

**UNDERSTANDING ACTORS AND FACTORS THAT INFLUENCE THE
DEVELOPMENT OF OBESITY AMONG PRE-SCHOOLERS IN THE BANGKOK
METROPOLITAN AREA**

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ABSTRACT

In Thailand, obesity in children aged 0-6 increased by 40% between 2004 and 2009, and urban residence was a significant risk factor. My study investigates actors and factors that influence obesity among pre-schoolers in the Bangkok Metropolitan Area. I use ecological system theory as a framework and employ a qualitative inductive approach to data collection to capture the temporal and spatial specificity of consumption. Pre-schoolers and caregivers and their interactions around food are my focus; however, I also investigate policy and interventions at national and institutional levels that influence childhood obesity. As part of a nested case study design, I select three kindergartens used by families of varying socio-economic status, and the homes of 18 pre-schoolers attending these kindergartens. My main method is participant observation and I use formal and informal interviews to gain more understanding of the data derived from the observation.

I identify three domains of food consumption: main meals, milk, and snacks, which are also the focus of Thai government policy addressing undernutrition. The effectiveness of these policies is affected by caregivers' values concerning child-rearing and feeding, and by children's characteristics and agency, expressed through their negotiation of their food choices with adults. While the lifestyles of employed parents and the obesogenic environment of the metropolitan area contribute to adults' decisions concerning children's food, socio-economic status is found to be a minor influence. More important are the values that adults hold, shaped by campaigns from the government and the private sector; e.g. buying expensive fortified milk because *milk is good for children*. My thesis shows how this combination of social and economic factors leads to the consumption of food high in sugar and calories.

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CHAPTER 1: A STUDY OF CHILDHOOD OBESITY IN URBAN THAILAND

1.1 Introduction

Obesity in children aged 0-6 increased in Thailand by 40% between 2004 and 2009, with urban residence a significant risk factor (Aekplakorn & Mo-suwan, 2009; Firestone et al., 2011). The current body of knowledge in Thailand is dominated by studies of the prevalence of this health problem, with few studies exploring the factors influencing childhood obesity. There is a need for further investigation into the causes of the problem, especially those related to sociocultural factors, the findings of which will be useful for prevention policies. For this reason I focus on understanding the mechanisms of factors influencing childhood obesity such as the consumption of calorically-dense foods, incorporating multiple perspectives on the problems, including those of children, and explore people's own constructions of their food practices. I use qualitative methods to understand the problem in the Bangkok Metropolitan Area.

I adopt ecological systems theory (EST) as a framework (Bronfenbrenner, 1974) and employ a qualitative inductive approach to data collection designed to capture the temporal and spatial specificity of food consumption. Pre-schoolers and caregivers and their interactions around food are my focus; however, I also investigate national and institutional policy and interventions that influence childhood obesity. As part of a nested case study design I select three kindergartens used by families of varying socio-economic status, and the homes of 18 pre-schoolers attending these kindergartens. My main method is participant observation, and I use formal and

informal interviews with children, caregivers and kindergarten staff to gain more understanding of the data derived from the observation.

Findings (themes) are presented under four categories; meals consumption (Chapter 4), milk consumption (Chapter 5), snacks consumption (Chapter 6), and policy and intervention at the macro level (Chapter 7) that plays a part in managing the obesogenic environment in Thailand. Chapters 4-6 develop my argument about the creation of an obesogenic environment and children's agency in the three main areas of main meals, milk, and snacks practices. These interactions are essentially challenging to address because they raise issues of identity, culture, power and control, in addition to the economic interests presented in Chapter 3. Presenting the findings according to the groups of food that the children consume also allows me to illustrate factors embedded in different layers of society according to EST (detailed in this chapter) and explain the links between these factors. Both adults' and children's views and experiences are taken into account and presented under all three groups. Grouping the findings into these four categories also facilitates the development of recommendations to practitioners and agencies working on relevant issues in Thailand

1.2 Background

In the 1960s an increase in the overweight and obese population was observed in the USA (Caballero, 2007).¹ These health conditions were formally recognised as a global

¹The World Health Organization (WHO) defines the state of being overweight or obese as abnormal or excessive fat accumulation that may impair health. WHO has developed measurement standards to monitor child growth which are used for measuring weight and obesity in children aged 0-5 years, and weight- and length/height-for-age measurements are widely employed around the world (WHO, 2007). In the Thai national survey obesity is defined as weight for height above two standard deviations or excess weight above 120% of the median for weight given the child's age, height, and gender (Mo-Suwan, 2008); 'overweight' is defined as weight for height above 1SD and below 2SD (WHO, 2007)

epidemic in 1997 by the World Health Organization (WHO). The continued increase in the prevalence of obesity in children is of great global and regional concern (de Onis et al., 2010).

Thailand witnessed a significant increase in its overweight and obese population between 2000 and 2009 from 13-28% in males and from 23-41% in females (Pitayatienanan et al., 2011). National Health Examination Surveys indicate a significant increase in obesity prevalence, especially in children in urban areas (Aekplakorn & Mo-suwan, 2009). They report that 5.8% of children aged 0-6 were overweight and obese in 1997, increasing to 7.9% in 2001 (Mo-Suwan et al., 2004; National Health Examination Survey Network, 1997). A health examination survey in 2009 reported that 8.5% of children aged 1-5 were overweight and/or obese and that boys in all age groups were at higher risk of being overweight and obese than girls (National Health Examination Survey Network, 2010). There was an overall increase of approximately 40% in overweight and/or obesity prevalence in this age group from 2004-2009².

This chapter is divided into four sections: the first section presents a review of literature concerning influential factors in childhood obesity identified internationally and in Thailand; the second section presents the theoretical frameworks used in the study; the third section discusses how data obtained from the literature review was used in the design of the study, and the fourth section proposes the areas of knowledge to which this study aims to contribute.

²The prevalence of overweight and obesity in Thailand is reported together, which this makes estimates of prevalence less reliable.

The literature reviewed in this chapter is used solely to set up a framework for the data collection. Further relevant literature is reviewed and presented in the appropriate chapters.

1.3 Understanding childhood obesity

Empirical evidence shows that childhood obesity can adversely affect virtually every organ system in the human body and is associated with increased adult mortality from a wide variety of systemic diseases (Han et al., 2010). The prevention of obesity in children is suggested as the most effective response (Waters et al., 2010). Children of pre-school age (3-5 years old) are exposed to more social and environmental factors outside the home setting than younger children. I have made this group the focus of my study to understand the various actors and social systems that children in this group engage with. At this age, children depend on their caregivers (Kail, 2010), who play a critical role in shaping their environmental surroundings, including the selection of dietary intake and activities. Caregivers include parents, grandparents, relatives, siblings, and non-relative caregivers (e.g. nannies or neighbours and kindergarten teachers). I also include other adults in order to make a holistic study of childhood obesity (see Chapter 2).

Recognising the problems of obesity, the research community has tried to understand its aetiology, measure the size of the problem and its impacts, investigate the causative factors and develop and evaluate interventions designed to prevent and treat the condition, as I discuss below.

Epidemiology has been the dominant approach employed to explore the factors causing childhood obesity.³ Previous studies of the determinants of obesity have covered not only genetic factors but also social behaviour and psychological, sociocultural, socio-economic, and environmental factors. The most significant school of thought on the study of Wilkinson and Marmot (2003), based on early investigations of health inequality which highlight the social and economic factors that contribute to a population's health status. Their social determinants of health (SDH) concept considers the influences of social and environmental factors on people's lifestyle and health behaviours. This concept was adopted by WHO in 2012, which developed its Global Plan of Action on Social Determinants of Health and distributed it to member states (World Health Organization, 2012). The concept of including social and environmental factors in the investigation of health determinants has also been adopted in the area of childhood obesity studies: examples include K. K. Davison and Birch (2001), who used the EST framework to map and present the determinants of childhood obesity that were obtained from literature review. These include child-feeding practices, family TV viewing time, school lunch programs and parents' working hours; Patrick and Nicklas (2005) conducted a review to examine family and the social determinants of children's eating patterns and diet quality. They emphasise the importance of physical and social environments such as mealtime structure in shaping children's eating patterns. Sharma and Ickes (2008) performed a comprehensive review focusing on the identification of psychosocial determinants of childhood obesity. They identify determinants similar to those found by Davison and Birch, but

³'Epidemiology is the study of the distribution and determinants of health-related states or events including disease, and the application of this study to the control of diseases and other health problems. Various methods can be used to carry out epidemiological investigations: surveillance and descriptive studies can be used to study distribution; analytical studies are used to study determinants'. (source: <http://www.who.int/topics/epidemiology/en/>)

emphasise environmental factors such as food commercialism, technology, and urban and socio-economic development. These studies are examples of the comprehensive reviews of the available evidence at the global level which have shaped my study by directing my interest to factors from wider social and economic systems.

1.3.1 Factors related to the onset of obesity in children

I started this review by searching for literature on Asia (the most relevant study was performed in Hong Kong in 2010) and developing countries using four databases: PubMed, Web of Science, Scopus and CINAHL Plus. Keywords used were (child* OR preschool*) AND (obese* OR overweight OR eating behaviour OR physical activity) AND (Asia OR developing countries). The search was performed in April 2013. However, when I applied the terms 'factor' or 'determinant' to the search the results were limited. Therefore I chose to start exploring determinants of childhood obesity by studying research papers that used a systematic review method so that I can explore a wide-range of determinants of childhood obesity without limiting the study's locations

A number of longitudinal and cross-sectional studies have been carried out to investigate the factors causing childhood obesity. In the course of my review I selected studies to provide an overview of such factors by focusing exclusively on (i) research studies that used systematic review method, (ii) studies not specific to a single country and (iii) studies of either factors or determinants of childhood obesity. These identified factors can be grouped into those related to biological factors, e.g. a direct genetic link to parents or child's sex, age and ethnicity; early health background, e.g. birth weight, maternal smoking, breastfeeding; parents' characteristics, e.g. education, socio-economic status, attitudes; behavioural family mediators, e.g. food provision, practices

of feeding children, family physical activity patterns and; a child's behaviour, e.g. television viewing, early health background, and family behaviour (see Table 1).

Although many studies have been carried out to identify such factors, unclear evidence, conflicting results and a general absence of rigour and quality hamper the findings of cross-sectional studies (Monasta et al., 2010). Monasta et al (2010, p. 695) note that 'it is difficult to establish a causal association between possible determinants and obesity, and the relative importance of each determinant'. An important limitation of any systematic synthesis of the evidence is that the different studies employ different factor and outcome measurements; e.g. some measure behavioural changes over a certain time period while others measure weight changes.

Table 1.1, which uses the taxonomy developed by (Tabacchi et al., 2007), shows that while some of the factors affecting obesity are predetermined and immune to intervention (e.g. genetics) others are the result of choices that can be modified (e.g. child-feeding practices). My study focuses on the modifiable factors associated with dietary intake rather than fixed factors such as genetic conditions and long-term disease. While debate continues on the influence of environmental and contextual factors on obesity (e.g. spaces for recreational activities, the growth of the fast-food market), definite conclusions are yet to be reached (Maziak et al., 2008; Sharma & Ickes, 2008), and my study will contribute to this end.

Tabacchi et al.'s (2007) review groups available knowledge on obesity determinants among young children into genetic and environment-related factors. The first group includes biological sex, ethnicity, and genes while the second group covers

geographical region, culture, religion, family, and society. This categorisation is expected to help with understanding the causes of obesity among pre-schoolers and of how one factor contributes to other factors, e.g. low salary can reduce the ability to buy high-quality food and to pay for participation in sports. This review is different from other epidemiological studies of determinants of childhood obesity in that it comprehensively incorporates sociocultural factors, including the obesogenic environment, in the framework.⁴

	Factors in obesity identified from the literature
Biological factors	<ul style="list-style-type: none"> • Direct genetic links between parent and child weight status (L. L. Birch & Davison, 2001) • Child's genes, sex, age, and race (Sharma & Ickes, 2008)
Early health background	<ul style="list-style-type: none"> • High birth weight, rapid growth in infancy, maternal smoking during pregnancy, lack of breastfeeding (Sharma & Ickes, 2008) • Maternal diabetes, obesity in infancy, short sleep duration (Monasta et al., 2010)
Parents' characteristics	<ul style="list-style-type: none"> • Education, ethnicity, time constraints, attitudes (Patrick & Nicklas, 2005) • Socio-economic status (Shrewsbury & Wardle, 2008)
Behavioural mediators of family	<ul style="list-style-type: none"> • Food provision environments for children's early experiences with food and eating (L. L. Birch & Davison, 2001; Sharma & Ickes, 2008) • Parents' eating behaviours, food preferences (Scaglioni et al., 2011; Sharma & Ickes, 2008) • Child-feeding practices affecting child's consumption of unhealthy foods, portion sizes, snacking (Scaglioni et al., 2011; Sharma & Ickes, 2008) • Family lifestyle, activity preferences and patterns (L. L. Birch & Davison, 2001; Patrick & Nicklas, 2005; Sharma & Ickes, 2008; Tabacchi et al., 2007)
Child's behaviour	<ul style="list-style-type: none"> • Diets with a high energy density, high consumption of sugar-sweetened beverages, large portion sizes, high levels of sedentary behaviour and low levels of physical activity (K. K. Davison & Birch, 2001; Rennie et al., 2005) • Less than 30 min of daily physical activity (Monasta et al., 2010) • Television viewing (Ford et al., 2012; Monasta et al., 2010)

Table 1.1 Factors causing childhood obesity

The international scholarship on childhood obesity outlines a number of factors related to the onset of obesity in young children; for example parents' dietary practices, child-

⁴ Swinburn et al. (1999; p.564) define the obesogenic environment as 'the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations'.

feeding practices and a child's TV viewing time, as presented in Table 1.1. However, understanding of the mechanisms and interrelationships of such factors is limited. Although a review method yields lists of factors that are proven to contribute to the development of childhood obesity mainly in UK and US settings, it decontextualises them. This provides difficulties with the application of evidence for the development of policy or practice by local policymakers, practitioners and academics who want to understand the factors and mechanisms in a specific context.

The presence or absence of healthy food, healthy eating, unhealthy food and unhealthy eating have been identified in the literature as factors influencing the development of childhood obesity. In this thesis they are defined following the definitions used in this literature: "energy dense food that are unhealthy because of nutrients". These include fast food, sweetened beverages, sweets and fatty snacks (Sharma and Ickes, 2008)

Healthy food is described by Scaglioni et al. (2011) as high-satiety food with low-energy-density, for example fruit and vegetables. C. A. Bisogni et al. (2012) explored people's interpretation of healthy eating, which include healthy food, by reviewing published qualitative literature since 1995. The researchers suggested that healthy eating was interpreted in diverse and complex manner including in terms of food, food components, physical and psychosocial outcomes, and personal goals. These interpretations also adapted in different situations as well as changed over the time. I also acknowledged the complexity found by Bisogni et al (2012); however, my study employed more general definitions of healthy and unhealthy food and eating that are widely used to facilitate an effective communication between myself and research participants. In my data collection and analysis, healthy and unhealthy terms were tied

with two dimensions ‘food’—defining by the dish, e.g. sugar-sweetened beverage or energy-dense food and ‘eating practices’—defining by how people eat their food, e.g. do not eat vegetables or eat big portion. I use the terms negative and positive (eating) habits to also refer to healthy and unhealthy eating practices.

1.3.2 Obesogenic environment

There have been attempts to understand the surrounding factors that could contribute to the development of obesity among pre-schoolers as a whole, besides their diet and physical activity. Scholars have been interested in environmental influences on individual’s choices of food and physical activities and the development of obesity (Popkin et al., 2005). Examples of factors that create an obesogenic environment include easy access to cheap energy-dense food, for example in deprived areas of developed countries and limited access to healthy food choices and facilities for physical activity (Maziak et al., 2008; Procter et al., 2008).

Williams et al. (2014) conducted a systematic review of the effect of the food retail environment around schools on obesity-related outcomes among children. They suggest that rather than just focusing on retailers around educational facilities, future studies should take into account journeys taken by individual children to capture the entire environment that the child interacts with. I take this into account in my study, observing kindergartens, homes, and the journey between the two. Schmelzer and Krishnagiri (2014) employed grounded theory approach to examine the health-promoting behaviours of middle-class families living in an obesogenic environment in Ohio, USA. Time management was presented as a limitation by both caregivers and children (i.e. parents busy with work and a lot of homework for children); further cultural

aspects such as snacking and using food as a reward resulted in actions such as compromising or trading between healthy and unhealthy food/snacks in the preparation of food or snacks for children. The study recommends considering the physical and sociocultural environments of children's caregivers, which also affect the management of the children's food. This is an example of studies that pay close attention to context that is highly relevant to children's food practices, which my study also takes into account.

The concept of the obesogenic environment can provide an explanation of the environment surrounding individuals and affect their daily living conditions; however, there is a need to also understand the mechanisms of individuals' decisions and reactions (behaviours) within that environment. Such mechanisms may include the commercial advertisements to which people are exposed, and their lifestyles, including caregivers' working conditions, which shape their decision to buy ready-to-eat food rather than cooking it themselves. Additionally, the availability of unhealthy food option in the market that is cheaper and tastier than healthy ones can also influence their decisions of food consumption. The environment and individuals' interaction with it is therefore highly context-specific. In this thesis I therefore review factors relevant to the construction of the obesogenic environment in Thailand, focusing on Metropolitan Bangkok (see Chapter 3).

In the following sections (1.3.3 socio cultural influences and 1.3.4 gender and related values), I present a review of qualitative literature that studied childhood obesity influences, which are key literature that guide my study. I employed the principles of the Critical Appraisal Skills Programme (CASP) to guide my appraisal of qualitative

study literature. The basic screening criteria include a clear rationale of the study and appropriateness of the use of qualitative design to answer the research question. The detailed criteria I used to assess the literature are whether the research design and participants' recruitment strategy can address the aims of research; justification and utilisation of data collection methods; consideration of researchers' positionality, relationship of researcher and participants and ethical issues; rigour of data analysis; provision of clear findings statement; and contribution of the research (Critical Appraisal Skills Programme, 2013). These criteria are applied with international literature retrieved from electronic databases. However, the paucity of papers on these topics, especially journal articles and research reports providing data of childhood obesity and child rearing in Thai context, I included this group of literature with provision of explanation and discussion of their limitations instead.

1.3.3 Sociocultural influences

To complete the picture of the influential factors affecting obesity, my attention now turns to the scholarship on social practices—practices that involve the context and the identities of people in a community and occur in both public and private spaces. Delormier et al (2009) propose that eating should be considered a social practice rather than the act of an isolated agent. This approach necessitates an engagement with the social context as well as with individual choice when analysing diet and eating patterns. I employ structuration theory (Stones, 2005) to help with understanding family food choices and feeding practices. Food practices and their underlying values are reproduced within families (Wills et al., 2011). Caregivers are particularly important actors who convey values and structures to children, including the 'healthy eating' values that the family holds and reproduces (Skafida, 2013). These underlying values

and patterns play an important role in shaping eating practices. Chan et al (2010) performed a qualitative study employing observation and in-depth interview methods to explore social, economic and environmental factors that influence food practices of pre-schoolers in Hong Kong. This study offers a relevant design as well as context that help guiding my study. Their findings emphasise the importance of social structure and network of actors in the society that parents and pre-schoolers interact with and shape their eating practices.

