pcs	flour, tapioca flour, chili sauce	energy, carbohydrate
		Sukro (nut coating with flour)	1,000	2-3 pcs	flour, nut, cooking oil	energy, carbohydrate, fat, protein
		<i>Walens</i> (choco pastry)	1,000	2-3 pcs	flour, chocolate colouring, egg, margarine,	energy, carbohydrate, fat
		<i>Bakwan</i>	2,000	10 pcs	flour, carrot, cooking oil	energy, carbohydrate, fat, vitamins
		Fried <i>tempe</i>	2,000	10 pcs	<i>tempe</i> , flour, cooking oil	energy, carbohydrate, fat, protein
		Nugget	2,000	20 pcs	<i>sagoo</i> , cooking oil	energy, carbohydrate, fat
		<i>Nasi uduk</i> (rice cooked in coconut milk)	2,000	20 portions	rice, coconut milk, cracker, peanut sauce	energy, carbohydrate, fat, protein
		<i>Bihun goreng</i> (Fried rice noodles)	1,000	20 portions	rice noodles, cooking oil, soy sauce	energy, carbohydrate, fat
		<i>Sarimi gelas</i> (instant noodle)	2,000	20 pcs	noodles, seasoning	energy, carbohydrate, sodium
		<i>Slai Olai biscuit</i>	1,000	2-3 pcs	flour, egg, fruit jam, sugar	energy, carbohydrate, protein
		<i>Sosis</i> (ready to eat sausage)	1,000	2-3 pcs	tapioca flour, chicken meat, salt	energy, carbohydrate, protein, sodium
Yupi (gummy candy)	500/1000	5 pcs	sugar, flavoured	energy, carbohydrate		

	Nextar biscuit	2,000	3 pcs	flour, sugar, vegetable fat. pineapple jam	energy, carbohydrate, fat
	<i>Chocolatos</i> (choco roll)	1,000	2 pcs	flour, chocolate	energy, carbohydrate, fat
	<i>Beng Beng</i> (choco wafer)	1,500	2-3 pcs	wafer, rice crispy, chocolate	energy, carbohydrate, fat
	<i>Cha Cha</i> (choco candy)	500	2-3 pcs	chocolate	energy, carbohydrate
	<i>Sari gandum</i> (oat biscuit)	2,000	2-3 pcs	wheat flour, sugar, tapioca, vegetable oil, coconut	energy, carbohydrate, fat, protein
	<i>Mie kremez</i> (Ready to eat noodles)	500	5 pcs	noodles (flour), seasoning	energy, carbohydrate, sodium
	<i>Keju cake</i> (cheese cake)	1,500	2-3 pcs	flour, sugar, cheese powder	energy, carbohydrate, fat
	<i>Oreo soft cake</i> (choco cake)	1,500	2-3 pcs	sugar, vegetable oil, chocolate fat, flour	energy, carbohydrate, fat
	<i>Energen</i> (milk chocolate with oat)	1,500	2-3 pcs	sugar, creamer, flour, milk powder, chocolate powder	energy, carbohydrate, fat, protein, fiber
	<i>Momogi</i> snack	500	2-3 pcs	corn, vegetable oil, corn starch, sugar	energy, carbohydrate
	<i>Superstar</i> (choco wafer)	1,000	2-3 pcs	wafer, chocolate	energy, carbohydrate, fat
	Jelly (homemade)	1,000	10 pcs	jelly, sugar, milk, water	energy, carbohydrate, fiber
	<i>Okky jelly drink</i>	1,000	10 cups	jelly	energy, carbohydrate, fiber
	<i>Teh gelas</i> (tea cup)	1,000	5 cups	tea, sugar	energy, carbohydrate
	<i>Frenta</i> (soda instant drink)	1,000	5 sachets	sugar, artificial sweetener, flavoured	energy, carbohydrate
	<i>Sisri</i> (tea instant drink)	1,000	5 sachets	sugar, artificial sweetener, flavoured	energy, carbohydrate
	<i>Top Ice</i> (fruity instant drink)	1,000	5 sachets	sugar, artificial sweetener, flavoured	energy, carbohydrate