Preparing food for young children in the family is challenging. Caregivers struggle to consider multiple factors such as identity, social values, expectations and constraints. As studies of employed parents illustrate, they often draw upon networks, resources and existing knowledge in the selection and provision of food for their children. Mothers, particularly those in employment, often have additional factors to consider, but most of the time ‘time constraints are the most influential (Bava et al., 2008; Chan et al., 2010b; Slater et al., 2012). For example, a qualitative study by Slater et al. (2012), using in-depth interview to examine factors that employed mothers faced in Canada reveals that they experienced conflict when trying to identify as ‘good mothers’ who provide healthy food for their children while their working conditions and their children’s additional curricular activities prevented their meeting these expectations. To cope with those conditions, they relied on processed convenience and fast food, which conflicted with their knowledge of healthy food. Hayter et al. (2015) used focus group discussion and interview to study factors that parents of pre-schoolers from low socioeconomic families in the UK consider when preparing food for their children. Themes that were reported from their investigation are that parents are dealing with practicalities in urban living conditions, management of food with restricted budget, time constraints, lack of knowledge and confidence to prepare food and management

of conflicts between family members' food choices. The researchers concluded that poor eating practices of pre-schoolers may not be from parental ignorance but resulted from strategies that parents used to cope with all presented accounts. Findings from this study can also be used to guide my analysis.

1.3.4 Gender and related values

Van Esterik (1997) makes a case for the inclusion of power and gender concepts in the examination of food practices in industrial societies. She argues that the concept of nurture—the capacity to nourish and provide food for others—is often associated with the role of women. Evidence from Thailand shows that the prevalence of obesity is higher amongst middle-aged woman than the population mean; however, in pre-schools boys have a higher likelihood of being overweight or obese than girls (Aekplakorn & Mo-suwan, 2009). This paradox would be interesting to investigate in terms of gender concepts: for example, what differences exist in the ways that carers feed girls and boys? Gender concepts offer an interesting lens for my investigation—exploring, for example, how gender in Thai society influences the food-related practices of caregivers and pre-schoolers. Gender roles in some commercial sectors in urban Thailand have been shown to be equitable, and women's control over the household finances is thought to have improved their status in the home (Keyes, 1984; Van Esterik, 2000). In recent years changes in both women's roles and family structures have been observed in urban Thailand, and increased female employment has led to the expansion of independent childcare outside the household (Issaranurak & Suthisukon, 2007; Nanthamongkolchai et al., 2009).

The evidence presented in this section argues for the consideration of eating as a social practice. Furthermore, it has demonstrated the relevance of gender-influenced notions of the good mother, the way in which women can experience the double burden of work and childcare, and differential food norms and provision for girls and boys in Thai society. In their study of child-rearing and Thai culture Issaranurak and Suthisukon (2007) report that girls are normally taught to be reserved and that courtesy is a high priority. They are also trained to help with the housework. Boys are taught to be brave and strong and are trained to help with labour such as farming in rural areas.

1.3.5 Childhood obesity studies in Thailand

The main foci of the literature on childhood obesity in Thailand include the prevalence and monitoring of obesity-causing behaviours such as the consumption of unhealthy snacks and sweets (Aekplakorn & Mo-suwan, 2009; National Health Examination Survey Network, 2010). Pitayatienanan et al. (2011) study measuring the health-care cost of obesity to Thai society reveals that it is a significant economic burden on Thai society, with 1 billion GBP of health expenditure attributable to obesity, and a similar amount lost due to premature deaths from obesity in 2006. This shows that obesity carries considerable costs to the Thai economy and thus needs to be taken seriously. Prevention of obesity in the younger generation has been proved to be the most effective intervention for preventing this health problem in society (Waters et al., 2010).

Increasing attention has been paid to childhood obesity and substantial efforts have been made to tackle the problem in Thailand (Peungposop et al., 2011). These initiatives include educating teachers about proper nutritional intake for students by

increasing the amount of fruit and vegetables in school meals, banning sweetened-carbonated drinks in schools, etc. However, the problem of childhood obesity remains. This may be explained by the fact that most of the existing interventions target school-aged children while the increased prevalence is also observed in the pre-school population. Interventions targeting school-aged children such as the ban on sweetened-carbonated drinks only benefit children attending kindergartens on school sites. There is an absence of studies developing interventions and evaluating their effectiveness in the prevention and treatment of obesity in all age groups. The one evaluation of intervention effectiveness is that of the Department of Health's Health Promoting School Program, which takes the number of schools participating in the program as its outcome and does not investigate further (Bureau of Health Promotion, 2015a).

Another group of studies seeks to understand the factors influencing the development of childhood obesity in Thailand. The only quantitative investigation suggests that living in an urban area in Thailand is associated with a greater risk of obesity (Firestone et al., 2011). Further research is needed to understand the precise characteristics of the Thai 'urban environment' which influences the risk of obesity, as Firestone et al's study is currently alone in seeking to identify the determinants of childhood obesity in this context. No qualitative research approach has been used to understand the factors that influence the development of obesity among pre-school-aged children, and in particular the sociocultural factors in the urban Thai context. In this regard, my study adds to the exploration of the influential factors of childhood obesity in Thailand.

Few studies in Thailand emphasise understanding the values that influence food consumption practices. Sirikulchayanonta et al. (2011) reports that some parents of children in a Thai primary school held the view that overweight children are healthy and adorable. Korwanich et al. (2007), using focus group discussions, found that many parents do not want to confront their children about their health or make them feel bad about their eating habits.

The limited current knowledge of childhood obesity in Thailand, as identified through my review, highlights the need for further investigation into the causes of the problem and especially the sociocultural factors. The findings will be useful for prevention policy. For this reason I focus on understanding the mechanisms of factors influencing childhood obesity and employ qualitative methods to understand the problem from different viewpoints, including those of the children. My study focuses only on dietary intake, not physical activity because this is another area of study that requires a scale of study to explore of the issue.

My main research aim is to understand actors and factors that influence obesity among pre-schoolers in Bangkok Metropolitan area, and my data collection addresses the following sub-questions:

- What potential practices contribute to the development of childhood obesity in urban Thailand?
- What values underpin caregivers and pre-schoolers' decisions and actions in relation to food consumption?
- How do the social, cultural and economic contexts influence the food preparation and consumption practices of caregivers and pre-schoolers?

- How do children respond to and develop strategies for negotiating for their preferred eating practices in kindergarten and household systems?

1.4 Theoretical framework

I have selected two frameworks to support my study design: ecological system theory and structuration theory. Ecological system theory (EST) is employed to explore the actors and factors that influence pre-schoolers at different levels of society. Actors and factors identified from the literature (presented earlier), including data collection and analysis processes, are used as the starting point for my research design. Structuration theory (ST) is used to help to describe and present the meaningful actions and structures that influence the behaviour of caregivers, such as believing that milk is best for children, as well as their reproduction or alteration (see Chapter 5). In order to apply ST in an analysis the agent-in-focus—the agent or a group of agents that this empirical study is interested in—must be identified. The agents-in-focus here are pre-schoolers and their caregivers, including parents and kindergarten teachers.

1.4.1 Ecological System Theory

EST, or the ecology of human development, was devised by Bronfenbrenner (1974) as a tool for understanding and explaining human development as shaped by (sub)factors in the ecological system including the family, the community and the economy. In EST, the individual child is placed at the centre of the system and is surrounded by various interacting layers of systems. The microsystem includes individuals or institutions that directly influence the child, e.g. the family, peers and teachers. The exosystem involves those who indirectly affect the child and directly

affect their caregivers, e.g. a parent's work environment, the local neighbourhood. Finally, the macrosystem refers to the culture and values of the wider society, e.g. political, legal, and economic structures and mechanisms.

EST is used by scholars such as Davison and Birch (2001) and Harrison et al (2011) to understand the determinants of childhood obesity. Davison and Birch (2001) suggest that research in the area of childhood obesity needs to employ 'a broader contextual approach' to understanding the development of overweight among children, proposing that it offers a good opportunity to explore such issues because it provides a broader framework incorporating the social and environmental factors surrounding the child at different levels. An ecological model of predictors of childhood overweight is proposed. Child weight status is placed in the middle of the model as the final outcome. The next layer consists of child characteristics and risk factors and includes the three main behaviours that can place children at risk of overweight, namely dietary intake, physical activity and sedentary activity such as TV viewing, and individual characteristics, i.e. gender, age and familial susceptibility to weight gain. Harrison et al. (2011) also developed a model using Bronfenbrenner's and other relevant frameworks to systematize factors contributing to childhood obesity. The Six-Cs model offers a broader perspective on the childhood obesity problem, focusing on specific age groups at different developmental stages, namely infancy, toddlerhood, pre-school, school-age and adolescence, and the researchers encourage others to apply the model when a study on a specific age group is needed. They suggest that different factors contribute to the development of childhood obesity in each age group.

EST offers a framework for understanding influential agents and structures in the lives of pre-schoolers by dividing the factors into levels of systems, as illustrated in Figure 1. 1. The macro- and exosystems refer to the culture and values of the wider society, e.g. political, legal and economic structures and mechanisms. In addition, the system involves those who influence the child and his or her caregivers, e.g. a parent's work environment and neighbourhood environment. In the micro- and mesosystems children directly interact with teachers, siblings and peers in addition to their parents and grandparents. These interactions occur at home and at kindergarten. For example, in Chapter 5 the use of EST helps me to understand how the observed milk consumption of pre-schoolers can be explained by wider social influences such as the political economy, the physical environment and sociocultural factors. The inclusion of EST in my analysis allows for consideration of the wider networks of young children. In contrast to conventional studies of the determinants of childhood obesity which approach it exclusively as a problem of children and their caregivers, my study explores the role of a broader range of influential agents and structures in the lives of the children.

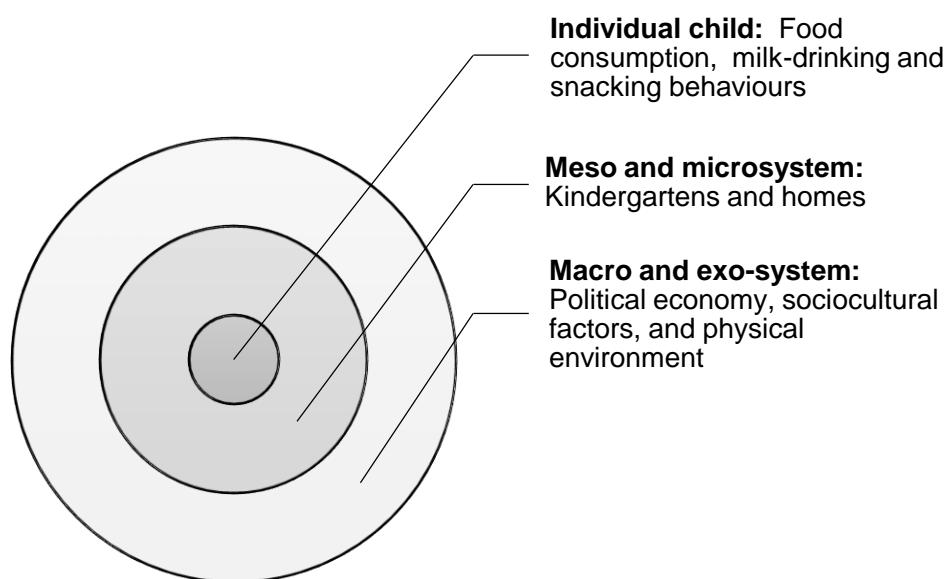


Figure 1. 1 EST applied to the study of pre-schooler behaviours that are influential in childhood obesity

Grzywacz and Fuqua (2000) note that the comprehensiveness of ecological models of health can be both their greatest strength and their greatest limitation in the synthesis of the usefulness of social ecology theory in health promotion and disease prevention studies. They see the holistic concept of EST as posing difficulties in both theory and practice; thus they propose four EST leverage points as the main focus of the application of EST in health issues to simplify this complex concept. The four points are socio-economic status and health; the family and health; employment, work and health; and school and health. I employ the comprehensiveness of EST as my framework to support the start of the data collection and to help with the analysis and presentation of my results. In addition, to manage the limitation of the absence of theoretical concepts that can be used to explain or predict the studied event (Green et al., 1996; Grzywacz & Fuqua, 2000), I draw on structuration theory (ST, described below) and use a qualitative inductive research process to test the findings that emerge during the course of the study.

1.4.2 Structuration Theory

ST explains how individual agents are influenced by social structures and how they reproduce or change them. In this study the theory is adapted from the study by Chan et al (2010b), which developed from the original work of Giddens (1984) and Stones (2005). Giddens addresses a dualism in social theory that explains social practices as the product of two orientations; (a) individual voluntary actions by actors and (b) wider structures and processes in society. Stones develops the concept, stressing the role of networks of position-practices: ‘a social position and associated identity and practice, together with the network of social relations which recognise and support it’, such as being a mother (Chan et al., 2010a, p.716), and of influential actors in society that expose an agent to the influences of external structures through social processes. For example Chan et al. report that mothers of the children in their study of childhood obesity among pre-schoolers in Hong Kong expressed the absence of a network of social relations to support their child-rearing practices because they had left their extended families and friends in Mainland China, and the urban structure of Hong Kong had not allowed them to develop such a network. This concept emphasises the quadripartite nature of structuration (see Figure 1. 2). The ST adopted in this study consists of four levels of analysis, as set out in Figure 1. 2. This study is highly relevant to my study of childhood obesity in Bangkok Metropolitan Area.

ST theory offers an approach to explaining the relationships between agents, actions, and structures at different times and in different contexts. This fits well with my proposed study of the changing values of food consumption as a social practice in a society. Data can be obtained from interviews with grandparents or by asking caregivers about changes in food practices over time, i.e. since they were themselves

children. This will also help to throw some light on the values that underpin the observed actions of the agents-in-focus. The concept of position-practice allows further exploration of the social position and identity of agents-in-focus and other agents that mediate values related to childhood obesity.

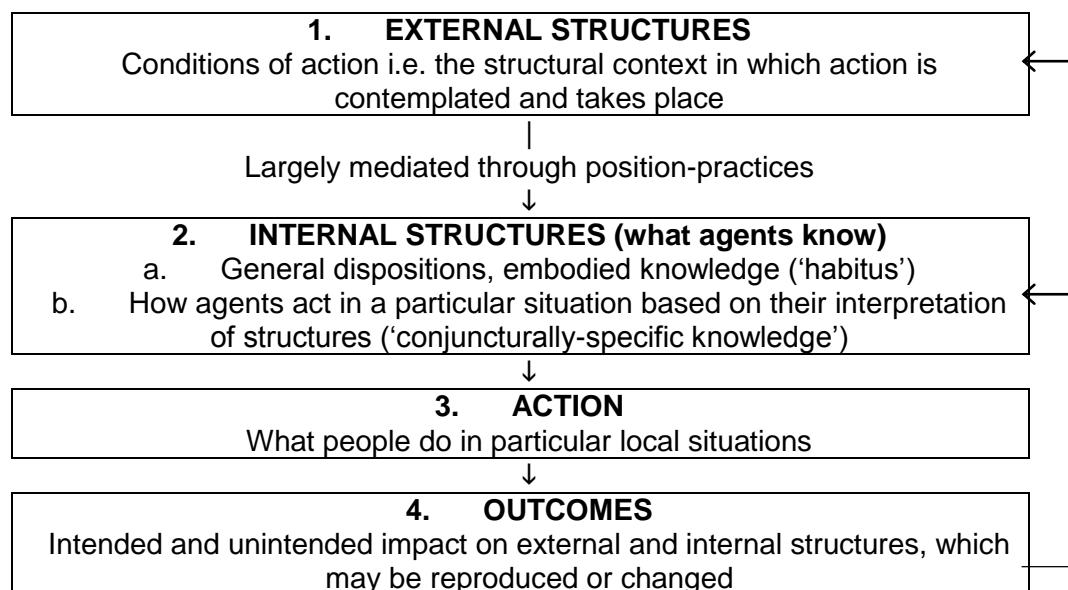


Figure 1. 2 Structuration theory: The quadripartite nature of structuration
(Source: Adapted from Chan et al (2010b) and Stones (2005))

1.5 Application of the literature to my study

The factors included in my study as a starting point are illustrated in Figure 1. 3, which covers three levels of systems that include factors that influence childhood obesity. Modifiable factors that may influence childhood obesity are included my study; for example eating habits in household and kindergarten settings. Social values and concepts (e.g. family meals, the role of the mother) and beliefs about different ways of feeding boys and girls are included in my investigation of the social context of eating.

Children's behaviour, e.g. high energy-density diet, high consumption of sweetened beverages, large portion sizes and TV viewing, is placed at the centre, as these factors

were also identified in the Thai health examination survey (National Health Examination Survey Network, 2010). Moving up a level, the familial environment includes parents' eating behaviours and food preferences, child-feeding practices, e.g. provision of unhealthy foods and large portion sizes and snacking, and family lifestyle, e.g. activity preferences and patterns. There may be similar influences from actors in relevant settings such as the nursery and neighbourhood. The final level includes factors that influence the lifestyles of key actors and pre-schoolers such as social values and beliefs, e.g. the importance of family meals, the role of the mother, and beliefs about different feeding patterns for boys and girls. The arrows in Figure 1.3 show how the relationships between different factors can be bidirectional; for example the behaviour of pre-schoolers can both influence and be influenced by the actions of their caregivers.

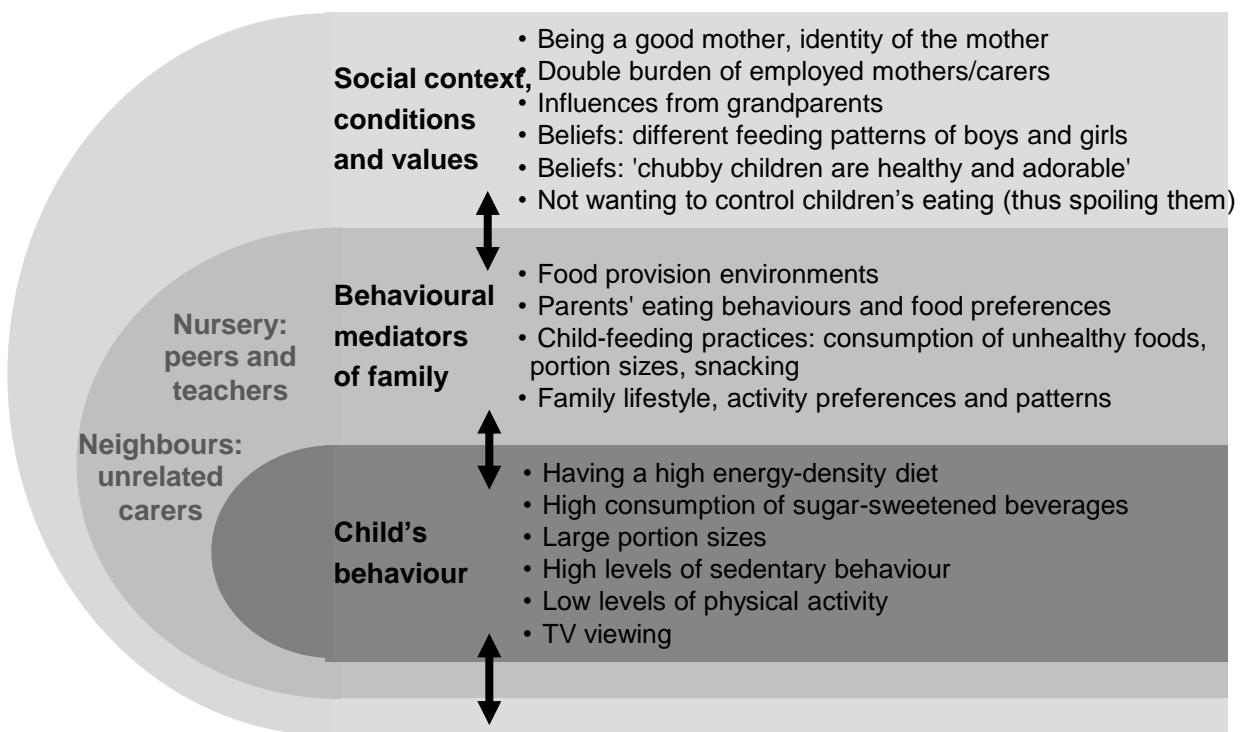


Figure 1. 3 Scope of influential factors in my study

The factors listed in Figure 1. 3 were used as a starting point for the data collection and analysis. Data concerning pre-schoolers and caregivers' food practices and activities were obtained by observation, including of physical and sedentary activities, and open-ended interviews. Social values and structures including national policy implementation were retrieved from analysis of those data and additional information in relevant policy documents and media content was also reviewed.