		<i>Gery chocolate biscuit</i>	1,500	2-3 pcs	flour, sugar, chocolate	energy, carbohydrate, fat
		<i>Ale-ale</i> (fruity drink)	1,000	5 cups	sugar, artificial sweetener, flavoured	energy, carbohydrate
2	Mr. H	<i>Cilor</i> (tapioca flour pancake)	1,000	350 portions	tapioca, flour, egg, cooking oil, chili powder, seasoning	energy, carbohydrate, fat, sodium
3	Mr. M	<i>Batagor</i> (deep-fried dumpling made of tapioca flour)	2,000	250 portions	tapioca, flour, dumpling wrap, cucumber	energy, carbohydrate, fat
4	Mr. A	<i>Cakwe</i> (deep-fried flour stick)	1,000	1 kg of flour	flour, egg, cooking oil	energy, carbohydrate, fat
		<i>Cireng</i> (deep-fried tapioca ball coated with egg)	1,000	2 kg of tapioca	tapioca, cooking oil	energy, carbohydrate, fat
		<i>Telur bihun gulung</i> (deep-fried rice noodle coated with egg in a stick)	1,000	50 pcs	noodles, egg, cooking oil, seasoning/chili sauce/peanut sauce	energy, carbohydrate, fat, protein, sodium
5	MS. Y	<i>Okky jelly drink</i>	2,000	2-3 cups	jelly	energy, carbohydrate, fiber
		<i>Nata de coco drink</i>	1,000	2-3 cups	nata de coco, sugar	energy, carbohydrate, fiber
		<i>Teh gelas</i> (tea cup)	1,000	2-3 cups	tea, sugar	energy, carbohydrate
		<i>Floridina</i> (Orange juice)	4,000	2-3 bottles	water, sugar, pulp orange, orange flavoured	energy, carbohydrate
		Aqua mineral water	3,000	2-3 bottles	water	-
		Big cola	2,000	2-3 bottles	sugar, water, soda flavoured	energy, carbohydrate
		<i>Richeese</i> (cheese wafer)	500	2-3 pcs	wafer, cheese flavoured	energy, carbohydrate, fat
		<i>Slai Olai biscuit</i>	1,000	2-3 pcs	flour, egg, fruit jam, sugar	energy, carbohydrate, protein
		<i>Cha-cha</i> (choco candy)	500	2-3 pcs	Chocolate, sugar	energy, carbohydrate
Chocolate bread	2,000	2-3 pcs	flour, egg, chocolate, sugar,	energy, carbohydrate,		

					margarine	protein, fat
		Kerupuk	500	2-3 pcs	tapioca, cooking oil	energy, carbohydrate, fat
6	Mr. A	<i>Ice mambo</i> (frozen sweetened drink)	1,000	100-150 pcs	tapioca, coconut milk, sugar, food colouring	energy, carbohydrate
7	Mr. B	<i>Papeda telur</i> (sago flour crepe roll)	1,000	150 sticks	egg, flour, cooking oil, <i>cilung</i> seasoning, MSG, chili powder,	energy, carbohydrate, fat
8	Mr. O	<i>Sate ayam</i> (chicken satay)	1,000	500 sticks	chicken (meat and skin). peanut sauce, soy sauce, rice cake (<i>lontong</i>)	energy, carbohydrate, fat, protein
9	Mr. N	<i>Bihun telur gulung</i>	1,000	200 sticks	rice noodles, egg, cooking oil	energy, carbohydrate, fat, protein
		<i>Bakso telur gulung</i>	1,000	200 sticks	meatball, egg, cooking oil	energy, carbohydrate, fat, protein
		<i>Bakso goreng</i>	1,000	200 pcs	flour, fish, cooking oil, seasoning, chili powder	energy, carbohydrate, fat, protein, sodium

Annex 3. Snack Mapping: School C

No.	Vendor's name	Snack name	Price	Sales volume / day	Main ingredients	Nutritional component
1	Mr. A	Toast	2,000	20 portions	bread (flour, egg), strawberry and blueberry jam	energy, carbohydrate, fat, protein, vitamin
		Burger	2,000	20 portions	bread, patty (meat), cucumber, tomato, lettuce	energy, carbohydrate, fat, protein, vitamin
2	Mr. R	<i>Es kocok</i> (ice shaved with sweetened flavours)	2,000	300 cups	ice cube, pop ice, popcorn, coco crunch, rice crispy	energy, carbohydrate, fat
3	Ms. I	<i>Seblak</i> (stir-fried crackers and assortments with seasonings)	1,000	30 cups	<i>kerupuk</i> (rice crackers), noodle, chili powder, cooking oil	energy, carbohydrate, fat
		<i>Cireng</i> (stir-fried crackers and assortments with seasonings)	500	20 pcs	flour, tapioca flour, cooking oil, salt	energy, carbohydrate, fat
		<i>Pangsit</i> (deep-fried fish dumpling)	500	15 pcs	flour, tapioca flour, fish cooking oil, salt	energy, carbohydrate, fat, protein
		fried banana	500	15 pcs	banana, flour, sugar	energy, carbohydrate, fat, protein, vitamin
		<i>Cilok</i> (steamed tapioca ball with seasonings)	500	20 pcs	flour, tapioca flour, cooking oil, salt	energy, carbohydrate, fat
		<i>Bubur sumsum</i>	1,000	3-5 cup	rice flour, coconut milk, salt, coconut sugar	energy, carbohydrate, fat, vitamin
		Better Biscuit	500	10-15pcs	flour, chocolate colouring	energy, carbohydrate, fat
		<i>Chocolatos</i> (choco roll)	500	10-15pcs	flour, chocolate	energy, carbohydrate, fat
<i>Pilus</i>	500	10-15pcs	flour	energy, carbohydrate		

4	MS. O	<i>Tempe goreng</i> (deep-fried <i>tempe</i>)	500	60 pcs	<i>tempe</i> , flour, cooking oil	energy, carbohydrate, fat, protein
		<i>Tahu goreng</i> (deep-fried tofu)	500	100 pcs	tofu, flour, cooking oil	energy, carbohydrate, fat, protein
		<i>Bakwan</i> (deep-fried vegetables)	500	60 pcs	carrot, cabbage, flour, cooking oil	energy, carbohydrate, fat, vitamin
		<i>Selasih</i> jelly	1,000	8 pcs	basil seed, jelly, sugar	energy, carbohydrate, vitamin
		Kiss Candy	500	15 pcs	sugar, fruit flavour	energy, carbohydrate
		<i>Milkita Lolipop</i>	500	15 pcs	sugar, milk	energy, carbohydrate
		<i>Pillow biscuit</i>	500	15 pcs	flour, sugar	energy, carbohydrate
		<i>Gorioorio</i> (cookies)	500	15 pcs	flour, chocolate, sugar	energy, carbohydrate
		<i>Teh gelas</i> (tea in cup)	1,000	8 cups	sugar, tea	energy, carbohydrate
		<i>Pino Ice</i> cup	1,000	8 cups	sugar, fruit flavour	energy, carbohydrate
		Cassava chips	1,000	5 pcs	cassava, cooking oil	energy, carbohydrate, fat
Garlic stick	1,000	5 pcs	flour, garlic, cooking oil, seasoning	energy, carbohydrate, fat		