1.6 Contribution of this study

Much of the current literature on the causes of childhood obesity draws on epidemiological approaches, approaching obesity in the same manner as any other health condition and using epidemiology as a tool to understand its causes at the macro level. Factors causing childhood obesity that have been identified by

epidemiologists include exposure to sweetened beverages, exposure to advertisements for energy-dense food on television, sleep duration, gender and socio-economic status (Monasta et al., 2010). Nonetheless, the dominant quantitative approaches leave gaps with regard to the relationships and mechanisms of the social and epidemiological factors that individual agents face in reality. Additional influences, and the way these unfold for different groups in different settings—for example social institutions including family and school, limited access to or provision of health promotion practices, health-related culture and socio-economic statuses—have been identified through work in more qualitative fields such as the sociology of health and illness, health service research, and medical anthropology. These include studies of obesity and social structures (Chan et al., 2010b; Delormier et al., 2009; Slater et al., 2012; Warin et al., 2008) and the limitations of health promotion provision in relation to obesity (Robinson et al., 2013). Qualitative research was also employed to examine food activities as social practices, the role of the caregivers in relation to provision of food to children and food practice decisions that caregivers make by compromising social values and other constraints.

The objective of this body of literature is to understand why people do certain things, e.g. eat unhealthy food, big portions, etc. However, studies of children that treat the child as the main actor (although see (Allison & Prout, 1990; Christensen & James, 2000; Qvortrup et al., 2009)) have not yet been widely established in the field of childhood obesity. With regard to the scholarship in Thailand, most studies are concerned with prevalence and impact, as illustrated in section 1.4. Only a few studies attempt to understand the social factors that influence childhood obesity, as illustrated in Sirikulchayanonta et al. (2011) and Korwanich et al. (2007) (see section 1.3.5).

The original contribution of my study is the introduction of another important type of evidence to contribute to understanding the problem, through a study of the sociocultural factors to provide additional sources of evidence and enhance scholars' understanding of the child's world in the Thai context.

CHAPTER 2: METHODOLOGY

This chapter begins by describing the study design and how the research questions were translated into practice. The second section presents the selection and recruitment of the research participants and the gaining of their consent, and any problems I encountered that caused changes to the data collection plan. The third section discusses the data collection techniques used: participant observation, formal and informal interviews with adult participants and informal conversations with pre-schoolers. I reflect on how my positionality affected the way the adult and pre-school participants perceived me and understood my study, and how this influenced the data that I obtained from them. The fourth section describes the data analysis, illustrating the process of managing and analysing the data emerging from the field in an inductive way in parallel with ongoing data generation. The limitations and ethical challenges emerging throughout the process of the study are discussed in the relevant sections.

2.1 Study design

To answer the research questions outlined in Chapter 1 I had to place myself in the society and environment in which pre-school children live. This helped me to identify the actors and structures involved in their lives and how they influence the development of childhood obesity. The practices that other studies have shown to contribute to the development of childhood obesity have been presented as a starting point in Chapter 1.

In this study I employ Charmaz's grounded theory approach, which comes from a social constructivist standpoint and emphasises the study of action and interpretive

understanding of the data (Charmaz, 2006). I use this approach because it provides clear steps for conducting a rigorous analysis to explain the social events that I study by illuminating the interactions and mechanisms between agents and the environment in relation to food consumption. To maximise the efficiency of my data collection and analysis I used principles and practice in grounded theory, i.e. coding method as outlined by Charmaz (2006), although the grounded theory process was not applied. Combining some outputs of GT to a process of thematic analysis fitted an iterative process of collecting data, using the initial findings to identify and explore the emerging themes, guide further data collection and capturing emerging themes in data analysis the objectives of this study exploring the influence of the research participants' actions and embedded values on their food practices.

My study of the actors and structures that influence childhood obesity focuses on the role of two agents: pre-schoolers and their caregivers, including parents and teachers. Both children and caregivers can influence each other, and at the same time are influenced by overlapping and different actors and structures. The design of my study, therefore, includes observation of the above two groups of agents. Although they may face the same influences their resulting actions can differ significantly; e.g. the influence of grandparents on mothers (their daughters) can be quite different to grandparents' influence on their grandchildren. I investigate actions relating to dietary practices, including the selection and preparation of foods, and energy use such as physical activity and sedentary behaviour. The field sites include the children's homes, kindergartens and neighbourhoods, and public places such as shopping malls and markets where it is possible to see the influence of different actors and structures. Action in such places is also influenced by wider social, cultural and economic

contexts. Observing these sites allowed me to see the ongoing activities and interactions of the research participants, which helped me to understand and interpret the data I observed in a broader manner.

I used the data obtained from the literature review as my starting point to sensitise me to themes emerging from the data, but not as a template for the data collection. Although I employed the EST as a framework for my data collection, as discussed in Chapter 1, it only provides a rough guide to factors operating at each layer of the social system. For example the framework suggests that social values and policies are macro-level factors that can influence individuals' behaviour; however, it does not specifically determine which values are influential, or the mechanisms between the value and the human behaviour. This framework provides a flexible space for the study and its analysis. I was also fully open to data emerging from the field sites, although 'an open mind is not an empty head' (Dey, 1993, p.237), as when I critically reflect on these data I inevitably bring my own preconceptions as a public health researcher studying for a PhD and receiving a scholarship from Thailand's Ministry of Public Health (MoPH). I observed patterns, explained social practices that support the development of childhood obesity and tested whether my assumptions, constructed from the data, could be testable theories in further research. Such an inductive approach helped me to understand the relationships between actions, context and underlying mechanisms and to capture the specificity of human interactions in particular social contexts at particular times. For example my observation during lunchtime, when the children were eating the meal provided by the kindergarten, was invaluable for understanding how the government's school lunch policy works at the kindergarten level. In this particular setting a teacher was doing her job according to

the kindergarten's policy (derived from the government's school lunch policy) as she ensured that the children ate their lunch or finished their portion; meanwhile the children had their own strategies, such as transferring food they did not like to their peers (see Chapter 4).

A case-study approach offers opportunities to explore the interactions between agents – the children and their caregivers – and their environment in depth (Swanborn, 2010). Yin (2013, p.14) defines the case study as 'an empirical enquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident'. It is an approach that helps with understanding events and phenomena in a specific context (Baxter & Jack, 2008).

The focus of my case studies was pre-school children's food practices and energy use. These activities mainly took place in households, public places (with caregivers) and kindergartens. Therefore I employed nested case studies⁵ of kindergartens, households and children to understand their lives in different contexts. I chose both private and public kindergartens, which thus represented different management policies. I also made sure that the households that used these kindergartens were of different socio-economic backgrounds, using the kindergartens' fees as a proxy of varying socio-economic status of households. The children were recruited according to considerations of gender, socio-economics and size of family (e.g. nuclear and extended families). I chose different family structures because the household unit can

⁵ The nested case study involves the study of different elements within one case study, for example the kindergarten, the community and the children's households in three different areas and with children of three different socio-economic backgrounds.

be role model that creates a family ecology that young children grow up with, as reported by Kumanyika (2008).

I chose the case study research design because it produces rich data and offers the ability to explain the mechanism and the relationship between the actors and factors identified in the studies summarised in Chapter 1 (Gomm & Hammersley, 2009). The nested case study approach helped me to explore the causal processes behind the factors influencing certain practices, such as providing children with big meal portions and sweetened drinks and giving them money for snacks. The approach facilitates the investigation of a set of factors in the Thai social context that are interlinked and lead to practices that foster the development of obesity. These practices are also affected by sociocultural factors, including the values embedded in society. This is the specific contribution of the case study approach with its holistic nature, as described by Flyvbjerg (2006), to my study design. In addition this methodological approach fits well with employing the EST, which offers a comprehensive framework within which to consider possible social and economic environmental factors, as the study framework. The three kindergartens were selected from slightly different meso-and micro-level environments and differing socio-economic status, but under the same exo-and macro levels (Bangkok and Thailand). The cases were studied together and in depth over twelve months.

I am aware that findings from the three kindergarten case studies may not allow generalisation of the factors and mechanisms involved in the development of childhood obesity in these settings. However, the case studies provide details and mechanisms in different environments and under different educational policies: for

instance, the local authority and the private kindergartens employed different policies for the arrangement of the children's meals.

I employed participant observation as the main data collection method in this study to grasp people's actions in relation to promotion of childhood obesity and why they act in certain ways. I chose to participate in order to understand the same conditions and limitations that the research participants' experienced, and to gather the richer data that an insider's perspective makes possible. Understanding people's lives in their own terms is important in my study because it allows me to understand the decisions that they make in relation to their working and living conditions, roles, responsibilities and values. For example, participating in the kindergartens as a teacher's assistant gave me insights into the tension that a teacher feels when having to feed a child who does not want to eat, according to the kindergarten's policy and the parents' expectations.

Informal interviews were also used to gain deeper understanding and to triangulate data obtained from the observation and other sources.

Primary data were collected via observation over the course of a year (October 2013–September 2014) at three public and private kindergartens in Bangkok. The choice to differentiate the kindergartens on the basis of their pupils' socio-economic status was made because the provision of nutrition as a national policy can benefit disadvantaged students (Kristjansson et al., 2007). Kristjansson et al's (*ibid*) study points out that socio-economic status is linked to other factors such as educational background, migration, food choices, occupation, and working and living conditions, all of which can affect the development of obesity. However, I could not find a study analysing the

relationship between socio-economic status and obesity in Thailand. The Thai National Health Examination Survey Network (2010) reports different prevalences of obesity in urban and rural areas. The distinct characteristics of the Bangkok Metropolitan Area provide a good context for a case study of how adults and children living in such an environment interact with one another and their environment and negotiate for their preferred choice of foods. Exposure to government health promotion messages and campaigns, the strong influence of industry drivers such as direct marketing of snacks to children, availability of unhealthy snacks at kindergartens' snack stalls, and easy access to food and snacks are characteristics of metropolitan living, which also offers better basic facilities compared to other areas.

2.2 Research participants

2.2.1 Identification of research participants

Caregivers and pre-schoolers were the main actors in this study and therefore, kindergartens and households were my field sites. To specify the precise fieldwork locations, other essential factors suggested to be involved in the development of childhood obesity in the literature were carefully reviewed to help with the selection. According to the available evidence, a number of factors influence childhood obesity ranging from genetics, a child's birth weight, parents' education and socio-economic status, how a child is fed, and a child's behaviour, e.g. television viewing (Burgi et al., 2010; Ebbeling et al., 2002; Kleiser et al., 2009; Neter et al., 2011; Patrick & Nicklas, 2005; Sharma & Ickes, 2008). I focus on the socio-economic status of the pre-schoolers' families because it is one of the most influential factors to have been tested (Monasta et al., 2010).

I chose to focus on a factor, for example the consumption of large meals or eating while watching TV, and then understand how this selected factor is perceived by actors at kindergarten and household and how this factor affect pre-schoolers' consumption practices. A small sample was selected in order to build rapport over time with the teachers, children and parents; to create a mosaic of information around each child; and to allow me to participate fully in the societies I was observing. This led to the eventual recruitment of the sample:

- 1) Three kindergartens, representing a formal care institution to which parents of different socio-economic status send their children comprising two privately-run kindergartens representing children from well-off and middle-class families and one state-run kindergartens representing children of lower socio-economic status.

As the data collection progressed I found that the environments of the kindergartens representing the families of lower and middle socio-economic status were not very different, and that some families sent their older child to the former and their younger child to the latter. By doing this, they can save some budget. This also reflected their prioritisation between levels of care, e.g. they are willing to pay more for higher-level education.

- 2) The families of eighteen of the children across the three kindergartens. The families' socio-economic status was proxied by my initial selection of the kindergartens. The children were recruited based on characteristics such as weight per height status, gender, and age stratification; they were all aged 3-5.

I also tried to choose children with siblings/other children resident in their household, and from both nuclear and extended families.

The inclusion of children from families with upper, middle and lower socio-economic status and with and without overweight or obese children was not designed to compare how a family's socio-economic status affects the children's health status but to understand how identified influential factors work under different social conditions.

2.2.2 Access to research participants and the recruiting process

The Thailand 2012 Multiple Indicator Cluster Survey—MICS, conducted by the National Statistical Office, MoPH, Health Promotion Foundation, International Health Policy Program and UNICEF, reports that 84% of pre-school-aged children in Thailand attend formal care. Attendance was lower among the children of mothers without literacy or formal education (75% compared to 85% among those with educated mothers) in both government and private kindergartens (National Statistical Office, 2013b). The number of pre-schoolers in Bangkok attending formal care⁶ was the lowest, at 66%, compared to the whole country (87%) (National Statistical Office, 2013b). According to the survey, boys and girls have similar proportion of accessing to formal care at 84% and 85% respectively.

The proposed public and private kindergartens were appropriate initial points of access to research participants living in an urban setting such as the Bangkok Metropolitan area. Urban communities lack community leaders or gatekeepers such

⁶ Formal care in this study refers to an organized setting that have been authorized or appointed by the government to provide care and education for pre-schoolers.

as the health volunteers in rural areas. Instead, the urban household setting tends to encourage a more isolated environment, for instance condominiums and detached houses with physical boundaries and residents with busy working lives, making them difficult to access. The three kindergartens, which represent formal care settings, were purposively selected with the permission of their directors and of the local authority in the case of state kindergarten. The fees for the kindergartens were used as the primary criteria to differentiate the children's socio-economic status:

- zero tuition fees represented families of low socio-economic status;
- monthly tuition fees of less than 2,000 THB (40 GBP) represented families of medium, socio-economic status;
- monthly tuition fees of more than 10,000 THB (200 GBP) represented families of high socio-economic status.

This tuition fee criterion was in line with the minimum wage for a skilled graduate employee, which is 15,000 THB per month.

From list of potential kindergartens I randomly selected three in each socio-economic category located in Bangkok Metropolitan area and made three lists. I started by contacting the directors of the first on each list with the plan that if they refused to participate in the study I would contact the next kindergarten on that list. I invited the directors to participate in the study and then visited them to briefly introduce the project. All the directors that agreed to meet me in person to discuss the study agreed to allow me to conduct my research in their kindergartens. They then read the research brief and signed permission letters for me. They introduced me to the teachers and

students on the day that I began to attend their kindergarten (consent is discussed in section 2.2.3).

After approximately a month of participant observation at each kindergarten, in close consultation with the teachers I identified a list of six children in each kindergarten who could potentially participate in the research, making eighteen children in total. Each group of six included three who were deemed by their teachers and confirmed by the growth measurement sessions that took place on a regular basis at kindergartens to be of overweight, and another three were of normal weight, and included boys and girls of different ages between three and five. The children's parents were contacted and asked if they would agree to participate. A total of eleven boys and seven girls were recruited, of which ten were normal weight and eight were overweight/obese (see Table 2. 1). The initial design aimed to recruit an equal number of boys and girls, but after taking into account their weight status and seeking consent from their families the numbers were not balanced. However, this did not affect the design of my study because this sampling is designed to identify behaviours that directly and indirectly affect children's dietary intake and physical activity, rather than to make quantitative health outcomes measurements.

I spent a total of twelve months working and building rapport at the field site, applying for local ethical approval and collecting data from the three kindergartens, the children's homes and the neighbourhood. I adjusted the allocation of observation time at each kindergarten according to their term dates. During the course of my observation I started my day before the children's parents dropped them off at the kindergarten and spent all day with them until their parents picked them up to take

them home. By spending the full day with them I could observe how the children spent their time before kindergarten started, at snack and milk times, meal times, play time and free time while they waited for their parents in the evening.

	Gender	Boys			Girls		
		Age	3	4	5	3	4
Kindergarten representing families from lower SES	Normal weight	2	1	-	-	1	-
	Overweight/obese	-	1	1	-	-	-
Kindergarten representing families from middle SES	Normal weight	-	-	1	1	-	1
	Overweight/obese	-	2	-	-	1	-
Kindergarten representing families from high SES	Normal weight	1	1	-	-	1	-
	Overweight/obese	-	-	1	2	-	-
Total			11			7	

SES=socio-economic status

Table 2. 1 Recruitment of pre-school participants

Following the selection of kindergartens a formal interview was held at the first meeting with the parents to get to know them and to introduce myself and the research. This was found effective for the recruitment of participants, as I and they spent good-quality time together exchanging information. I explained to the adult research participants, including teachers and parents, that I was a PhD student studying factors that influence children's health status (including underweight, normal weight and overweight status), focusing on energy consumption behaviour and physical activity. The common questions they asked were about my planned data-collection activities – how would I do this? How many visits would I make to the kindergarten? Once they learned that I spent a good amount of time observing children in kindergartens they asked me what I observed there and whether their children ate a lot and ate good food; some asked for comparisons between the kindergartens. To gain the children's consent I explained to them that I was a student and that one of my study assignments

was to observe their lives at kindergarten and at the homes of some of them. The children would come up and ask me what I was doing when they saw me writing my field notes during my observations. I explained that I was doing my homework, just as they did in class, but my study was for adult students like myself. Introducing the research proposal to the children was another ethical challenge. My main concern was how I could get them to understand the research study. One of the children tried to guess the level of my education by listing all the levels of education that he knew of until he reached the top: 'You must be in level 11, right?' This showed a pre-schooler can understand important part of my introduction and explanation of my presence in his kindergarten and home afterward. He even tried to extend his understanding towards my explanation about my research study, with his experiences and knowledge. After I had been with them for more than a month the children stopped asking me what I was doing and treated me as one of the staff, but still with the awareness that I had lower status in their society than their teachers.

I found introducing my research to the participants a sensitive issue. My study title and aim included the clear keyword 'obesity', which could create negative perceptions in my respondents. On the information sheet I wrote a broad description of the research as a study of food and the health-related lifestyles of pre-schoolers at kindergarten and at home, rather than describing it as a study of obesity.

2.2.3 Consent

The form giving consent to my observation of the kindergartens was completed first by the kindergarten headmasters and teachers and then by the parents and children. While a paper consent form was used (and welcomed) at the kindergartens, verbal

consent was appreciated by the parents and was suitable for the pre-school participants. Individual families told me they would not feel comfortable signing the document, and some saw signing a form a strange thing to do as they had invited me into their house as a guest. My question to the children once their parents had consented to their participation in the study was 'Is it OK for me to visit you and spend time with you at your house?' The children showed different levels of interest and wanted to welcome me into their homes.

The children understood that I had an assignment, like their own homework assignments, to learn about their lives at kindergarten; e.g. what they did and the food they ate. They also knew that I would visit the homes of some of them and talk with their parents. While the parents understood that my visits would be to collect further data, give feedback and finally check my data with them, the children expected me to spend time playing with them.

An ethical concern about the children I had not chosen to include in the study became an issue when the children I had selected started to tell their peers that I had visited their house – which in their understanding meant that I was closer to them than to their peers. My strategy was to be neutral and paid same-level of attention and participation with the children equally at kindergartens. I also did not discuss or mention about visits to anyone's houses during my observation and participation at kindergartens. I found this strategy worked quite well in my case.

Informed consent to my observation at the participants' houses and other places where the families spent time together had to be obtained from the parents as well as

the children. They had to decide whether they wanted to let a stranger enter their private spaces. Although all of them had agreed to participate in the study at first and had been willing to answer all the preliminary questions, four families (two from New Market Kindergarten, one from Temple Side Kindergarten and one from Private Land Kindergarten) did not allow me to visit them once it came to the observation at home. One mother did not show up for the appointment for an introduction of my research study and a brief interview at the kindergarten and the others apologised, giving reasons why they could not let me be there which included the house being too far from school and so not convenient; the house not being clean and tidy enough; and the parents being too busy and travelling all the time.

The parents and children's trust in me was largely based on my long-term participation at the kindergartens and my interaction with the kindergarten teachers. Throughout my year of data collection and analysis I visited and revisited the kindergartens and homes of the children continuously; for example after observing at the first kindergarten for three months (October–December 2013) I left for house observations and moved to the second and third kindergartens. I then returned to the first kindergarten on special occasions and to organise a photo exhibition at the end of my fieldwork in September 2014.

2.2.4 Limitations

I found that the teachers and parents at the three kindergartens did not always maintain close contact. This affected the relationship between the parents and me. In kindergartens where teachers and parents communicate on a regular basis it was easier for me to get access to the communication loop and become part of the

community. The gap between teachers and parents was also defined by the type and size of the kindergarten; in the biggest kindergarten with more than 200 students the teachers and parents did not have much contact apart from a brief greeting when the parents dropped off and picked up their children.

As mentioned, the first and second kindergarten were in close proximity to each other, as initially designed in the research proposal to accommodate the data collection and control the environment with the assumption that households choose kindergartens according to their socio-economic status, and that even if they live in the same area, middle and low socio-economic households would have different lifestyles and choose to interact in different public places such as supermarkets and restaurants. Wanting to test factors of different environments and unable to find a kindergarten used by families of high socio-economic status in the same area I chose to recruit the third kindergarten in another district.

2.3 Data collection

As described, the primary data collection methods included participant observation, interviews with male and female primary caregivers, and informal conversations during the observations with pre-schoolers at kindergarten and at home and with kindergarten teachers and staff at work. These approaches provided insights into the ways that people think and act that can influence the development of childhood obesity, and links to individuals' rationale in their decision-making and practices. In addition I organised a meeting of experts including paediatricians, nutritionists, sociologists and health promotion practitioners (selected using snowballing techniques), and was a participant observer at national forum/policy movement activities at the Ministry of Public Health

(I was invited as a representative from academic sector through my organization). Data from the experts consultation meeting was mainly used to discuss the limitations of policy implementation discovered by this study (see Chapter 7).

Upon my first arrival at a kindergarten, after the director had introduced me to the teachers and students I started by observing and studying the everyday routines of the teachers and other staff, for example the teachers waiting to receive the children when their parents dropped them off at 7–8.00 am and then taking them to their classrooms to put away their backpacks. I started by offering help with minor activities for a couple of days until I learned the routine, and then the teachers started to assign jobs to me such as putting food for children, feeding some children, taking them to the cafeteria and helping them with their assignments. After lunch the children at all the kindergartens took a nap for 60–90 minutes, except for the five-year-olds, who had more classes and activities. This was when the teachers maintained their records and I interviewed them, helping them with small jobs or writing my notes. Then I helped the teachers to teach and helped the children to tidy their bedding, took them to toilet and got them ready for their milk break. At the end of the day I stayed with the children while they waited for their parents to arrive to take them home. The kindergartens' closing times varied from 3 to 8 pm according to each kindergarten's policy. I made additional observations outside the kindergartens, for example when I accompanied a kindergarten director to purchase cooking ingredients for making food for children at 5 am at a local fresh market and to the supermarket at weekends (the ingredients included fresh vegetables and fruits), and accompanied and assisted teachers on educational trips outside the kindergarten when extra people were required to look after the children. At their homes the activities varied depending on the parents, all of

whom responded positively as I helped them to take care of the children while they were at home.

2.3.1 Participant observation

Using participant observation at these particular social events provided opportunities for me to be accepted by the research participants and to understand their actions in the context of the limitations and conditions that they faced. I did not have a fixed protocol determining my level of participation throughout the data collection process; but adjusted it according to the participants' reactions and the development of my relationship with them. At the beginning of my observation I took a minor role, sitting in the corner of a classroom or kitchen and simply watching the ongoing activity. With time and familiarity I gradually inserted myself into the social environment. I began to involve myself more in social processes in many different ways, depending on the situation and the social position of the participants I was interacting with, e.g. helping the kitchen staff to distribute food to the children, feeding the children, helping the head teacher plan school activities, helping a participant to set the table for dinner at home. Such a flexible role and level of involvement helped me to get along well with the research participants in their social spaces. I also obtained data from kindergarten staff via informal interviews while helping them with their daily work.

I chose to instigate my observations at kindergartens for many reasons, including to get to know the gatekeepers (teachers, in this context) as well as to become familiar with the children before asking for permission to observe them at home. Apparently upon my first arrival some parents gently asked their children if they knew me or saw me at the kindergarten, and most of the parents responded positively when they saw

that their children and I were familiar. Observing for a month in each kindergarten before starting the household observation also gave me the opportunity to learn about individual children before making a recruitment list for the household observation. The criteria for the selection of the individual children, apart from weight status, also took into account their behaviour, e.g. their consumption behaviour. However, it should be mentioned that children are likely to act differently when they are at home and when they are at kindergarten.

The observations when the children are at homes or with their parents occurred on selected occasions, including during every day acts of food preparation, food shopping, and when eating out. I arranged all my visits to households in advance with the parents. I conducted observations at least twice with each family, and the sessions lasted from 40 minutes to 4.5 hours. Events that I observed at children's homes included children's dinner, playtimes, family activities such as going shopping at supermarket or to playgrounds. During my visits I carried out short informal interviews with the parents and with the parents and children together to gain a deeper understanding of the events and actions that I observed. For example I observed that Tintin's mother offered her three-year-old son unhealthy snacks and the boy did not eat much of his main meal or drink much milk at kindergarten or at home. His mother explained to me that her son was underweight, according to the paediatrician and the kindergarten measurements, and a picky eater, and she usually managed to feed him only one or two spoonfuls of food at mealtimes at home. She did not want to force him, she said, because he did not have 'a complete family', meaning that his parents had separated, so she wanted him to be happy and to have a happy time with her. The boy usually stayed with his father's family at weekends. The best strategy she could

find was to feed him things he did not refuse, because he would only eat five or six bites even of unhealthy snacks. Talking to her during the observation, I understood how the logic behind her thinking, her actions and the social conditions that she faced were interwoven.

I kept field notes throughout the course of my observation, recording the data daily as a chronological, non-interpretive description as suggested by McKechnie (2000). I transferred all the written data from a notebook to MS Word on the same day. This is to retain the rich data I obtained without being affected by a recalling constraint. In a separate section of my field notes I wrote down my interpretations of certain situations and emerging assumptions, which I tested the next time I revisited the household and at the households I visited subsequently. For example I observed at the kindergartens that some families allowed their children to drink bottled green tea, which contains a lot of sugar and caffeine; I then started to look for the same practice at home. Once I found households that gave their children bottled green tea at home and at kindergarten, I added a question to my interviews with adult household members about their practice and ideas about providing this beverage to their children (see Chapter 6).

An important aspect of participant observation, as suggested by Spradley (1980), is that the researcher must always be aware of all that has been going on at the observed event. In my experience taking small breaks during the long course of observations of three days per week in my case, allowed time for self-reflection and for reviewing and questioning the data to develop further plans to expand the data to be collected. The main problem with household observation was the difficulty in gaining access to

people's homes. The observations were planned to balance the privacy of the research participants with the rigour of the methodology. The design of the data collection over the one-year observation allowed me to follow changes in the weight and height status of the children in my study. The timeframe covered a complete academic cycle of term times and vacations, which can capture different processes and social practices happening in these different periods.

I experienced different levels of participation when observing at the kindergartens and in households. I realised that I felt different levels of acceptance as part of the community at the three kindergartens. This also happened with individual households; in some I felt more comfortable than others. The level of participation that I was permitted and my acceptance by a certain group was not explicable purely by the different socio-economic status of the families because it occurred across the three participant groups. It affected the depth of the data that I collected from the different kindergartens and households. Although I used the same tools, the richness of the data also depended on the research participants and the relationships that I could develop with them.

The main limitation to the use of the observation method was that there were also data that I did not observe which might not be in line with my findings. The research participants' food choices and negotiation processes may have been different when I was not present. I believe that making frequent visits to the households and the development of trust between the research participants and me helped to close the gaps between observed and unobserved events. I only made an appointment to visit them in advance for our first meeting. Once they knew me better, an appointment was

no longer necessary. Even at the early visits most householders did not try to hide their food practices or pretend to a healthier lifestyle in front of me. This may be because eating is deeply embedded in Thai living values and concern about childhood obesity among children of this age is not well recognised in Thai society.

2.3.2 Formal interviews with adult participants

I carried out formal and informal interviews throughout my data collection process. Informal interviews took place at the same time as the participant observation. In this section I focus on the formal, semi-structured interview method that I used for my first approach to the research participants. I employed open-ended questions, aiming to understand their actions, perceptions, knowledge and values concerning children's food consumption and energy use. This method allowed me to gain another set of data to triangulate and develop testable theories. Examples of the open-ended questions that I used for my data collection are presented below.

- Could you tell me about your child's weekday and weekend schedules?
- What does s/he eat for breakfast? Who prepares it for her/him?
- What about lunch and dinner?
- What is your child's favourite food?
- What are the family's activities during weekends?
- Do you cook at home?

These open-ended questions helped me to start the interviews smoothly and helped the interview sessions to flow well. The questions addressed daily activities and participants' preferences and therefore the respondents did not have any problems

answering. Sometimes the answer came in the form of a long story with explanations, for example in response to the question about a child's favourite food. Many parents told me that their children's preferences kept changing from food A to food B depending on their feelings at the time, and that their preferences had also changed as they grew older and learned about new dishes. This directed me to the deeper information that I wanted: influential factors in children's food practices. During the interviews I would add detailed questions related to the general answers that the participants gave. After a few visits to a household I could start mentioning things that I observed there, for example that a mother always put fruit on the dining table which was accessible to everyone including the child. This was because I was aware that some families would consider referring to things in the house and asking questions like this impolite coming from a guest for the first time.

2.3.3 Informal interviews with pre-schoolers

The role of young children in research has gradually shifted from their being the object to the subject (as a participant) of study (Mauthner, 1997). Many studies have shown the value of including pre-schoolers in research studies, albeit these were predominantly conducted in the global North (A. Clark, 2010; Warming, 2011). This is because children can best reflect their world and their experiences of themselves, especially in a study such as mine which is interested in how pre-schoolers think and interact with factors and actors around them. I held informal conversations and talked with small groups of pre-schoolers at playtimes during my participant observation, as conventional interviews may not be suitable for children aged 3-5. Eide and Winger (2005) suggest that qualitative interviews with children are good for obtaining their

perspectives, and that this method is possible with children from approximately the age of three; however, it also depends on the skill of the researcher.

The main objective of involving pre-schoolers in this study was to explore and understand the factors that influence their food consumption and physical activity patterns. In other words I wanted to understand the influences behind the choices that pre-schoolers made. The informal conversations consisted of a series of brief exchanges using short questions to elicit the child's views. Sometimes my open-ended questions related to topics that had been spoken about in class or discussed by the pre-schoolers at playtime. Over a series of interactions and different activities I asked them about the food they ate for breakfast, lunch, snacks and dinner, and the places and occasions and the people present when they had meals or snacks. I then asked whether and why they enjoyed particular meals. The questions were designed to be easy to understand. This threw some light on the influential factors behind their food choices as well as their ability to negotiate with adults to achieve what they wanted. There was a girl whose father gave her some snack money, which she used to buy an ice cream from a snack stall at the kindergarten while waiting for her parents to pick her up. While she was eating the ice cream the other children sitting next to her in the kindergarten's playgroup started to tell me that they wanted some. The girl insisted on sharing her ice cream only with her best friend. Another girl said '*I like ice cream, but my mom doesn't let me buy it.*' I asked why, and she answered '*She told me it's not good for me...but I still want it.*' A boy then told me '*I'm hungry.*' I know he meant to test whether I would get some ice cream or a snack for him. I teased him, asking if he wanted me to get him a carton of milk. He replied, smiling shyly, '*No, I'm hungry for a snack*'

Scholars who propose to include young children in research employ special methods to facilitate their data collection such as participatory and visual methods (A. Clark, 2010). In Clark's studies she let the children tell their life stories themselves. She employs a mosaic approach using visual and participatory methods with supportive tools such as encouraging children to take photographs and discover the meanings of the pictures with their peers. This provides outstanding input for participatory action research that involves young children intensively. I had initially planned to employ similar tools such as photographing to help with collecting data; however, I discovered that the children in this age group could communicate with me simply by answering basic questions about the food, snacks and activities that they liked. Building rapport and creating an atmosphere that allowed them to express their ideas, e.g. by listening to the topics they were talking about during their playgroup sessions and adding relevant questions to the discussions, encouraged them to communicate with me.

My study aimed to take the primary step of including young children's insights concerning food consumption as social practices. I did not focus the study on children alone because I believe that social practices, the focus of my study, are constructed by both adults and children and their interactions. I found myself as an adult taking part in a social space of children and building personal relationships with them. Once I had built a feeling of trust between us the children shared their ideas and experiences of everyday topics such as food consumption and their preferences with me. However, evidence from other sources, e.g. observation in this context, was required to complete the picture and understand the reasons behind children and adults' decisions. For example a child can state what his or her favourite snack is and give the reason for

this, e.g. the taste, but to complete the entire rationale, data from my observation added that his or her peers also buy the same snack, that this particular snack was being offered at a promotional price at that time and was available in a convenience store nearby the kindergarten, so the parents were inclined to purchase it for their child. In order to get insights from the children it was also important that I conduct the study with an open mind and treat the data obtained from them as of equal value to data obtained from adult participants.

I arranged an exhibition of photographs that I had taken during my observation at kindergartens for the children, parents and teachers to see so they could tell me if they felt uncomfortable about letting me use any of them in my thesis. Some pictures were taken from the kindergarten's Facebook page with the authorisation of the kindergarten staff and parents. In addition, after the first and second visits to children's homes I drafted a summary of the data obtained from interviews with each family and returned to them with a copy of this for them to read and correct if I had misunderstood the information received from them. They scanned through the notes, and few parents added their comments on issues such as the concern that they have towards school lunch. I also made a brief summary of my findings that might be of interest to the kindergarten staff with suggestions of ways in which each one could improve to meet its goals, and shared them with the kindergarten directors. This process of feeding back the data and analyses was performed with care because it might create negative responses from the participants. In my case, I discovered that a thoughtful process and outline of content of feedbacks should be agreed between the participants and myself. My feeding back process was also shaped in a way that was informal and friendly to the participants (not as an outsider trying to criticise or judge them).

2.3.4 Expert consultation meeting

At about the end of my data collection period, I discovered a number of themes came up into my on-going data analysis process. I therefore convened an expert consultation meeting to triangulate and prioritise findings as well as to communicate those findings to experts and policy makers working in the field of childhood obesity in Thailand. Invited experts were, paediatricians working area of childhood obesity, academia in field of anthropology and social sciences, representative from Bureau of Nutrition and Bureau of Dental Health, Department of Health, Thai Health Promotion Foundation, and Food and Nutrition Policy for Health Promotion Program (FHP). In the meeting, the discussion led to five areas of topics that my preliminary results offered and that the experts suggested should be further investigate because these would provide emerging contributions to both knowledge and policy development in Thai context. The identified areas were national policy in Thailand that affect kindergartens' regulation, kindergartens' policy and culture that affect children's eating behaviours, children's characteristics and their responses to adults' action in relation with food consumption, understanding of children and their snacking behaviours, and values that adults (especially main caregivers) have towards milk consumption.

These methods provided channels of gathering data that can complement one another. Participant observation was the main method to get data in my study; however, observing alone cannot give enough data to extend my understanding of decisions and actions that caregivers and children did. Formal and informal interview then used to gain additional data to explain events that I observe, on the other hand, an on-going observation process was helpful to recheck data I obtain from interviews too. In addition, results from discussion with experts group helped shaping my focus

on issues that were identified as good contribution to both knowledge fulfilment and policy needs within Thailand where my study was conducted.

2.3.5 Researcher's position and influence on data collection

This section presents reflections about my position in the kindergartens and households in the view of the teachers, children and parents. These positions and perceptions could potentially affect the data obtained from my research participants. The first group of people with whom I had to make contact and present myself to were the kindergarten directors and the local authority (in the case of state kindergarten). All of them accepted my proposal to carry out research in their kindergarten. From our early introduction sessions I felt that they were happy because by accepting me they could show me their kindergartens and they could also tell parents that they had 'a PhD student from England and from the Ministry of Public Health' to study children's food and health and to help with taking care of the children. They implied to the parents that this meant that their kindergartens were good enough to be selected as a study site. Most of the teachers were happy as I offered to help them with jobs in the classroom including teaching, taking children to the toilet and feeding them, and some other routine work (organising an exhibition, taking care of children during kindergarten trips to the zoo, for example). I found this level of participation in the kindergarten setting very useful for building rapport and gradually setting myself into the environment and becoming part of the society. This helped to support my participant observation as I collected data and to understand the data and the context I was working in.

The children seemed to place me somewhere between their teachers and their senior peers. They saw that their teachers had some respect for me; for example when I was

present a teacher might not be as strict with the child as when I was not there (I sometimes change my place of observation from being inside the classroom to be outside and observed from the window). They knew that I had no authority to force them to do things because I was not their teacher, even though their teachers introduced me to them as a temporary teacher. Many of them preferred to have me join their groups and play with them at playtime or help them when they did their assignments. This was mainly because I was quite gentle with them as I did not feel any pressure to ensure that they all completed their assignments, as the class teachers did. I needed to learn my position in the kindergartens' social structure in different contexts. I learned that it was likely that I was involved in breaking the rules both at the kindergartens and in the children's homes. At the kindergartens the teachers taught them to behave according to the rules, e.g. sitting in line in class. However, when I joined them in the classroom a few of them would run and sit next to me or on my lap (taking them out of the line), and they learned that their teachers and assistants did not like to bother me and so let them come to me. The children not only put me in their social ranking, they also observed how their teachers positioned me. For example, they learned that their teachers were considerate and treated me like a guest, thus I could be a person who would help them disobey their teachers' orders in some situations.