Annex 4. Ingredients price

Raw ingredients

No.	Product Name	Unit	Price (Rp)
1	Nutrijell (jelly powder)	box of 12	18,000
2	Fruit jam	250 g	4,000
3	Pasta (artificial food colourings)	60 ml	7,000
4	Margarine	½ kg	10,500
5	Popcorn	1 kg	16,000
6	condensed milk	500 g	11,000
7	Sodium cyclamate (artificial sweetener)	40 g	3,000
8	Eggs	1 kg	23,000
9	Red beans	1 kg	25,000
10	Cilung's seasoning (breadcrumb mixed with seasoning powder)	1 kg	13,000
11	Brown sugar	1 kg	16,000
12	Black sticky rice	1 L	17,000
13	Cucumber	1 kg	4,000
14	tomato	1 kg	8,000
15	Sweet Soy Sauce	600 ml	11,000
16	Noodle	1 kg	8,000
17	Macaroni	1 kg	15,000
18	Cooking oil	1 kg	12,000
19	Seasoning powder (per 79lavor)	250 g	9,000
20	Dumpling skin	500 g	5,000
21	Bread	bag of 6 pcs	4,000
22	Burger bun	bag of 10 pcs	7,000
23	<i>Karage</i> (nugget-like)	pack of 12	3,000
24	<i>Tahu</i> (tofu)	500 g	8,000
25	Cabbage	1 kg	8,000
26	Carrot	1 kg	10,000
27	Corn	1 kg	8,000
28	Chocolate sprinkle	250 g	4,000
29	Colourful sprinkle	250 g	4,500
30	Coconut	1 fruit	8,000
31	Chicken	1 kg	35,000
32	Coco crunch	2 kg	40,000
33	Chili Powder (cayenne pepper)	250 g	15,000
34	Chili sauce	500 g	2,500
35	Crackers	250 g	4,000

36	Rice noodle	250 g	7,000
37	Cow fat	1 kg	60,000
38	Chicken 80lavor seasoning powder	26 g	2,500
39	Packed instant noodle	2 kg	27,000
40	<i>Otak-otak</i> (fishball)	250 g	3,000
41	Sausage	500 g	13,000
42	Burger pattie	250 g	8,000
43	Sagoo (tapioca flour)	1 kg	8,000
44	Wheat flour	1 kg	7,000
45	Bread crumbs	½ kg	9,000
46	Salt	1 kg	10,000
47	Melon	1 kg	5,000
48	Peanuts	1 kg	20,000
49	Spanish onion	1 kg	25,000
50	Garlic	1 kg	18,000
51	Pepper	100 g	12,000
52	Fresh chili	1 kg	16,000
53	Candlenut	200 g	40,000
54	Fresh turmeric	1 kg	16,000
55	Fresh ginger	1 kg	30,000
56	Basil seed	100 g	10,000
57	Potato	1 kg	19,000
58	Tempe	500 g	5,000
59	Leek	100 g	500
60	Coconut milk	1 kg	25,000
61	<i>Cincau</i> (black grass jelly)	1 kg	20,000
62	Onion	1 kg	26,000
63	Green beans	1 kg	20,000
64	<i>Kangkung</i> vegetable	1 kg	6,000
65	<i>Labu siam</i> vegetable	1 kg	6,500
66	Beansprout	1 kg	9,000
67	<i>Lontong</i> (steamed rice cake)	1 kg	12,500
68	Vinegar	1 L	23,000
69	Lime	1 kg	40,000
70	Deep-fried spanish onion	1 kg	66,000
71	Beef	1 kg	120,000
72	<i>Saledri</i> (corriander)	1 kg	17,000
73	Kraft chesse	100 g	20,000
74	Shrimp powder	1 kg	90,000