Age, among other identities including sex, ethnic group and wealth, plays a role in the social hierarchy in Thai society and strongly invokes respect (Hanks, 1962). Those in the lower hierarchy are supposed to respect those above them; for example a younger brother is supposed to respect his older brother. Howard (2009) explored children's respectful language and behaviour towards their teachers in kindergarten classrooms

in northern Thailand and explains that 'pervasive and authoritative discourses' (p.269) clearly tie politeness and respectfulness to the desired characteristics of a Thai person, especially toward those with authority or higher in the hierarchy such as teachers and parents, in the classroom setting. The literature describes a general concept of the Thai social hierarchy which helped to explain my position at kindergartens and in the households of the children in my study. Most of the parents were senior to me, and as I presented myself as a student pursuing a degree and performing a study for a thesis, and acted as a teaching assistant at the kindergartens, they perceived me as 'a student' (i.e. a young person). Parents and teachers taught the children to call me either 'sister' or 'teacher'. They also learned from the teachers and their children that I helped teaching and taking care of their children in kindergartens (teachers' assistant). Sometimes parents asked about their children's performance and activities at kindergarten. When they learned that I was also working for the MoPH, some asked me consultative questions such as how to deal with a picky eater, how to make children eat vegetables and whether their child was developing well. I explained my educational and working background and made it clear that I was not an expert and had no educational background in child development. I tried to help by answering only with data that had a formal reference, such as the recommended amount of 400ml milk per day.

In addition, being a female researcher on the one hand posed difficulties to approach research participants, especially fathers of the children; this can influence the selection of parents that I approached and explained why most of the main informants were mothers because mothers were the main carers who picked up and dropped off children. It was appropriate for Thai culture as a female researcher to approach

participants of the same gender, given that a part of my data collection was to visit them at home. On the other hand, being a female researcher who was younger (thus occupying a lower place in the social hierarchy compared to those older than myself, as described above about social hierarchy in Thai context) than most of the participants provided me with good opportunities to get along with participants by making them feel comfortable, so they felt relaxed to spend time with me during the household visits. Coming from Thailand provided advantages of getting insider knowledge that helped me understand Thai culture and customs that I benefitted from during my data collection.

2.4 Data analysis

The data were chronologically documented in the form of field notes and recorded interviews. The analysis was performed using the original materials, including the field notes, interview transcripts and policy documents. The field notes were written in both Thai and English and could be grouped into observation notes from the three kindergartens and from the families of the 18 children. The interviews were conducted and transcribed in Thai. During one week of data collection I took a couple of days off to organise the data and conduct a primary analysis to further develop assumptions and create a list of specific research questions for future visits to kindergartens and households. I then returned to the cases to refine and confirm my findings. This contributed to the process of iterative analysis suggested by Charmaz (2014). At the end of the data collection I translated the data from Thai to English and transferred the translated, analysed data to Nvivo software for further analysis. Two Thai experts who were fluent in English academic writing separately checked the accuracy of the translation. The transcribed data were subjected to line-by-line data coding from which

themes emerged. The data focused on children's food consumption and physical activities and the relevant factors and actors. The sub-themes that emerged from the data coding were grouped and synthesised and organised into main themes at different levels of the EST. Even though I divided my observation and questions equally between energy consumption and physical activities, the data I obtained from my research participants concerning physical activities were limited and therefore my findings were dominated by the consumption of food and drink (see list of codes and sub-themes in Table 2. 2 Table 2. 3 Table 2. 4).

Codes (Nodes)	
<ul style="list-style-type: none"> • Access to ready-made food • Access to snacks • Advice from doctors • Big portions for children • Children's agency • Child's busy schedule • Child's food preferences • Cook or prepare food for children • Daily allowance • Difficult eater • Easy eater • Easy food for children • Express love for the child/ food as reward • Extended family • Family meal 	<ul style="list-style-type: none"> • Family ritual • Influences from siblings, carers or peers • Food value • Food supplements (nutrients) • Full-time work parents • 'Boys should eat more than girls' • Health concern • Home cooking • Identity of good parents • Influences from grandparents • Kindergarten and home relationship • Knowledge of parents • Let child choose food • Main meal at school • Marketing strategy • Media exposure • Milk consumption • Value of milk • Nuclear family • Only child • Parenting and feeding • Parents with time to take care • Physical activity • Raised by grandparents • School food • Separated parents • Taste of food • Weight management • Weight measurement and obesity

Table 2. 2 Sub-themes that emerged from the data coding

Main meal (29)	<ul style="list-style-type: none"> • Access to ready-made food • Big portions for children • Cook or prepare food for children • Difficult eater • Easy eater • Easy food for children • Extended family • Family meal • Food value • Health concern • Home cooking • Influences from grandparents • Kindergarten and home relationship • School food • Express love to the child • Weight management • Raised by grandparents • Full-time work parents • Let child choose food • Child's food preferences 	<ul style="list-style-type: none"> • Parents with time to take care • Family ritual • Nuclear family • 'Boys should eat more than girls' • Child's busy schedule • Influences from siblings, carers or peers • Main meal at school • Taste of food • Identity of good parents 	
Milk and food supplement (17)	<ul style="list-style-type: none"> • Express love for the child • Extended family • Food value • Health concern • Kindergarten and home relationship • Milk consumption • Value of milk • School food 	<ul style="list-style-type: none"> • Easy eater • Parents in full-time work • Let child choose food • Child's food preferences • Parents with time to take care • Taste of food 	<ul style="list-style-type: none"> • Identity of good parents • Food supplements (nutrients) • 'Boys should eat more than girls'
Snacks practices (10)	<ul style="list-style-type: none"> • Daily allowance • Child's food preferences • Difficult eater • Easy eater 	<ul style="list-style-type: none"> • Express love for the child • Extended family • Health concern 	<ul style="list-style-type: none"> • Influences from grandparents • Kindergarten and home relationship • School food
Physical activity (2)	<ul style="list-style-type: none"> • Physical activity 	<ul style="list-style-type: none"> • Weight management 	

Table 2. 3 Themes grouped from codes (List 1: Main elements presented in the result chapters)

Children's agency (13)	<ul style="list-style-type: none"> • Child's food preferences • Difficult eater • Easy eater • Easy food for children • Extended family 	<ul style="list-style-type: none"> • Influences from siblings, carers or peers • 'Boys should eat more than girls' • Home cooking • Influences from grandparents 	<ul style="list-style-type: none"> • Let child choose food • Media exposure • Only child • Raised by grandparents
Lifestyle and living conditions (12)	<ul style="list-style-type: none"> • Child's busy schedule • Family meal • Family ritual • Parents in full-time work 	<ul style="list-style-type: none"> • Home cooking • Influences from grandparents • Kindergarten and home relationship • Nuclear family 	<ul style="list-style-type: none"> • Parenting • Parents with time to take care • Raised by grandparents • Separated parents
Parents' knowledge and information (5)	<ul style="list-style-type: none"> • Knowledge of parents • Advice from physicians 	<ul style="list-style-type: none"> • Media exposure • Weight management plan 	<ul style="list-style-type: none"> • Health concern

Table 2. 4 Themes grouped from codes (List 2)

These various sources of data collection, including observations and interviews, and data checking helped me to triangulate and extend my data as well as to enhance their validity, an element of trustworthiness of qualitative research. In addition I had analysed the data throughout the process of their collection, sharing the results with my supervisors and discussing the analysed results on a regular basis during the collection process. This allowed me to test the assumptions emerging from an initial observation at the following visit to the same site, or at a different site to see whether the finding was repeated in different households or kindergartens.

Employing Guba (1981)'s guides for reliable research, Shenton (2004) proposes the application of four criteria to ensure the rigour of qualitative studies: *credibility* (in preference to internal validity); *transferability* (in preference to external validity or generalisability); *dependability* (in preference to reliability); and *confirmability* (in preference to objectivity). I applied the first criterion to my study by demonstrating data that is resulted from my critical observation as illustrated in the process of my data

collection. I recorded all events during my observation without predetermining or being selective about the data I experienced. I also made a small separate note beside the data that I observed. Furthermore, I summarised the data I had obtained from interviews and presented them to the relevant interviewee to ensure that it was neutral – i.e. not my interpretation – and captured everything discussed in the interviews. Regarding transferability, I provided detailed information about the context of the event I studied, as illustrated in Chapter 3, where I present full information about the three kindergartens where the data collection took place. These information would be helpful for other researchers who wanted to repeat the similar approach. Important characteristics of individual children and their households that were relevant to my data analysis were also noted. Provision of detailed context information is expected to help other researchers and policy implementers to decide which findings can be adopted to their setting of interest. As for dependability, I repeated my observations at different kindergartens and households, acknowledging that their contexts were not the same. In response to confirmability criteria, I illustrate how the themes were coded and emerged from the data, as mentioned in the previous section.

CHAPTER 3: THE OBESOGENIC ENVIRONMENT OF FAMILIES WITH PRE-SCHOOLERS IN BANGKOK

3.1 Introduction

This chapter introduces the Thai urban environment, focusing on Bangkok, where this research was set. It explains the factors that may contribute to the development of obesity among pre-schoolers, therefore targeting not only diet and physical activity. Scholars have been interested in the influence of the environment on individuals' choices of food consumption, physical activity and development of obesity (Popkin et al., 2005), and have introduced the term 'obesogenic environment' to the literature. Swinburn et al. (1999, p.564) describes this as 'the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations'.

'Environment' in this investigation includes both the physical environment and the sociocultural values and rules that influence people's lifestyles. This thesis focuses on lifestyles that are potentially related to the development of obesity among pre-school-age children. Therefore conditions that influence food consumption, physical activities (energy use) and the relationship between pre-schoolers and adult carers are included. Lake and Townshend (2006) suggest that the environment is linked to people's health through three channels: the physical design of the environment; the sociocultural rules that administer the environment and people's lives; and the socio-economic status of the area that the people reside in. The environment can be divided into multiple levels including the micro- and macro-levels. Examples of the micro-level environment are communities, schools and workplaces. These are influenced by the

broader macro environment including policy, social values and the social structure and systems.

This chapter considers the Bangkok metropolitan environment and relevant elements that shape the lifestyles of families with pre-school-aged children living in this area. The black spots in the map below indicate the locations of the three kindergartens selected as case studies. Two are located in the same district, between Bangkruai and Bang Phlat, and the third is in Lat Phrao district.

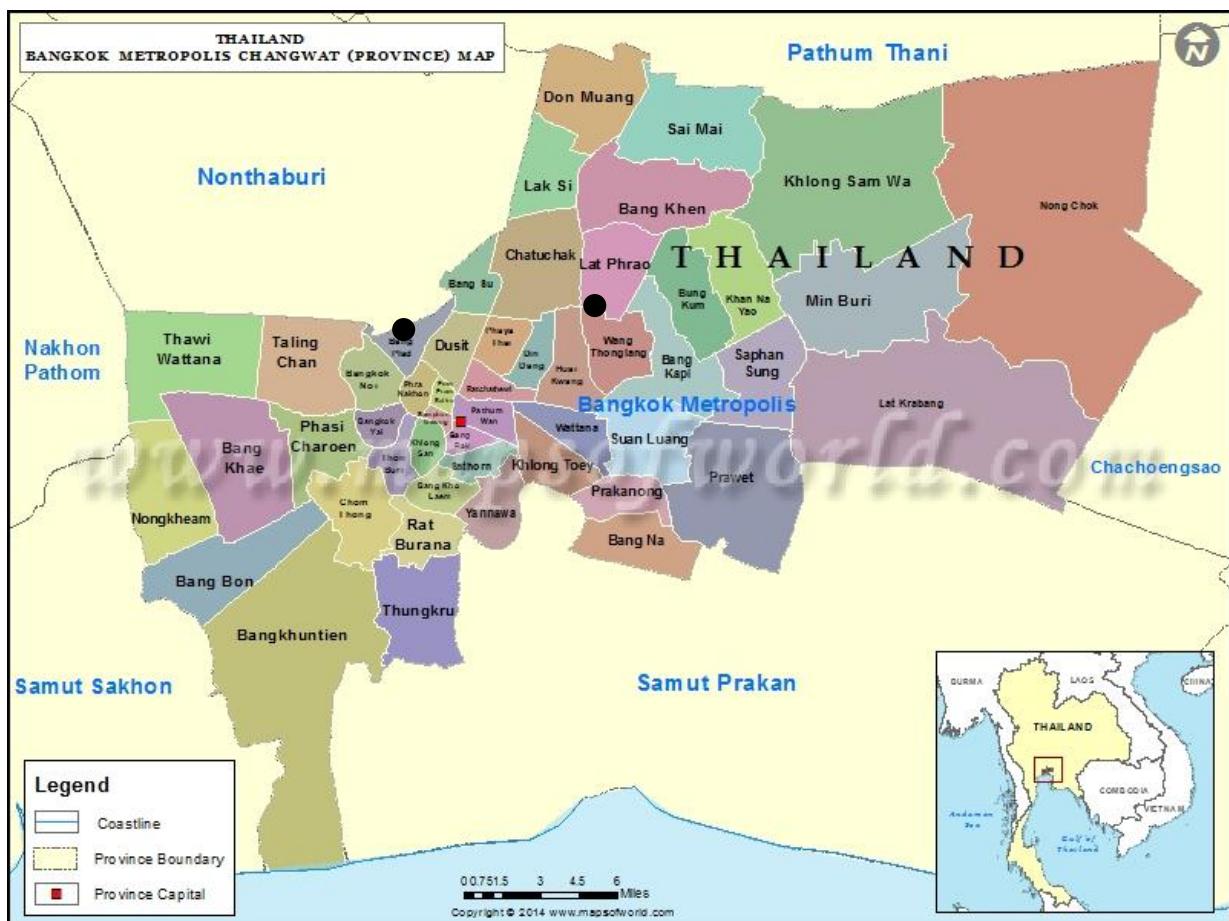


Figure 3. 1 Map of Bangkok and the locations of the kindergartens included in this study⁷

⁷ Source of image: <http://www.mapsofworld.com/thailand/provinces/bangkok-metropolis-map.html>

Besides the physical environmental factors that can promote obesity, social environmental elements concerning child-rearing are also investigated in this chapter, employing Lake and Townshend (2006)'s concept of channels linking environment and health to present the review data and explain the obesogenic environment in Bangkok Metropolitan area. The three channels, and the topics presented in each, are:

- (1) the physical design of the environment: housing and the use of space in metropolitan Bangkok;
- (2) sociocultural rules that administer the environment and people's lives: the food environment and food practices in the metropolis;
 - a. socio-economic status of people's environment;
 - b. characteristics of urban families and parents' working conditions;
 - c. differences in the socio-economic status of families living in urban areas.

In the last section I present data on child-rearing and introduce the kindergartens recruited for my study. This provides important background focusing on pre-schoolers' specific environments, which is one of the key elements of this thesis.

3.1 Physical design of the environment: housing and use of space in Bangkok

A review of studies in the US has found that free spaces in big cities and their location, i.e. parks in safe and accessible areas, increase the level of physical activities of its residents (Blanck et al., 2012; Sallis et al., 2012). Such spaces include public spaces and parks as well as private and common areas in and around residential zones. A comprehensive review of best practice in interventions to promote physical activity in developing countries by World Health Organization (2005) reports that the provision

of environmental support for physical activities appears to help to prevent non-communicable diseases. According to the review, best-practice cases from Iran, Mongolia, the Philippines and Thailand adopted the creation of a supportive environment. Public parks are one of their key interventions.

However, in urban areas where the population density is high such public and private spaces are limited. The 2010 NSO census provides data on housing types in different regions of Thailand: only 30% of the people in Bangkok live in detached houses (thus with some space for outdoor activities) compared to 72% in the whole country. The population of Bangkok is more likely to live in flats or terraced houses, which normally have limited common space and no garden, than people from other regions (National Statistical Office, 2010). This indicates that free space in residential areas is limited for urban citizens and affects their choice of out-door activities. The economic status of the family is also an important factor that limits their choice of housing type and of environment around the house. For example those of a high socio-economic background may be able to afford a house with generous common space including a children's playground and sports complex (as is often found in gated communities and luxury apartments), but for those of lower socio-economic groups such facilities are limited. However, this does not take into account other factors such as the time or motivation to be physically active. Safety concerns about the use of spaces can also be an issue: for example although there may be some space in front of the house where children can play, it may not be free of traffic. For some households, school playgrounds are the only places where carers can let their children engage in physical activities on a daily basis.

The Bangkok Metropolitan Administration (2007)—BMA’s public parks office reports that the average green space per Bangkok citizen is 5.4 square metres, or 3 square metres per person when the small green spaces in the middle of the roads are not taken into account. Other big cities in Asia offer on average 39 square metres per person, and WHO’s minimum recommendation is 9 square metres per person (Institute for Population and Social Research, 2014). Although the BMA used to hold aerobic activities in public spaces in almost all Bangkok districts every evening, providing trainers to lead the sessions, the project was stopped after a few years and the budget discontinued when there was a change of governors. It did not target preschoolers. Some parks in Bangkok arrange generous areas with playgrounds, play spaces and cycling lanes for young children, but this is limited to big parks which not all families can access easily.

3.2 Sociocultural rules that administer the environment and people’s lives: the food environment and food practices in the metropolis

This section discusses food values demand, supply including availability, accessibility, price and marketing strategies in Bangkok. Three topics are presented; (3.2.1) food values in Thailand, (3.2.2) the food consumption patterns and dietary intake of Bangkok citizens, (3.3.3) the food industry’s adaptation to Thai consumers and its marketing strategies.

3.2.1 Food values in Thailand

Food is very important in Thai culture and plays an essential part in social relations (Counihan & Van Esterik, 2012; Rice & Gunstone, 1986; Sowattanangoon et al., 2009). Providing guests with special meals is an indication of social attainment and is

expected and proper social practice. Food expresses many values including identity, hierarchy and status (Walker, 1996). A proper Thai meal includes rice as the staple food plus side dishes. International foods including Chinese, Indian, Portuguese and Japanese dishes have been introduced to Thai society over time, mostly adapted and redefined as Thai food, both in the household and by street food vendors. For example it is common to find a pizza topped with Tom Yum (spicy soup) flavoured sauce or fried chicken with spicy sauce in local markets at affordable prices. Thai food and snacks have a strong symbolic value and can be seen as a part of the Thai social identity (Ministry of Foreign Affairs, 2014). Ideas about how food, as a high-value gift, should be given and received have shaped the food practices of Thai people, including pre-schoolers' parents, grandparents and kindergarten staff. Adding seasonings at the table is common, with seasonings such as sugar, fish sauce and others available on the table, and customers ask for these at food vendors' stalls or restaurants. This culture has shaped and developed strong taste preferences among Thais, with the knowledge of some adults that children prefer food or drink with a good taste too. Connected with this habit is an increase in sugar consumption in Thailand from 28 kg/person/year in 1997 to 32 kg in 2005 and 36 kg in 2010 (Health Focus, 2014; Kotnongbua B., 2011). The preference for a sweet taste is embedded in food sellers and their customers, including parents, children and teachers.

3.2.2 Consumption patterns and dietary intake in Bangkok

The 2009 NSO Household Socio-Economic Survey reveals a decreasing trend in home-prepared meals and the increasing popularity of ready-to-eat meals for both taking home and eating out. The NSO suggests that consumption of ready-to-eat food is likely to lead to higher consumption of salt and sugar.

My study is particularly interested in the areas where there have been significant changes in food consumption, and in particular the Bangkok Metropolitan area.⁸ Bangkok had been experiencing urbanisation and economic growth since the early 1950s, before the first National Economic Development Plan was established in 1961, to the extent that the Thai authorities are concerned that the rapid growth of the city could dominate the rest of the country in terms of modernisation (Krongkaew, 1995). Although spreading such growth to other big provinces such as Chiangmai and KhonKaen was on the national agenda, the significant growth of the capital would still continue. To accommodate the fast-expanding city, farmland has been transformed to industrial and residential areas (Krongkaew, 1995). Even though such growth provides substantial benefits for those living in the city in terms of high employment rates with higher incomes, better social services and a lower cost of living, certain costs are unavoidable. The environment, the infrastructure and social changes due to urbanisation undeniably affect the lifestyle of metropolitans, including their everyday behaviour in areas such as eating.

‘Public eating’ is the term that Yasmeen (2000) uses to explain the habits of urban Thai people, who mostly rely on food prepared outside the home. Rapid urbanisation, industrialisation and associated changes in family structure are claimed as the main causes of this food consumption habit. An increase in nuclear families, women working outside the home and single-person households have resulted from such social

⁸ Statistics for the Bangkok area include three nearby provinces: Nonthaburi, Pathumtani, and Samutprakarn provinces.

changes. These trends shape urbanites' lifestyles and eating patterns (Yasmeen, 2000).

Food consumption behaviours at population level that were observed by the Household Socio-Economic Survey of the NSO explain this situation (National Statistical Office, 2013a).⁹ The 2009 survey included 5,850 Bangkok households. A comparison between the whole country and Bangkok reaffirmed that people living in Bangkok rely on ready-cooked foods bought in markets more than on home-prepared meals. The number of Bangkok households preparing meals at home decreased from 55% in 1988 to 39% and 38% in 2007 and 2009 respectively. Meanwhile the number of Bangkok households that rely on ready-cooked main meals has gradually increased from 46% to 56% and 58% in 1998, 2007 and 2009 respectively (see Figure 3. 2).

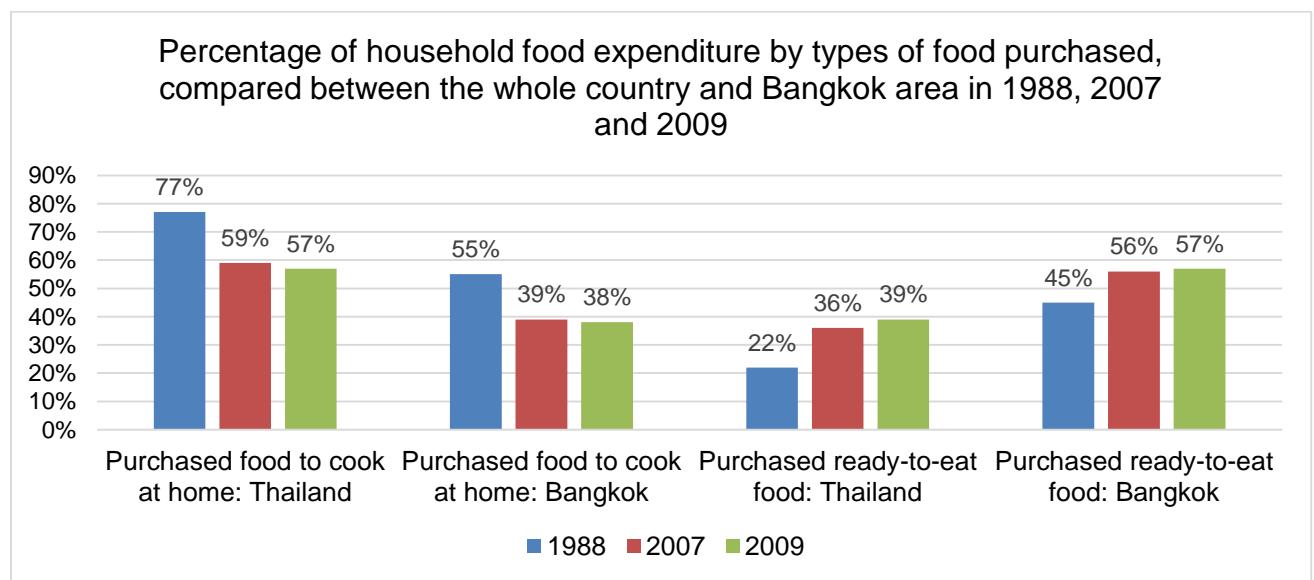


Figure 3. 2 Percentage of household food expenditure by type of food purchased in the whole of Thailand and the Bangkok area from 1988 to 2009
Source: Household Socio-Economic Survey, National Statistic Office, Thailand

⁹ The National Statistical Office (NSO) collects social and economic statistics every month throughout the country to develop the annual figures.

Eating out or using processed food does not always mean an unhealthy diet. The Socio-Economic Survey illustrates changes in consumption patterns, the number of people who buy processed/prepared food and those who eat out, but not the types of food that people eat. Therefore it is important to understand the actual nutritional intake of the target group.

According to the 2010 nutrition survey under the National Health Examination Survey, people from urban areas, especially those living in Bangkok, consume more fat, salt and sugar than those living in rural areas. A food consumption survey among the Thai population, including children aged 2-8, revealed that 20-30% of children consume extruded snacks or crisps and sweetened milk every day (National Health Examination Survey Network, 2011). The highest consumption of unhealthy snacks such as extruded corn snacks and crisps is found in southern Thailand and Bangkok.¹⁰ The survey also confirmed the increase in the Thai population's dependence on ready-to-eat food.

3.2.3 Adaptation and marketing strategies of the food industry to meet Thai consumption patterns

Fast food, primarily consisting of hamburgers and fried chicken, was introduced in Thailand in the 1970s. It was not popular at the time because of the taste and the high price. However, businesses adjusted their products and strategies to make them more palatable to Thais. Unhealthy food remains likely to be considered supplemental, i.e. a snack, rather than a replacement for traditional Thai food, as described in a study

¹⁰ The questionnaire asks only about frequency of consumptions and does not cover the amount consumed.

by Walker (1996): “*Teenagers will go to McDonald's or Pizza Hut after school for a snack, and then go home to a "proper" Thai meal with rice.*” This still holds true, as a current market analysis report by BrandAge Thaicoon, a marketing agency, states that in 2011 KFC was adjusting its ‘snack’ (defining by this Thai press agency and widely understood by Thai people) menu such as nuggets, fries, pies and ice cream, and to attract more teenaged customers in competition with McDonald’s popular snacks (BrandAge-thaicoon, 2010)

Data on the sales volumes and market share of fast food in Thailand reflects total consumption. This literature review explores the supply side of unhealthy food as a part of the review of changes in food consumption patterns in Thailand. This will increase understanding of the changes in food consumption among Thai people. The foods and drinks investigated include fast food, snacks and confectionery and soft drinks.^{11,12,13} The Department of Business Development (DBD) of the Ministry of Commerce of Thailand revealed that during 2010-12, consumption of all types of unhealthy food was growing steadily and providing huge annual revenues. Snacks and fast food businesses have the biggest revenue, which ranges from 1,000 to 20,000 million THB per year depending on the size of the company. McDonald's, for example, earned 4,000 million THB in 2011. The survey did not include fast foods sold by local vendors in local markets. Soft drinks are the next biggest business in Thailand, with the average revenue approximately 600 million THB per year. Euromonitor

¹¹ This includes fried chicken and other deep-fried food, chips, pizza, and burgers. The fast food companies with the highest market share in Thailand include KFC, The Pizza Company, Pizza Hut, McDonald's, and Burger King.

¹² Snacks in this study include potato crisps, peanuts, rice crackers, extruded snacks, biscuits, and confectionery including chocolate and sweets.

¹³ The sweetened or soft drinks market in Thailand consists of carbonated and concentrated drinks, juices, ready-to-drink tea and coffee, smoothies and Asian specialty drinks such as sweetened aloe vera and pearl-tea drinks.

International (Euromonitor International, 2012), a consumer marketing research company, explains that this is due to the strong marketing strategies created by leading food companies.

Interestingly the marketing agency BrandAge Thaicoon's market survey in 2010 found that KFC's main customers are families (45%), with teenage customers amounting to 25%. The most popular family mealtime is dinner in the evening. At McDonald's families are also the leading group, accounting for 30% of customers. Another popular fast food in Thailand is pizza. There are two leading companies, The Pizza Company and Pizza Hut, with 40% of their profit from their restaurants 40% from deliveries and 20% from take-home sales (BrandAge-thaicoon, 2010). These companies launched a number of advertisements targeting family meals (see Figure 3. 3 and Figure 3. 4).

The marketing and growth of the unhealthy food market is aimed at the entire country. However, it is evident by observing the density of such stores and restaurants that Bangkok is a specific target for fast food and convenience stores where huge snack-related profits are made. At the end of 2011 a total of 6,276 7-Eleven stores (24-hour convenience stores offering food, snacks and drinks) existed nationwide, making Thailand the country with the third largest 7-Eleven network in the world after Japan and the US. Of these, 2,977 (47%) stores were in Bangkok and vicinity and 3,299 (53%) in provincial areas (Charoen Pokphand Foods PCL, 2011). Of the 150 McDonald's branches in Thailand, 93 (62%) were located in Bangkok in 2012 (McThai, 2013). It is notable that the population of the Bangkok area have higher exposure to unhealthy products.

Kachondham et al. (1992) suggest that consumer behaviour is also shaped by exhaustive advertising on the part of the food industry and vendors. This can be observed in many ways. In the fast food market, apart from making its products easily accessible by customers in terms of location, McDonald's reduced the price of its 'saver' meals to 22-25 THB (approximately 0.50 GBP) in campaigns during same period of the year 2012 (McThai, 2013). Twenty-four-hour service is also an effective strategy for capturing customers who need an easy breakfast or a very late dinner, especially those living urban lifestyles, e.g. having long working hours and relying on ready-to-eat food. Other marketing strategies employed by these restaurants are making Wi-Fi available in their in restaurants, sports marketing (promoting products and services through sporting events or teams), increased accessibility and availability in terms of place and price through strategies such as delivery and buffets, and value set meals, e.g. The Pizza Company's buy-one-get-one-free offer (BrandAge-thaicoon, 2010).

Beyond targeting adults through the aforementioned strategies, fast food businesses target children with direct and indirect advertising campaigns. The direct strategy targets them via promotion campaigns, for example offering specific children's menus with collectable dolls or robot models (see Figure 3. 3). Indirect strategy includes offering 'family meal' set which offer enough amount of food for sharing with family members, including young children (see Figure 3. 4)



Figure 3. 3 McDonald's promotion of Happy Meals¹⁴



Figure 3. 4 KFC promotion of family meals¹⁵

Before the announcement of the Criteria for Food Advertisement (B.E.2551) (Food and Drug Administration, 2008) and the Broadcasting Business Act (B.E.2551) (National Broadcasting and Telecommunications Commission, 2008) (see Chapter 7), snack and confectionery firms targeted children aggressively in their product advertising on television.¹⁶ Food and Nutrition Policy for Health Promotion or FHP (2014a) reported that data from 2007 showed that snack and confectionery advertisements in Thailand during children's TV programming occurred 42 times per

¹⁴ Source of image: McDonald's Thailand, 2013

¹⁵ Source of image: Source: www.kfc.co.th (2013)

¹⁶ Child-targeted advertising is defined here as advertisements in which only children are shown consuming the advertised product, children are the main character(s); the narrator speaks directly to children; and/or a toy or other children's product is promoted with the food (Harris, 2010)

hour compared to 12, 11 and 10 times per hour in Australia, the USA and the UK (Kelly et al., 2010).

In addition, Thai vendors commonly remake popular, luxury upper-class big-brand foods that are usually sold in big malls, to make them accessible to everyone on the street. Such foods include doughnuts, deep-fried chicken, pizza, burgers, sandwiches and cakes (see Figure 3. 5). Advertisements from big food companies not only have a direct effect on consumers, encouraging them to buy their unhealthy products, but also an indirect effect on small vendors by encouraging them to produce versions of these foods to sell cheaply, although the purchase figures are not formally available because such products are usually traded in local markets and thus it is difficult to track consumption. Even excluding this informal purchasing, sales from the big companies include a large amount of fast food.

	Japanese sushi, 5-10 THB (0.10-0.20 GBP) per piece
	Fried chicken and chips, 10-20 THB (0.20-0.40 GBP) per pack; steak and sausages, 40-80 THB (0.80-1.6 GBP) per dish
	Cakes and pastries, 20-30 THB (0.40-0.60 GBP) per piece

Figure 3. 5 Examples of remake food and snacks sold in local markets¹⁷

A food environment is a space where sellers and buyers interact and is partly shaped by social values that have developed over time. In Thai society, access to food is a privilege. Tasty modern and imported food, for instance, are of high value to certain groups of people. International and local food manufacturers have learnt to adjust their business to meet consumers' demand and values; e.g. fast food outlets target family customers. Due to their relatively high purchasing power Bangkok and Thailand's other big cities are the main target of the food industry. Marketing and advertising strategies are strongly employed by the industry to increase their sales and profits. This environment influences both adults and children in the society.

The data presented above is about the conditions and food environments in Thailand and Bangkok in which parents and children, my research focus, live. Another element of this research about pre-school children is a specific environment, kindergartens and homes, where pre-schoolers receive informal and formal care. The next section presents socio-economic environment of families living in Bangkok, parents' working conditions, child-rearing patterns and formal care systems.

3.3 Socio-economic environment

3.3.1 Characteristics of families living in Bangkok and parents' working conditions

Family structure, for example nuclear families, parenting styles and the role of caregivers, can affect a child's weight by shaping his or her dietary intake and activity

¹⁷ Source of image: <http://topicstock.pantip.com/food/topicstock/2011/07/D10772335/D10772335.html>

(Kumanyika, 2008; Rhee, 2008; A. K. Ventura & Birch, 2008). Such behaviours include feeding and eating patterns; physical activity levels; developing preferences, values and beliefs about healthy lifestyles, and the creation and control of the environments, including the media, that children are exposed to.

This section provides data and trends in family patterns in the Bangkok metropolitan area. Here nuclear families are common, parents are often older than in rural Thailand and the divorce and separation rates and single parenthood are increasing. Furthermore, families live in isolation relative to those in rural communities, and have a small number of children.

According to the NSO population and housing census conducted every ten years, household size has been decreasing throughout the country. This is partly due to a continual decline in the birth rate in Thailand from 2000 to 2010 (National Statistical Office, 2010). In 2010 the fertility rate was 1.51, a reduction from 1.88 in 2000. At the same time the size of families in Thailand overall shrank from 3.8 members per household in 2000 to 3.2 in 2010. Bangkok had the smallest family size of 2.8 members per household, and this continues to decline (National Statistical Office, 2010). An average of 2.8 members per household may indicate that the parents have to take care of a child, which is uncommon for full-time employed parents working in metropolitan area, because there are no other relatives or family members available to help with this task.

Furthermore, the birth rate of 1.2 in the Bangkok area is the lowest in the country (National Statistical Office, 2010). In 2009, statistics showed that women in Bangkok

married at the age of 23 compared to 21 in the country overall (National Statistical Office, 2010). Countrywide there has been a reduction in extended families. Mothers in Bangkok have a lower rate of exclusive breastfeeding at six months compared to the country's figure overall, at 8.2% and 12.3% respectively and 39% and 41% for predominant breastfeeding at under 6 months (National Statistical Office, 2013b). This is due to working conditions that do not allow maternity leave of more than three months (Bureau of Labour Standard Development, 2008). There are few differences in men and women's participation in labour countrywide (National Statistical Office, 2010), but type of work and working conditions that employed mothers experienced are different in terms of time they could manage for child-rearing. For example, working in agriculture allows mothers more time with their children as it requires fewer working hours, while working in industry or an office in the Bangkok metropolitan area requires more working hours plus time spent travelling from house to work. This implies that urban mothers tend to have limited time to spend with their children.

Working conditions, including workplace regulations and hours, and the transportation available between home to work can make time management difficult for parents and may have repercussions on food practices, such as skipping breakfast, having dinner late, being unable to cook at home, having limited time for family physical activities, eating snacks in the car and spending less time with the children. This is also the case in other settings such as Hong Kong and Winnipeg, Canada (Chan et al., 2010a; Slater et al., 2012). General working hours for office workers and civil servants are 8.00 am to 5.00 pm. The daily commute therefore adds one to two hours before and after work, i.e. the working day lasts from 7am to 7pm. Choiejit and Teungfung (2005) found that commuting time for people traveling in the outer Bangkok areas and between the outer

and inner city area ranges from 1-2 hours a day. Exceptions exist for those working at home or who have their own business, such as a grocery shop, food vending stall or a motorcycle taxi near to home. All of these issues are highlighted as important by Liu et al. (2009), Phipps et al. (2006), Brown et al. (2010) and G. Lee and Kim (2013) using longitudinal data in the US, Canada, Australia and South Korea and reporting a positive relationship between a child's BMI and the mothers' work hours. They recommend the provision of support for employed mothers in these countries.

Under the working conditions of parents living in Bangkok, the decreasing birth rate and the lower number of children per family as previously mentioned (National Statistical Office, 2010). This resulted in high attention and expectations placing on a child and the need for formal care for young children in urban areas. Children are expected to start interacting in formal care settings such as nurseries and kindergartens at a young age: one-year-olds may be looked after in nurseries and three-year-olds in kindergartens. This, combined with social values and environmental factors, can result in practices that promote childhood obesity such as overfeeding, and the challenges that carers face when children are directly exposed to promotion of unhealthy snacks through mass media, where the former have less control. An early-childhood longitudinal study of a representative US kindergarten cohort by Chen and Escarce (2010) found that children of single mothers and only children are likely to be overweight more than other children. They explain that single mothers tend to have fewer resources, including time and a supportive network, for nurturing their children. This was quantitative research and therefore the explanation of causality is limited by the study design. Hunsberger et al. (2013) analysed cross-sectional data from the baseline survey of the longitudinal cohort study of children aged 2-9 from

eight European countries and found that only children are more likely to live in a two-parent household, have less playtime outdoors, consume sugar, have a television in their bedrooms and that their parents use food as a reward.

3.3.2 Differences in socio-economic status of families living in urban area

According to the 2013 NSO Household Socio-economic Survey the population of Bangkok has the highest mean monthly income in the country at 43,000 THB per household (860 GBP), compared to 25,000 THB (410 GBP) in the country overall.¹⁸ Income distribution was calculated by dividing the population into five groups, with the first group earning the lowest and the fifth earning the highest income per capita per month. The survey reveals that the fifth group had 47% of total income distribution while the first group only gained 6%. However, the higher-income families also had greater debt and expenses. Considering income and expenses by occupation, the survey found that households with family members working as professionals/academics/high-level managers had the highest monthly income at 56,000 THB (1,120 GBP); the households of business owners (non-agricultural) earned 34,000 THB (680 GBP); those of labourers/general office workers earned 22,500 THB (450 GBP); and households working in agriculture earned the lowest income. A survey of the urban population with low income in all cities, using the National Housing Authority's framework to identify communities in urban areas, was carried out in 2006. The occupations of people of low-income urban communities throughout the country included office workers, salespersons at malls or shops, petty traders, unskilled workers, general labourers and taxi/motorcycle taxi drivers.