Packaged snacks

No.	Product Name	Unit	Price (Rp)	individual price
1	<i>Pop Ice</i>	10 sachets	9,500	950.00
2	<i>Sisri</i>	10 sachets	3,000	300.00
3	<i>Frenta</i>	10 sachets	3,000	300.00
4	<i>Beng Beng</i>	box of 20	26,000	1,300.00
5	<i>Sarimi gelas</i> (instant noodles)	10 sachets	13,000	1,300.00
6	<i>Chocholatos</i>	box of 24	11,500	479.17
7	Jelly	pack of 10	4,000	400.00
8	<i>Makaroni</i> (crispy macaroni coated with seasoning powder)	pack of 20	4,500	225.00
9	<i>Momogi</i>	box of 20	7,500	300.00
10	<i>Gery O'Donuts</i>	box of 24	10,300	429.17
11	<i>Chocorio</i>	10 sachets	3,000	300.00
12	<i>Chocogo</i>	10 sachets	3,000	300.00
13	<i>Tea jus</i>	10 sachets	3,000	300.00
14	<i>Marimas</i>	10 sachets	3,000	300.00
15	<i>Ale-ale</i>	box of 24	18,000	750.00
16	<i>Superstar</i>	box of 24	15,000	625.00
17	<i>Okky jelly drink</i>	box of 24	18,500	770.83
18	<i>Teh gelas</i>	box of 24	18,500	770.83
19	Kiss Candy	pack of 24	7,500	312.50
20	Yupi	box of 24	9,500	395.83
21	Pizza Yupi	box of 24	10,000	416.67
22	<i>Slai o'lai</i>	box of 12	10,000	833.33
23	<i>Oreo</i>	box of 12	10,000	833.33
24	<i>Nextar</i>	box of 10	17,000	1,700.00
25	<i>Oreo soft cake</i>	box of 12	5,000	416.67
26	<i>Keju cake</i>	box of 12	5,000	416.67
27	<i>Sukro</i>	pack of 30	6,000	200.00
28	<i>Siip</i>	box of 20	7,500	375.00
29	<i>Mie kremez</i>	box of 24	8,000	333.33
30	<i>Pilus</i>	pack of 20	8,000	400.00
31	<i>Better Biscuits</i>	10 sachets	7,500	750.00
32	<i>Kacang garuda atom</i>	pack of 20	8,200	410.00
33	<i>Kacang dua kelinci</i>	pack of 20	8,000	400.00
34	<i>Walens choco soes</i>	pack of 20	8,000	400.00
35	<i>Pillow</i> (biscuit with chocolate)	10 sachets	4,000	400.00
36	<i>Klik cracker</i>	pack of 20	8,000	400.00
37	<i>Choco time</i>	10 sachets	4,000	400.00
38	<i>Sosis so nice</i>	jar of 24	19,000	791.67

39	<i>Energen</i>	10 sachets	12,000	1,200.00
40	<i>Gary salut</i>	pack of 20	10,000	500.00
41	<i>Air Mineral</i> (mineral water)	box of 24	41,000	1,708.33
42	Hot Pop Candy	pack of 20	5,000	250.00
43	Cha Cha chocolate	box of 24	13,000	541.67
44	Nata de coco	box of 24	15,000	625.00
45	Big Cola	box of 12	29,500	2,458.33
46	<i>Susu ultramilk</i>	box of 40	92,000	2,300.00
47	<i>Susu indomilk</i>	box of 40	90,000	2,250.00
48	Panther energy drink	box of 24	17,500	729.17

Annex 5. Interview questions for Continue vendors

Interview questions for Intervened Vendors (continue selling)

Interview place: _____

Date of interview: _____

Name of respondent: _____

Fixed stall / Mobile

Name of snack: _____

Section 1: Demographics, business characteristics

1. Age: _____

2. Gender of respondent: M / F

3. Marital status:

1. Single	2. Married	3. Divorced	4. Widowed
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4. Number of children: _____

5. Education level:

1. No education	2. Primary	3. Lower secondary	4. Upper secondary	5. University
-----------------	------------	--------------------	--------------------	---------------

6. Does your house have 24-hour access to running **water and electricity**?

1. Yes	2. No
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7. Do you own a refrigerator at home?

1. Yes	2. No
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8. How long have you been selling snacks?

1. Less than 1 year	2. 1-3 years	3. 3-5 years	4. More than 5 years
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9. How much is your average revenue from selling snacks per day?

10. Does your business earn profit?

1. Yes	2. No
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11. Do you have any other sources of income?

1. Yes (Go to Question 12)	2. No (Go to question 13)
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12. What are your other sources of income?

13. How much is your average expense per day? (exclude the costs for snack ingredients)

14. Are you the only income earner of your family?

1. Yes	2. No
--------	-------

15. Do you sell only in 1 school or more than 1 schools?

1. Only in 1 school	2. More than 1 schools. How many? _____
---------------------	---

16. Why did you select your current selling location?

1. No other choice	2. Profitable location	3. Convenient for me (near home)	4. It was allocated to me by _____	5. Others _____
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17. Do you sell snack only to students?

1. Yes	2. No. I also sell to _____
--------	-----------------------------

18. Which Grade your student customers mostly come from?

1. Grade 1-4	2. Grade 5-6
--------------	--------------

19. Where did you learn to make your snack?

1. I came up by myself	2. From relatives or friends	3. From my past work experience	4. Others _____
------------------------	------------------------------	---------------------------------	-----------------

20. Have you ever received training on nutrition?

1. Yes, (When? Where?) _____	2. No.
------------------------------	--------

21. Have you ever received training on food hygiene?

1. Yes, (When? Where?) _____	2. No.
------------------------------	--------

Section 2: Ingredient supply

22. Where do you mainly purchase the ingredients? (multiple answers are accepted)

1. Local fresh market	2. Wholesale shop	3. Local retail shop	4. Own production	5. Others _____
-----------------------	-------------------	----------------------	-------------------	-----------------

23. How often do you purchase the ingredients?

1. 1-2 times/week	2. 3-4 times/week	3. 5-7 times/week	4. Others _____
-------------------	-------------------	-------------------	-----------------

24. How do you travel to buy ingredients, and how much time does it take from home?
By _____. It takes _____ minutes from home.

25. What is the main criteria for your choice of ingredients? (multiple answers are accepted)

1. Cost	2. Availability	3. Children's preference	4. Ingredients' shelflife	5. Others _____
---------	-----------------	--------------------------	---------------------------	-----------------

26. How would you minimise the cost of ingredients? (multiple answers are accepted)

1. Buying in bulk	4. Buying food of compromised quality
2. Buying from wholesaler	5. Use own produce when possible
3. Buying at the end of market day	6. Others _____

27. Do you consider the nutritional quality of the ingredients you use?

1. Yes	2. No
--------	-------

Section 3: Intervened - continue to sell

28. Do you remember key lessons from the intervention?

1. Yes (Go to Question 29)	2. No (Go to Question 30)
----------------------------	---------------------------

29. If you can, please give 3 examples of **unhealthy** ingredients:

1. _____
2. _____
3. _____

30. What makes you continue to sell the new snack? [**Choose only one answer**]
(Facilitator should let the vendor think by themselves first.)

1. It is healthy for children.
2. It can sell well.
3. I can find the ingredients for new snack easily.
4. It is more profitable than the old snack.
5. Others _____

31. Does your daily revenue increase after selling the new snack?

1. Yes	2. No
--------	-------

32. During the past 3 months, how was the children's reaction to your new snack?

(Facilitator should let the vendor think by themselves first.)

1. Little interested.
2. Positive at first, but the children's interest decreases later on.
3. Still positive until now.
4. Others _____

33. What is the most useful aspect you have learned from the Intervention?

(Facilitator should let the vendor think by themselves first.)

1. Nutrition knowledge
2. Making the new snack
3. Confidence in selling the new snack
4. Realising that my snack contributes to children's health
5. Others _____

34. If you had not attended the Intervention, would you be able to produce and sell this new snack?

1. Yes	2. No
--------	-------

35. In your opinion, what makes children buy the snack?

(multiple answers accepted, but must indicate No. 1 reason)

1. Taste	2. Look	3. Price	4. Quantity	5. Others _____
----------	---------	----------	-------------	-----------------

36. In your opinion, what **local produce** has potentials to be used as snack ingredient? How would you prepare it? What could be the obstacle in selling this local produce?

Name of local produce: _____

Method of cooking: _____

Obstacles:

1. The cost is too high.
2. Children cannot afford to buy the new snack at higher price.
3. Children don't prefer.
4. The new ingredients are hardly available.
5. The new ingredients are difficult to store.
6. The new ingredients are difficult to prepare.
7. It is not profitable.

Annex 6. Interview questions for Discontinue vendors

Interview questions for Intervened Vendors (discontinue selling)

Interview place: _____

Name of respondent: _____

Fixed stall / Mobile

Name of snack: _____

Date of interview: _____

Section 1: Demographics, business characteristics

1. Age: _____

2. Gender of respondent: M / F

3. Marital status:

1. Single	2. Married	3. Divorced	4. Widowed
-----------	------------	-------------	------------

4. Number of children: _____

5. Education level:

1. No education	2. Primary	3. Lower secondary	4. Upper secondary	5. University
-----------------	------------	--------------------	--------------------	---------------

6. Does your house have 24-hour access to running **water and electricity**?

1. Yes	2. No
--------	-------

7. Do you own a refrigerator at home?

1. Yes	2. No
--------	-------

8. How long have you been selling snacks?

1. Less than 1 year	2. 1-3 years	3. 3-5 years	4. More than 5 years
---------------------	--------------	--------------	----------------------

9. How much is your average revenue from selling snacks per day?

10. Does your business earn profit?

1. Yes	2. No
--------	-------

11. Do you have any other sources of income?

1. Yes (Go to Question 12)	2. No (Go to question 13)
----------------------------	---------------------------

12. What are your other sources of income?

13. How much is your average expense per day? (exclude the costs for snack ingredients)

14. Are you the only income earner of your family?

1. Yes	2. No
--------	-------

15. Do you sell only in 1 school or more than 1 schools?

1. Only in 1 school	2. More than 1 schools. How many? _____
---------------------	---

16. Why did you select your current selling location?

1. No other choice	2. Profitable location	3. Convenient for me (near home)	4. It was allocated to me by _____	5. Others _____
--------------------	------------------------	----------------------------------	------------------------------------	-----------------

17. Do you sell snack only to students?

1. Yes	2. No. I also sell to _____
--------	-----------------------------

18. Which Grade your student customers mostly come from?

1. Grade 1-4	2. Grade 5-6
--------------	--------------

19. Where did you learn to make your snack?

1. I came up by myself	2. From relatives or friends	3. From my past work experience	4. Others _____
------------------------	------------------------------	---------------------------------	-----------------

20. Have you ever received training on nutrition?

1. Yes, (When? Where?) _____	2. No.
------------------------------	--------

21. Have you ever received training on food hygiene?

1. Yes, (When? Where?) _____	2. No.
------------------------------	--------

Section 2: Ingredient supply

22. Where do you mainly purchase the ingredients? (multiple answers are accepted)

1. Local fresh market	2. Wholesale shop	3. Local retail shop	4. Own production	5. Others _____
-----------------------	-------------------	----------------------	-------------------	-----------------

23. How often do you purchase the ingredients?

1. 1-2 times/week	2. 3-4 times/week	3. 5-7 times/week	4. Others _____
-------------------	-------------------	-------------------	-----------------