¹⁸ This paper applied exchange rate of approximately 50THB for 1GBP throughout the document.

Socio-economic status can affect living conditions in an urban area such as Bangkok in many ways, including the choice of housing type and location, food consumption and transportation.¹⁹ For families with pre-school-age children, budget limitations dominate the selection of nurseries and kindergartens. Importantly, socio-economic status has been shown to play a role in the development of obesity, and I explain the reasons for this below (Ball & Crawford, 2006; Burgi et al., 2010; W. Dietz, 1991; Kleiser et al., 2009).

Most research studies that investigate the relationship between socio-economic status and obesity have been conducted in the US and the UK, with the evidence suggesting that those with lower socio-economic status are more likely to be overweight and obese (Stamatakis et al., 2010; Wang & Beydoun, 2007). Research has proved that easy access to supermarkets promotes a healthier diet (Larson et al., 2009; Powell et al., 2007), while easy access to fast-food or takeaway outlets has a contrary effect (Cummins et al., 2005; Macdonald et al., 2007; Macintyre et al., 2005; Pearce et al., 2007). In nations with developing economies the results are in the inverse direction: the well-off, especially the children, are more overweight (Dinsa et al., 2012). However, the global trend is for obesity to shift to lower socio-economic groups as a country's gross domestic product improves (Monteiro et al., 2004).

In Thailand the incidence of overweight and obesity is still higher in the well-off population (Institute for Population and Social Research, 2014).²⁰ It is significant that

¹⁹ Based on income, education and occupation.

²⁰ This analysis uses data from the 2012 Health Examination Survey of Thai people aged over 15 throughout the country. The research team used the BMI of the population and their monthly income to reach this conclusion.

the obesity rates are higher in areas where people have higher incomes. Bangkok, with the highest incomes, has the highest rates of obesity compared to Thailand overall, and the number of overweight and obese people among the top 20% in socio-economic terms (the fifth quintile) is 1.5 times higher than those in the lowest-socio-economic group (the first quintile). Similar findings have been discovered in a national survey of children aged 0-5: the young children of wealthy families are more than three times as likely to be overweight and obese (weight per height $>2SD$) than their counterparts in the lowest quintile, at 11.3% and 3% respectively (National Statistical Office, 2007).²¹ However, the study also emphasises that the trend of obesity among low-socio-economic groups living in both urban and rural areas has been increasing steadily.

Food choice has special characteristics in Bangkok, where people from all socio-economic groups can access high-caloric foods. The increasingly low price of unhealthy food gives low socio-economic groups better access to high-calorie food, as shown in a comprehensive review of food prices and affordability in various countries by A. Lee et al. (2013), who call for initiatives to develop indicators to monitor the price and affordability of ‘healthy’ and ‘less healthy’ foods and diets which policymakers in all countries could use to address food policy for the better health of the population. The Thai Health Report reveals that from 2002 to 2012 the price of ‘unhealthy food’ became cheaper relative to income. For example, Thai people in general have the power to purchase 2.5 times more burgers, twice as many sweetened-carbonated drinks and 1.5 times more ready-to-eat food, while the prices

²¹ Classified using wealth index of household used by the National Statistical Office

of fresh food such as meat, fish and fruit have remained the same (Institute for Population and Social Research, 2014).

3.4 Child-rearing in urban areas and the formal care system in Thailand

3.4.1 Child-rearing in Bangkok

Research on childcare in Thailand was a focus in the 1990s when population study researchers discovered a significant increase in the number of children in non-maternal care in Bangkok and Chiangmai, the main cities in Thailand. They initially explained this considerable change by two factors, i.e. the rise in women's educational levels and labour participation, and a decline in the fertility rate (Richter & Podhisita, 1992; Richter et al., 1992; Wongboonsin, 1991). Potential factors contributing to child-rearing practices included in this investigation are mothers' employment, household size and migration of parents. These are social and economic conditions that can affect caregivers' lifestyles and the choices that they can make regarding childcare.

The status of women in Thailand, which is relatively high, the changeable social structure and rapid socio-economic development are driving factors in the increase of women's labour participation, which results in a need for childcare in urban society (Rachapaetayakom, 1988; Richter et al., 1992). Although women's participation in the labour market is well recognised, mothers are also expected to be young children's primary caregivers. Thus employed mothers are likely to experience conflicting expectations from society: that they both work outside the home and look after their children.

Richter and Podhisita (1992) explored childcare in Bangkok using a survey and in-depth interviews to understand families' choices of childcare, the reasons behind their decisions and their satisfaction with their choices.²² The study revealed that the mother looking after her children from birth to three years is the first choice, with grandmothers the second preference if possible. For children aged 3-5, 61% of respondents stated that they would send them to nursery or school for proper care, while 30% indicated that the mother should still be the primary caregiver. Other options for care included both parents, the maternal grandparents, the paternal grandparents, any other relative and non-relatives. By 'non-relative', the respondents meant anyone available, such as older people in the neighbourhood. Richter et al. (1992) conclude that when deciding about childcare parents consider different factors including the family's socio-economic status, the availability of relatives, and informal networks of unrelated babysitters. Sending children to other provinces to live with a separated spouse, grandparents, or relatives in the home town was the last option that parents chose.

In the same study, in-depth interviews and focus group discussions found that the working mothers had to decide between having their children cared for by relatives or non-relatives in Bangkok and sending them back to their rural hometown, visiting them when they can. Most of their decisions were influenced by economic factors (Richter et al., 1992) including payment to non-relatives for looking after the children, transportation costs if the child does not live with the mother, and family income. The type of unrelated carer varied depending on the family's socio-economic status and

²² The quantitative part of this study included a household survey among 1,515 ever-married women in Bangkok in 1991; the sample was obtained by random blocking using the National Statistic Office methods.

included a housemaid, daily babysitter or trained nanny, and family friends or neighbours. This is the only study that has explored this issue in depth.

The Thai government showed interest in investing in early childhood development in the Education Act (1999) when it allowed local authorities and community organisations to arrange formal care for pre-school aged children (Ministry of Education, 1999). The Thai government stated in its Tenth Economic and Social Development Plan (2007-2011), a macro policy that directs other Thai policies, that it would provide support for human capital development for the greater development of the country (National Economic and Social Development Board, 2007). The introduction of the Ninth National Education Plan (2002-2014), with its emphasis on the importance of early childhood development, resulted in greater support for and investment in the development of formal care for pre-school children. The support includes a tax exemption for parents whose children attend public or private kindergartens (Ministry of Education, 2002).

Research in later years therefore aimed to understand the factors that influence parents' selection of formal care units, rather than why they decide to put children into formal care or not. Parents who decide to send their children to state kindergartens can enrol them in facilities in their catchment area free of charge. The services are provided by either the local authority or the Ministry of Education. In Bangkok private kindergartens are also available. Namtien and Jaroenkul (2014) reports in their study of 374 parents sending their children to 106 small-scale (less than 120 students) private kindergartens in Bangkok that they prioritised the curriculum (focusing on life skills such as problem-solving and balanced cognitive and emotional development),

the inside kindergarten environment, the quality of the teachers and the fees when choosing a kindergarten for their children.

3.4.2 Schools and kindergartens for pre-schoolers in Thailand: a formal care choice

Formal care is a substantial choice that parents chose to provide care for their pre-school children and includes both private and public kindergartens. In Thai, the words ‘school’ (Rong-rien), ‘kindergarten school’ (Rong-rien-anu-ban), kindergarten or child development centre, can be used to define a place where parents send their children for childcare and to learn.²³ In this study the term ‘kindergarten’ is used to describe a place that cares for children aged 3-5. Kindergarten is a newly exposed environment for children, outside their home where they start to learn how to live in a bigger society. According to the national educational standard for pre-school level, children should learn life and social skills in this new environment and kindergarten staff are expected to stimulate their development (Ministry of Education, 2010).

In 2008, data from the NSO showed that 70% of children aged 3-4 and 97% of 5-year-olds in urban Thailand attended formal care.²⁴ Of the 3-4 year-olds, 44% were registered with kindergartens (child development centres) run by local authorities and the remainder with private kindergartens. The formal age for starting school in Thailand is seven, especially at government-run schools; however, many private schools accept children who are younger, depending on their level of development.

²³Anu-ban means to prepare someone for the next step; thus Rong-rien-anu-ban in Thai means a place where the children are prepared to enter primary school.

²⁴This was the most up-to-date data at the time of writing

Formal care services in Thailand can be grouped into four types, as illustrated in Table 3.1. For children aged up to 3 only private-nurseries are available. Local authorities, under the Ministry of Interior, offer free childcare services for children aged 3-4, while the Ministry of Education is the main service provider for 5-6 year olds.²⁵ Private kindergartens overseen by the Ministry of Education are also an option for all ages.

Children Responsible body	Children aged 2–3	Children aged 3–4	Children aged 4–5	Children aged 5–6
State kindergartens				
<i>Ministry of Education</i>	No services	No services	Kindergarten level 1	Kindergarten level 2
<i>Ministry of Interior (Local Authority) including Bangkok Metropolitan Administration</i>	No services	Child development centres	No services	No services
Private kindergartens				
	Nursery (registered with the Ministry of Social Development and Human Security)	Kindergarten level 1 (registered with the Ministry of Education)	Kindergarten level 2 (registered with the Ministry of Education)	Kindergarten level 3 (registered with the Ministry of Education)

Table 3. 1 Types of formal care available for children aged 2-6 in Thailand

The location of kindergartens, i.e. close to the parents' house or workplace, and the unavailability of parents or other carers are the main reasons for enrolling children in formal care (Trakulwong et al., 2007). Children are taken care of by many caregivers; e.g. they may be in formal care from 9 am-3 pm on weekdays and spend time with their parents or other carers at home at weekends.

²⁵ According to the 1999 Decentralisation Act local authorities receive a budget from the Ministry and organise welfare, including educational services for the population in their catchment area.

In general all kindergartens provide lunch for the children. Private kindergartens normally include school lunch in the fee, and state kindergartens receive a budget for lunch and milk from the government via the local authority. Apart from lunch and afternoon snacks, snack stalls are a potential source of additional food and snacks for children.²⁶ Considering the urban food environment presented in the previous section, it is unavoidable that pre-schoolers are part of an obesogenic environment. School food is seen as a potential channel through which public health practitioners believe they provide a healthy option for children, as discussed in Chapter 7.

3.4.3 Background information on the case-study kindergartens

Three kindergartens were selected for this study to represent the families of pre-schoolers in the Bangkok area with differing socio-economic status. The kindergartens are all close to residential areas and are surrounded by a number of markets, convenience stores and local grocery shops. They are easily accessed on foot or by motorcycle or car. Families from the lower socio-economic group send their children to Temple Side Kindergarten. Parents do not pay fees for this state kindergarten as it is fully supported by the local authority, although there is a small payment per semester of 300 THB (6 GBP) for the uniform. Families from the middle socio-economic group send their children to New Market Kindergarten, which charges 1,500 THB (30 GBP) per month, and children from the local authority area receive free school milk and toothbrushes. Some families in the lower economic group manage an education plan and budget to send their younger child to Temple Side Kindergarten and the older child to New Market Kindergarten (see Chapter 2). Private Land Kindergarten, which

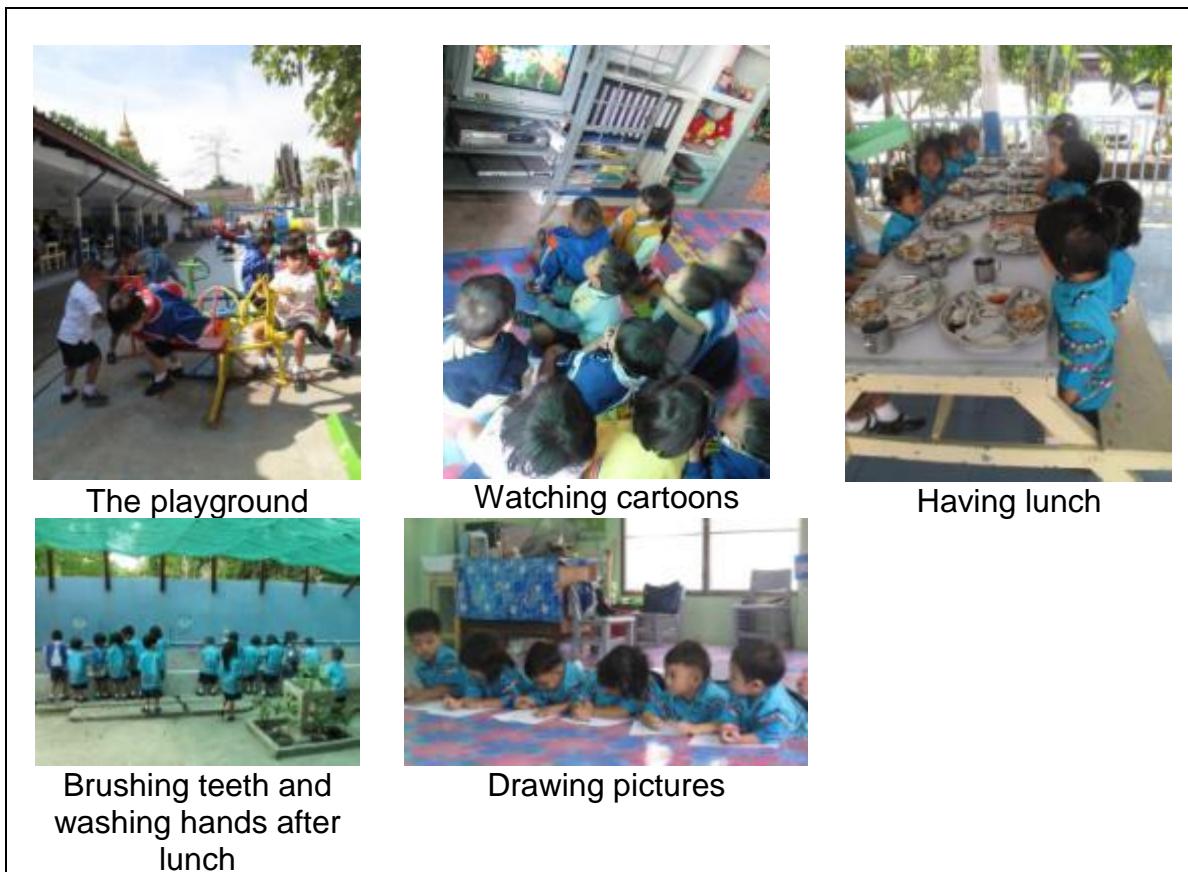
²⁶ Consisting of 3-4 tablespoons of rice, 2 tablespoons of meat and 2 tablespoons of vegetables and fruit, according to the guideline. Snacks usually include Thai desserts (twice a week) and fruit (three times a week). These are compulsory in public (government-run) kindergartens and schools.

is patronised by families in the high socio-economic group, charges 15,000 THB (300 GBP) per month (see Figure 3. 2). The New Market and Private Land kindergartens are private and are registered with the Ministry of Education. The monthly fees are the equivalent of the average monthly income of the kindergarten staff (approximately 20,000 THB) and higher than the monthly income of a general labourer (13,046 THB per month) (National Statistical Office, 2013a). Figures presented in this sections were taken by myself with authorisation by teachers, parents and children and some pictures were those publicly available and taken from kindergarten's Facebook page.

(1) Temple Side Kindergarten

Temple Side (TS) kindergarten and school are located next to a Buddhist temple on a small road that connects Bangkok with a residential area on the edge of the city. TS kindergarten is a part of TS primary school, and takes a total of 240 students (both kindergarten and primary school). The kindergarten (or child development centre) for 3-4 year-olds is under the management of the local authority, while the upper kindergarten levels (levels 1 and 2, for children aged 4-6) and primary education level are under the Ministry of Education. The school lunch and milk budget for students at all levels is supported by the government budget via the local authority. A teacher at TS school who owns a small catering service and who won a school lunch contract from the local authority manages the school kitchen and cooks for all the students. TS school and kindergarten participated in the Department of Health's health-promoting school programme in late 2013, when the headmaster closely monitored the school and kindergarten's food and snack stall, resulting in the removal of sweetened-carbonated drinks and ice cream from the stall.

Most of the pre-school children at TS kindergarten live approximately 500 metres away. They are from families in the lower socio-economic group, compared to the other two kindergartens. Parents' include daily labourers, employees looking after shops for the owners and motorcycle and taxi drivers. Figure 3. 6 illustrated activities that children do at Temple Side kindergarten.



**Figure 3. 6 Environment and activities at Temple Side kindergarten
(permission for publication of photos given by teachers, parents and children)**

(2) New Market Kindergarten

New Market kindergarten and school are located in a residential area of Bangkruai, a border district of Bangkok and Nonthaburi province, and offer a nursery for children aged 2, kindergarten (3-6) and primary school (11-12) places. The kindergarten is

registered with the local authority for free school milk and toothbrushes. The food is managed by the school's owner. The kitchen manager also runs a school stall selling breakfast foods such as noodles, rice porridge and snacks, e.g. chips, sausages, fried meatballs and ice cream, during the lunch break and after school. There is a big playground full of play equipment. All the children are allowed to play in this area before the national anthem is sung at 8 or 8.40 am and at lunchtime.

Most of the children attending this kindergarten are from middle socio-economic families. Parents' occupations include office workers (the biggest proportion of parents work for the state-owned electricity-generating authority office, which is about a kilometre away); traders; small business owners; and taxi drivers using their own cars. The kindergarten is located between a residential and a business area. Most families that sent their children to this kindergarten live 1-5 kilometres away. Figure 3. 7 illustrates environment and activities that children do at New Market kindergarten.



Figure 3. 7 Environment and activities at New Market kindergarten

(3) Private Land Kindergarten

This private kindergarten in the residential area of Ladprao offers places for 1-6-year-olds. There are four class levels: nursery, for those under 3 years old and kindergarten levels 1, 2 and 3. The school opens from 8 am until 6 pm and provides three main meals including breakfast, lunch and dinner and two milk and snack breaks for the children. There is no food and snack stall. The owner runs the kitchen with a catering team. The school area is about 6,400 square metres and it is surrounded by private residential areas; there are no mobile snack stalls or grocery shops within 400 metres. Fresh produce markets, local shops and night-time mobile food and snack stalls are a five- to ten-minute drive away.

Pre-schoolers attending this kindergarten are of a high socio-economic class. Their parents are well educated, most having a Bachelors degree, and work as business owners, professionals (for example physicians, architects and designers) and high-level managers. Almost all of the families sending their children to this kindergarten use a private car as their main vehicle to drop off and pick up their children. The distance from the kindergarten to their homes is approximately 3-7 kilometres.



Figure 3. 8 Environment and activities at Private Land kindergarten

Data on the three selected kindergartens are summarised in Table 3. 2.