24. How do you travel to buy ingredients, and how much time does it take?
 By _____. It takes _____ minutes from home.

25. What is the main criteria for your choice of ingredients?
 (multiple answers are accepted)

1. Cost	2. Availability	3. Children's preference	4. Ingredients' shelflife	5. Others _____
---------	-----------------	--------------------------	---------------------------	-----------------

26. How would you minimise the cost of ingredients? (multiple answers are accepted)

1. Buying in bulk	4. Buying food of compromised quality
2. Buying from wholesaler	5. Use own produce when possible
3. Buying at the end of market day	6. Others _____

27. Do you consider the nutritional quality of the ingredients you use?

1. Yes	2. No
--------	-------

Section 3: Intervened - discontinue

28. Do you remember key lessons from the intervention?

1. Yes (Go to Question 29)	2. No (Go to Question 30)
----------------------------	---------------------------

29. If you can, please give 3 examples of **unhealthy** ingredients:

1. _____
2. _____
3. _____

30. What discourages you from selling the new snack? **[Choose only one answer]**

1. The cost is too high.
2. Children cannot afford to buy the new snack at higher price.
3. Children don't prefer.
4. The new ingredients are hardly available.
5. The new ingredients are difficult to store.
6. The new ingredients are difficult to prepare.
7. It is not profitable.
8. Others _____

31. During the past 3 months, how was the children's reaction to your new snack?
(Facilitator should let the vendor think by themselves first.)

1. Little interested.
2. Positive at first, but the children's interest decreases later on.
3. Still positive until now.
4. Others _____

32. Since when did you stop selling the new snack?

1. Immediately after the Intervention	3. After selling for __ months
2. After selling for __ weeks	4. Others _____

33. If you are asked to come up with the new snack, what would be the most important criteria for consideration?

1. Nutritional value
2. Cheap cost
3. Availability of ingredients
4. Children's preference
5. Others _____

34. In your opinion, what makes children buy the snack?
(multiple answers accepted, but must indicate No. 1 reason)

1. Taste	2. Look	3. Price	4. Quantity	5. Others _____
----------	---------	----------	-------------	-----------------

8. In your opinion, what **local produce** has potentials to be used as snack ingredient?
 How would you prepare it? What could be the obstacle in selling this local produce?

Name of local produce: _____

Method of cooking: _____

Obstacles:

1. The cost is too high.
2. Children cannot afford to buy the new snack at higher price.
3. Children don't prefer.
4. The new ingredients are hardly available.

5. The new ingredients are difficult to store.
6. The new ingredients are difficult to prepare.
7. It is not profitable.
8. Others _____

Annex 7. Interview questions for Control vendors

Interview questions for Control Vendors

Interview place: _____

Name of respondent: _____

Fixed stall / Mobile

Name of snack: _____

Date of interview: _____

Section 1: Demographics, business characteristics

1. Age: _____

2. Gender of respondent: M / F

3. Marital status:

1. Single	2. Married	3. Divorced	4. Widowed
-----------	------------	-------------	------------

4. Number of children: _____

5. Education level:

1. No education	2. Primary	3. Lower secondary	4. Upper secondary	5. University
-----------------	------------	--------------------	--------------------	---------------

6. Does your house have 24-hour access to running **water and electricity**?

1. Yes	2. No
--------	-------

7. Do you own a refrigerator at home?

1. Yes	2. No
--------	-------

8. How long have you been selling snacks?

1. Less than 1 year	2. 1-3 years	3. 3-5 years	4. More than 5 years
---------------------	--------------	--------------	----------------------

9. How much is your average revenue from selling snacks per day?

10. Does your business earn profit?

1. Yes	2. No
--------	-------

11. Do you have any other sources of income?

1. Yes (Go to Question 12)	2. No (Go to question 13)
----------------------------	---------------------------

12. What are your other sources of income?

13. How much is your average expense per day? (exclude the costs for snack ingredients)

14. Are you the only income earner of your family?

1. Yes	2. No
--------	-------

15. Do you sell only in 1 school or more than 1 schools?

1. Only in 1 school	2. More than 1 schools. How many? _____
---------------------	---

16. Why did you select your current selling location?

1. No other choice	2. Profitable location	3. Convenient for me (near home)	4. It was allocated to me by _____	5. Others _____
--------------------	------------------------	----------------------------------	------------------------------------	-----------------

17. Do you sell snack only to students?

1. Yes	2. No. I also sell to _____
--------	-----------------------------

18. Which Grade your student customers mostly come from?

1. Grade 1-4	2. Grade 5-6
--------------	--------------

19. Where did you learn to make your snack?

1. I came up by myself	2. From relatives or friends	3. From my past work experience	4. Others _____
------------------------	------------------------------	---------------------------------	-----------------

20. Have you ever received training on nutrition?

1. Yes, (When? Where?) _____	2. No.
------------------------------	--------

21. Have you ever received training on food hygiene?

1. Yes, (When? Where?) _____	2. No.
------------------------------	--------

Section 2: Ingredient supply

22. Where do you mainly purchase the ingredients? (multiple answers are accepted)

1. Local fresh market	2. Wholesale shop	3. Local retail shop	4. Own production	5. Others _____
-----------------------	-------------------	----------------------	-------------------	-----------------

23. How often do you purchase the ingredients?

1. 1-2 times/week	2. 3-4 times/week	3. 5-7 times/week	4. Others _____
-------------------	-------------------	-------------------	-----------------

24. How do you travel to buy ingredients, and how much time does it take?
 By _____. It takes _____ minutes from home.

25. What is the main criteria for your choice of ingredients?
 (multiple answers are accepted)

1. Cost	2. Availability	3. Children's preference	4. Ingredients' shelf life	5. Others _____
---------	-----------------	--------------------------	----------------------------	-----------------

26. How would you minimise the cost of ingredients? (multiple answers are accepted)

1. Buying in bulk	4. Buying food of compromised quality
2. Buying from wholesaler	5. Use own produce when possible
3. Buying at the end of market day	6. Others _____

27. Do you consider the nutritional quality of the ingredients you use?

1. Yes	2. No
--------	-------

Section 3: Current snack details

Method of cooking: _____

Ingredients	Do you think it's healthy? (Yes / No)	Effects to health (Specify / or 'don't know')
1.		
2.		
3.		
4.		
5.		
6.		

Section 4: Possibility for Control Vendors to sell healthy snack

28. In your opinion, what makes children buy the snack?
 (multiple answers accepted, but must indicate No. 1 reason)

1. Taste	2. Look	3. Price	4. Quantity	5. Others _____
----------	---------	----------	-------------	-----------------

29. Can you provide some healthy ingredients which you can use to make snack?
Also state the effects to health if you know.

Healthy ingredients	Effects to health (Specify / or 'don't know')
1.	
2.	
3.	
4.	
5.	

30. In your opinion, what **local produce** has potentials to be used as snack ingredient?
How would you prepare it? What could be the obstacle in selling this local produce?

Name of local produce: _____
Method of cooking: _____

Obstacles:

1. The cost is too high.
2. Children cannot afford to buy the new snack at higher price.
3. Children don't prefer.
4. The new ingredients are hardly available.
5. The new ingredients are difficult to store.
6. The new ingredients are difficult to prepare.
7. It is not profitable.
8. Others _____

Annex 8. Interview questions for children

Interview questions for schoolchildren

School: _____

Respondent name: _____

[No. ____]

Date of interview: _____

Demographics & Snack-buying characteristics

1. Age: _____
2. Gender of respondent: M / F
3. Grade: _____

4. Do you eat breakfast at home before you come to school?

1. Yes	2. No
--------	-------

5. How much money per day do you get from your parents? _____

6. Do you buy snack at school every day?

1. Yes	2. No, I usually buy _____ times / week
--------	---

7. For which meal do you buy snacks? (multiple answers are accepted)

1. Breakfast	2. Morning break	3. Lunch	4. Others _____
--------------	------------------	----------	-----------------

8. What is your most frequently-bought snack? _____

9. Do you always buy snack from the same vendor?

1. Yes	2. No, I usually buy from _____ vendors.
--------	--

10. How much is a maximum price you can afford for a piece of snack? _____

11. What is the main criterion for your choice of snack? **[Choose only one answer]**

1. Taste	2. Look	3. Price	4. Quantity	5. Others _____
----------	---------	----------	-------------	-----------------

12. What is the main criterion for your choice of vendor? **[Choose only one answer]**

1. The type of snack	5. Vendor whom I know personally
2. The price of snack	6. Vendor who gives larger portion
3. Vendor's cleanliness	7. Vendor who is located nearest
4. Vendor who is nice and friendly	8. Others _____

13. Do you know the nutritional value of the snack you eat?

1. Yes	2. No
--------	-------

14. Do you normally consider the nutritional value before you buy the snack?

1. Yes	2. No
--------	-------

Annex 9. Interview questions for parents

Interview questions for parents

Parent in school: ____

Respondent name: _____

[No. ____]

Date of interview: _____

Place of interview: _____

Section 1: Demographics & Perceptions

1. Age: _____

2. Gender of respondent: M / F

3. Occupation: _____

4. Education level:

1. No education	2. Primary	3. Lower secondary	4. Upper secondary	5. University
-----------------	------------	--------------------	--------------------	---------------

5. How many children do you have? _____

6. What is the age of your children?

1. _____ M / F	2. _____ M / F	3. _____ M / F	4. _____ M / F
----------------	----------------	----------------	----------------

7. How much money per day do you give each of your children to school?

Child No. 1 _____	Child No. 2 _____	Child No. 3 _____	Child No. 4 _____
-------------------	-------------------	-------------------	-------------------

8. What is the basis of giving such amount of money?

1. This is the amount I can afford to give my children.
2. Since I don't provide breakfast at home, this amount covers meal and snack.
3. This amount is enough to buy small snacks.
4. This amount matches what other parents give to their children.
5. Others _____

9. Do you instruct your children to buy certain types of snacks and not others?

1. Yes, such as _____ _____	2. No
--------------------------------	-------

10. What is your perception regarding the snacks sold by vendors in the following?

Price:

1. Cheap	2. Just right	3. Expensive	4. Don't know
----------	---------------	--------------	---------------

Nutrition:

1. Low in nutrients	2. Adequate	3. Nutritious	4. Don't know
---------------------	-------------	---------------	---------------

Quality of ingredients used:

1. Poor quality	2. Acceptable	3. Good quality	4. Don't know
-----------------	---------------	-----------------	---------------

Cleanliness in preparation:

1. Not clean	2. Acceptable	3. Very clean	4. Don't know
--------------	---------------	---------------	---------------

Packaging material used:

1. Poor quality	2. Acceptable	3. Suitable	4. Don't know
-----------------	---------------	-------------	---------------

Section 2: Awareness & Way forward

11. Are you aware that snacks consumed at school can affect the children's growth?

1. Yes	2. No
--------	-------

12. What kind of snacks do you think are nutritious? *[Choose only one answer]*

1. Any snack that is delicious.
2. Snacks which contain meat or fruits or vegetables.
3. Snacks which do not use chemical additives or preservatives.
4. Snacks which avoid using MSG.
5. Snacks which are cleanly prepared.
6. Others _____

13. How much are you willing to pay for a nutritious snack?

14. In your opinion, what is the most appropriate way to achieve the following goals?
[Facilitators should mention only the goal and let parents think by themselves first.]

Healthy snacks for children:

1. Educate the children to buy certain types of snacks and not other
2. Prohibit children from buying snack completely by not giving them money

3. Provide homemade snacks for children to bring to school
4. Don't know
5. Others _____

Fill up the children's stomach during school hours:

1. Provide breakfast at home
2. Instruct children to buy meals or big-portion snacks at school
3. Provide homemade snacks for children to bring to school
4. Don't know
5. Others _____

Improved nutrition:

1. Support school feeding program at the parents' partial expense
2. Provide healthy meal at home
3. Educate the children to buy certain types of snacks and not other
4. Don't know
5. Others _____

Affordable snacks for children:

1. Collaboration between school, parents and vendors to set price guidelines
2. Give children little money, so that they don't spend too much on snacks
3. Allow children to buy lower quality snacks yet cheaper price
4. Don't know
5. Others _____

Food hygiene in snack preparation:

1. Directly demand vendor to adopt hygienic preparation process
2. Visit the vendor's stalls by yourself to observe snack preparation
3. Collaboration between school, parents and vendors to set food hygiene standards
4. Don't know
5. Others _____

Annex 10. Interview questions for school principal

Interview questions for school principal

Respondent name: _____

Date of interview: _____

Place of interview: _____

Vendors management, Perceptions & Improvements

1. Does the school have any involvement in the following?

Selecting vendors to operate inside the school?

1. Yes, how? _____ _____	2. No
-----------------------------	-------

Designating location inside the school for vendors?

1. Yes, how? _____ _____	2. No
-----------------------------	-------

2. Does the school require the vendors to pay any price for operating inside the school?

1. Yes, how much? _____	2. No
-------------------------	-------

3. Does the school have any mandate to manage the vendors who operate **outside** the school?

1. Yes, how? _____ _____	2. No
-----------------------------	-------

4. What is your perception regarding the snacks sold by vendors?

Price:

1. Cheap	2. Just right	3. Expensive	4. Don't know
----------	---------------	--------------	---------------

Nutrition:

1. Low in nutrients	2. Adequate	3. Nutritious	4. Don't know
---------------------	-------------	---------------	---------------

Quality of ingredients used:

1. Poor quality	2. Acceptable	3. Good quality	4. Don't know
-----------------	---------------	-----------------	---------------

Cleanliness in preparation:

1. Not clean	2. Acceptable	3. Very clean	4. Don't know
--------------	---------------	---------------	---------------

Packaging material used:

1. Poor quality	2. Acceptable	3. Suitable	4. Don't know
-----------------	---------------	-------------	---------------

5. Does the school have any mandate to ensure the quality of snacks sold by vendors?

1. Yes, how? _____ _____	2. No
-----------------------------	-------

6. Is the school willing to instruct the vendors to increase nutritional quality of snacks?

1. Yes. Tentative plan? _____ _____	2. No. What could be the obstacles? _____ _____
--	--

7. Do the teachers instruct the children to buy certain types of snacks and not others?

1. Yes, how? _____ _____	2. No
-----------------------------	-------

8. In your opinion, what is the most appropriate way to achieve the following goals?

[Facilitators should mention only the goal and let School Principal think by themselves first.]

Healthy snacks for children:

1. Request every vendor to report all of their ingredients used
2. Impose ban on vendors who use ingredients which harm children's health
3. Educate the children to buy certain types of snacks and not other
4. Don't know
5. Others _____

Improved nutrition:

1. Request parents to provide breakfast for the children at home
2. Impose ban on vendors who use ingredients which harm children's health
3. Educate the children about nutrition in classroom
4. Don't know
5. Others _____

School's cleanliness:

1. Inspect the selling area regularly
2. Impose rules on school cleanliness for children and vendors
3. Educate the children to dispose trash in the rubbish bin
4. Don't know
5. Others _____

Affordable snacks for children:

1. Set price guidelines for vendors to comply
2. Not charging vendors for selling snacks on school premise
3. Provide subsidy for vendors who sell healthy snacks
4. Don't know
5. Others _____

Control measures on vendors:

1. Issue permit - Allow only permitted vendors to sell snacks on school premise
2. Impose zoning - Allow only healthy snacks to be sold on school ground
3. Hold regular meeting with vendors to ensure compliance
4. Don't know
5. Others _____

Food hygiene at school:

1. Encourage vendors and children to wash hands
2. Provide hygiene-promoted facilities such as tap water, trash bins
3. Educate the children about food hygiene in classroom
4. Don't know
5. Others _____