	Temple Side kindergarten	New Market kindergarten	Private Land kindergarten
Type	Fully funded by local authority as child development centre	Private service with free school milk from local authority	Private service
Fee	None	1,500 THB (30GBP) per month	15,000 THB (300 GBP) per month
No. of places	40 pre-school and 200 primary school	180 pre-school and 120 primary school	70 pre-school
Operating time	8 am-2.30 pm	8 am-3 pm	8 am-6 pm (8 pm by arrangement)
School food	<ul style="list-style-type: none"> • School food and snack stall selling breakfast and snacks after lunch and after school • School lunch • School milk with biscuits 	<ul style="list-style-type: none"> • School food and snack stall selling breakfast and snacks after lunch and after school • School lunch • School milk with biscuits 	<ul style="list-style-type: none"> • School breakfast and soya milk • School lunch • Children bring milk from home to drink twice a day • School dinner
Playground size and use	<ul style="list-style-type: none"> • 20 square metres • Children are allowed to play 10-15 minutes per day on three days a week 	<ul style="list-style-type: none"> • 30 square metres • Children are allowed to play 5-10 minutes everyday 	<ul style="list-style-type: none"> • 50 square metres • Children are allowed to play 20-30 minutes everyday

Table 3. 2 Summary data of the three kindergartens selected for this research

This chapter has presented Bangkok's population data, the characteristics of residents of differing socio-economic status, the living conditions, the food environment, the spaces available for physical activities, and the role of formal care as a place where pre-school children spend significant amounts of time. After presenting the macro picture of the environment and lives in Bangkok, the last part of the chapter has introduced the three case-study kindergartens. These kindergartens and the households of the children are located in Bangkok Metropolitan area. It should be noted that all macro-level elements are presented at the population level rather than specifically targeting individuals, which means that the same conditions do not apply to all people in the area. The presentation of this data using an issue-based format

rather than layers of EST environment frameworks can generate a lively and in-depth stories of relationship between the actors and levels of environment. This chapter has not only introduced the research context but also guides the analyses in the following chapters.

CHAPTER 4: MEALS

This is the first empirical chapter that reports the findings of my study. As mentioned earlier, I divided the results into four chapters, including chapters involved the pre-schoolers' consumption of meals (breakfast, lunch and dinner), milk, snacks, plus the fourth chapter discussing policies that are relevant to food consumption and growth measurement of pre-school children implemented in study sites. In these chapters, I employed EST and structuration theory to present and explain findings. I use EST as a framework to show how factors identified from my study are preliminary located at different levels of ecological systems and interact in a way that can both promote or prevent childhood obesity. However, the framework on its own cannot offer explanation of how those identified factors situated in different levels of society work together to influence practices that can create development of obesity among pre-schoolers. I therefore use the ST which offers theories to investigate the social mechanisms of identified factors at different levels of society. ST offers benefits as it can explain actions that have been carried out by parents or teachers and the values that underpinned the actions. In addition, ST is employed to explain certain practices on the part of parents or teachers which are passed to the young children via teaching or modelling.

4.1 Background

Thai people customarily have three meals a day, which the national nutritional guidelines define as providing the main energy and nutrition intake for pre-school-aged children (Chittchang, 2012). Consequently these meals are connected to the development of childhood obesity in many ways. Eating a quality meal including a

good proportion of nutrition is suggested for the control of children's weight and to ensure their appropriate growth and development (Chittchang, 2012). However, a number of practices have been identified by scholars as contributing to the development of childhood obesity, for instance the consumption of big meal portions and energy-dense food (see Chapter 1). Problems connected to consumption can be categorised into two groups: the amount and the type of food that pre-schoolers consume.

The process of meal consumption among pre-school-aged children is complex because a number of actors are involved at different levels of the social system: the government and the business sector at the macro level and parents, teachers and other caregivers such as siblings and peers at the meso and micro levels. Employing EST (see Chapter 1) to guide my analysis of meal practices places the child in the centre of her environment. She directly and indirectly interacts with and is influenced by actors in the family, the community, the kindergarten and those in the macro-economic and political systems. Influences and actors in the macro-system include interventions related to pre-schoolers' meal consumption (see Figure 4. 1).

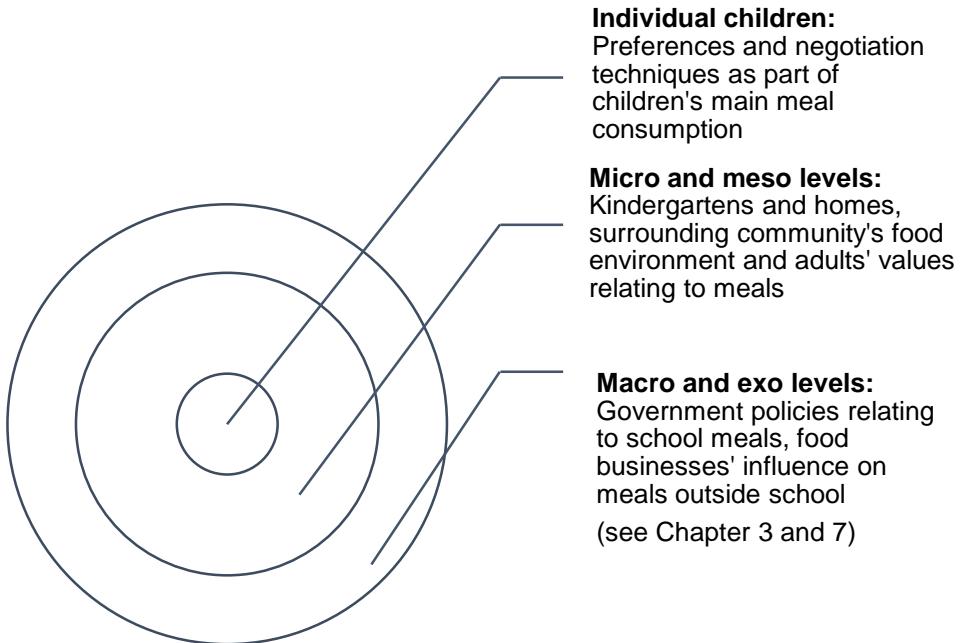


Figure 4. 1 Application of EST in the analysis of meal consumption among pre-schoolers

One outstanding characteristic of the investigation of children's practices is that children, especially at pre-school-age, still depend on their caregivers, who control most of their social environment. Meanwhile there is an emerging trend towards the neo-liberal concept of child-rearing which encourages children's autonomy, seeing the child as an individual or social actor who can make reasonable choices and take responsibility for them (Millei, 2012; Reynaert et al., 2009; Vandenbroeck & Bie, 2006). This concept is growing in importance in child-rearing in Bangkok, as shown by Nanthamongkolchai et al. (2009) and in my study. In addition, mealtimes are an important space where children can engage in power play to negotiate for their preferences. 'Eating' in this study includes not only the child's act of eating but also other actions around eating performed by adults, including acquiring and preparing food, serving their children, and their own eating as a role model for their children. In my study pre-schoolers' eating practice took place in two areas: at kindergarten; and when they were with their family at home or at food outlets, restaurants, shopping

malls etc. While the chapter on milk consumption (see Chapter 5) emphasises the importance of the macro environment and how it influences individuals and children's milk consumption, this chapter focuses on interactions among individuals, and specifically on how parents and children develop their strategies for negotiating for their preferred practices. The core analysis in this chapter unfolds and reveals the social practices around meals at the kindergarten and family level—EST's 'microsystem environment' (see Chapter 1). Actors who directly interact with pre-schoolers in this microsystem include their teachers, their parents and other caregivers at home, and their peers. The children's characteristics, their responses to meal practices, and their actions and preferences regarding eating meals are investigated.

The findings presented in this chapter are divided into three sections. The first covers meal practices at kindergarten and at home and the conditions that shape these practices, e.g. government policy on school lunches and parents' working conditions. The environment and food provision at kindergartens are constructed around a routine with rules and customs about how children should behave at the dining table, which are overseen by the teachers: the regulation implementers. Food practices at home, where the rules about eating are more relaxed, leave spaces for children to exercise their power to negotiate for their preferences. Adults and children in both settings are influenced by the macro and meso systems and values guide their actions in relation to pre-schoolers' meal consumption.

The second section outlines the values behind meal practices. These were revealed by individuals through their actions and deliberations. Although the original EST includes values in the macro-system environment, the values that I present in my study

were obtained from individuals' interpretations and practices that I observed as clearly active in their micro-systems. These individual values helped me to understand the extent to which individuals produce and reproduce societal values. The last section presents negotiation and agency between parents and children, emphasising how young children exercise their power in the area of food consumption.

4.2 Meal practices at kindergarten

In this section I present the findings on meal practices at kindergarten and at home. Each setting has its own specific characteristics that affect pre-schoolers' meal consumption, e.g. the quality and amount of the food that is consumed and the frequency of meal consumption (number of meal consumption per day). Meal practices in both settings allow the children to learn and accept practices and values relating to meal consumption; e.g. they absorb the value of food and the benefits of consuming food and nutrients. For example, teachers and parents explain to children that eating fish will make them smart, or that eating a meal will make them grow and keep them healthy. Children have their own agency and can choose to accept such practices and values in their meal practices or not, as illustrated in section 4.4.2.

Practices around providing meals at the three kindergartens were both similar and uniquely different. Lunch is a common meal that all kindergartens throughout Thailand provide to their students. However, Private Land Kindergarten, whose hours are 8.00 am to 6.00 pm, also offers breakfast and dinner. It is uncommon for kindergartens in Bangkok to provide dinner for their children because most operate from 8.00 am to 3.00 pm, so the children are at home by dinner-time. Many kindergartens, both public and private, including Temple Side and New Market Kindergartens, make breakfast

available for purchase at their food stall, along with snack foods that the children can choose from. The catering managers at the three case-study kindergartens claimed that when they developed the lunch menu their main considerations were the children's food preferences; nutritional concerns including incorporating the five food groups; introducing new foods to the children; and their budget for the meal. None of the managers directly mentioned the school lunch standard guidelines endorsed by the Department of Health (Chittchang, 2012). Staff at different kindergartens prioritised these factors differently. I observed that the menu was repeated every week or fortnight at all three kindergartens, and there were certain dishes that the majority of the children did not appreciate, judging from the leftovers and the small number of children who asked for a second helping.

4.2.1 Food management at kindergartens

The type of meal that a kindergarten provides depends on whether it is publicly or privately owned. At public kindergartens the budget for lunch and the quality of the food provided is mainly influenced by the School Lunch Policy (Office of Basic Education Commission) and the school lunch standard guidelines (Chittchang, 2012). Differences in implementation can be found among public kindergartens due to differences in local authority policy. Decisions about food provision at kindergartens are controlled by many actors, including the local authority in the case of government-owned kindergartens or the owners in the case of private kindergartens, and the catering staff. Temple Side Kindergarten is a public kindergarten run by the Bangkruai Municipality.²⁷ The two private kindergartens in my study managed their meals according to the owners' policies. I roughly calculated Private Land Kindergarten's

²⁷ The local authority in charge of seven kindergartens in the Bangkruai region.

budget, having participated in the shopping for ingredients, and found that the owner spent approximately 75 THB on three meals per child per day, slightly more than the government's lunch budget of 20 THB per child for the school lunch scheme (see Chapter 7).²⁸ The owner of the other private kindergarten, New Market Kindergarten, refused to reveal the meal budget.

Different motives were found in the kindergarten directors' organisation of meals for their children: while the public kindergarten's food management was supported by the government budget and controlled by government regulations, the two private kindergartens, which offer their services to parents and are paid by parents, are therefore also monitored by parents. I observed a stronger will to monitor the kindergarten's implementation of policy at Private Land Kindergarten, where parents of higher socio-economic status pay high tuition fees, than at New Market Kindergarten. At Private Land Kindergarten some parents stayed to watch their children eat breakfast and dinner. The canteen has a glass window on one side of the room through which parents are allowed to observe how their children eat at kindergarten, although most have to hide while watching otherwise the children cry and call out to them. Few parents spent time at Private Land Kindergarten talking to the owner or the head of the catering staff. These actions on the part of parents were influenced by the kindergarten's initial policy of taking good care of the children by offering them good-quality food, and the parents' monitoring encouraged the kindergarten director to offer better service to its customers, the parents. Many of the parents who sent their children to Private Land Kindergarten revealed that one of the

²⁸ From my observation the three meals at Private Land Kindergarten were little different in terms of the amount and the proportions of meat, carbohydrates and vegetables.

reasons they had chosen it was its provision of three good-quality meals for the children.

The daily menu on the notice board is advertises private kindergarten services. Parents of the children at all three kindergartens asked their children about the meals that they were served at kindergarten from time to time, and the children in my sample could tell their parents that they had had chicken, pork, eggs, or vegetables for their lunch, although they could not specify the types of vegetable. All three kindergartens also kept a daily logbook for each child that was used as a main means of communication between teachers and parents and reported on the individual children's activities at kindergarten. Private Land Kindergarten included a section in the logbook that reported how many cartons of milk the child had drunk and at what time, and how much the child had eaten at each mealtime.

4.2.2 Quality and quantity of food at kindergartens

Despite different monitoring and control systems implemented in public and private kindergartens—one according to government policy, the other controlled by the parents who paid the tuition fees—the quality of the nutrition and the size of the meal served to the children was not far from the nutritional guidelines of two portions of carbohydrate, two of protein (not including milk) and fat, and one of vegetables and fruit.²⁹ I describe the different menus and food preparation processes that I observed below.

²⁹ The guidelines state that the size of a portion is one tablespoonful.

The director of Private Land Kindergarten showed his commitment and care in providing what he saw as good food to the children at his kindergarten. He went to a fresh-food market at 5 am every day to buy vegetables and other fresh ingredients for his catering team. He encouraged the children and staff at his kindergarten to eat a lot of the food that he had so proudly prepared.³⁰ At New Market Kindergarten the catering staff went shopping once a week and chose ingredients that were best suited to their budget. Teachers attending New Market Kindergarten often complained to me about both their and the children's food, and many brought their own lunch to work. The taste, the quality and the types of food served were their main objections. Some of them considered the kindergarten owner too strict about cost control, and others added that they did not think the children liked the food either (Observation, October, 2013).

An example of food that attracted negative comments from kindergarten staff is rice with fish-ball soup and fried eggs or sausages. Two members of the nursery staff who were also the mothers of pre-schoolers at the kindergarten called the soup '*stinky*' and removed it from their sons' plates. Another dish that received poor feedback from kindergarten staff was rice with chicken in red sauce. The chicken was cut into very tiny pieces and one staff member said quite loudly '*This dish looks like dogfood*'. Other staff members smiled and laughed to show their agreement. (Observation at New Market Kindergarten, October, 2013)

At Temple Side Kindergarten where the catering service is in principle under the control of the local authority, the meals are mostly produced according to the national

³⁰ In other kindergartens the staff ate the food prepared for the children by kindergartens' catering service, except for Private Land Kindergarten where food for staff is cooked separately.

guidelines. The main complaint that I received from the teachers was about the small servings given to children and staff. The staff at Private Land Kindergarten did not complain to me about the food. The chef had more than ten years' experience of school catering, and when I went food shopping with the owner I observed that he paid careful attention to selecting good-quality ingredients for the children's food and cheaper ones for the teachers.

Figure 4. 2 illustrates examples of school lunches at the three kindergartens. Pictures from first row were taken at Temple Side Kindergarten where food is served in divided lunch plate, which is a normal practice for government-owned kindergartens and schools. Pictures from second row represent how lunch is served at New Market Kindergarten, while pictures in the third row were taken at Private Land Kindergarten. These pictures illustrated similar portion of lunch that kindergartens provided for preschoolers, significant differences were menus and how food were presented to the children.

Temple Side Kindergarten: (left) rice with fried Chinese sausage, Thai dessert; (middle) rice with minced pork, carrot, and tofu soup, a piece of ripe papaya; (right) rice with cabbage, minced pork, and green bean soup, sago with sweetcorn and coconut milk



New Market Kindergarten: (left) rice with chicken stew, coconut jelly and sweetcorn in syrup (middle) egg-fried rice and cabbage soup, a piece of guava; (right) rice with Chinese sweet barbecue pork and vegetable soup, a piece of pineapple



Private Land Kindergarten: (left) Japanese rice with fish tempura and vegetable soup; (right) sushi (rice, shredded pork, eggs and carrot wrapped in seaweed)



Figure 4. 2 Examples of school lunches at the three kindergartens

The Department of Health provides training in nutrition for kindergarten and school catering staff throughout the country.³¹ However, the cooks at the three case-study kindergartens had never attended such training. My observation and the interview data suggested that they cooked according to their experience, using flavours that they

³¹ According to the expert consultation meeting on the preliminary results presentation of this study organized on 13 June 2014.

assumed the children would like: when we discussed foods the children enjoyed one chef told me: '*The children love these sauces [teriyaki sauce on deep-fried fish, one of the children's favourite meals] because they taste sweet, and it makes them eat a lot*' (*Head Chef, Private land Kindergarten*).

Concerning parents' involvement in monitoring food that kindergartens' catering team provide for their children, I found some parents monitor how their children eat at kindergartens by asking their children about food that they had in kindergartens. Preschool children can explain what they had and whether they like the food. However, only one parent from New Market Kindergarten persuaded the kindergarten to remove a certain noodle menu that he believed to contain monosodium glutamate (MSG), while the other parents do not intervene. Private kindergartens take into account satisfaction of parents, while bearing in mind their investment in the business. Temple Side Kindergarten, a government-owned kindergarten is bound to implement government's policy. I did not observe involvement of business sector in this aspect of using kindergartens as a network to communicate with parents and children about food as much as they did with milk and snacks (see Chapter 5 and 6); only one kindergarten runs its own food stall and make snacks available for children to buy during lunch time, which is a very competitive option compared to kindergarten's lunch. Quality and quantity of food at kindergartens, regardless of the different amount of budget and sources of budget, are not different in terms of nutritional values. Types of food and taste defined differences between the three kindergartens. The private kindergarten, namely Private Land Kindergarten attended by higher socio-economic status families are more responsive to their customers by providing more appetising food (see Figure 4. 2).

4.2.3 Eating practices

In all three case-study kindergartens the children had to express their thankfulness for the food by reciting a rhyme before eating. The rhyme is very popular and has been used by almost all kindergartens in Thailand and from generation to generation. It reflects the values that Thai people give to food:

All food and rice are valuable, so they shouldn't be thrown away.

There are plenty of hungry people out there,

So we should be sorry for them not having food like us.

Thanks to our parents, who feed us, and to the farmers who produce the rice.

We will finish all the food on our plates.

Children learn how to eat their meals at kindergarten. They are expected to finish their plateful, and in accordance with this the staff served small amounts of two to three tablespoons of rice with meat and vegetables (less than the amount recommended in the school lunch standard guidelines) to the children at first to ensure that the majority cleared their plates. Once the children had finished their first portion the staff would encourage them to ask for more: I frequently heard '*finish your plate first, then you can ask for more if you want it*' in all three kindergartens when the children had started eating. The teachers walked around with a bowl of rice, asking the children if they needed more and giving positive responses such as smiles and compliments to those asking for additional food. I observed this at all three of the kindergartens. If the children liked the dish they asked for more, otherwise they just finished the first small portion.

After the children had been served members of staff were assigned to ensure that they ate their food properly, finishing what was on their plate and not talking or playing as they ate. The ratio of staff to children was important for this monitoring duty, and in public kindergartens this is determined by the national standard which is 10 students per one teacher (Ministry of Education, 2010). In private kindergartens the ratio varies according to the management. In Private Land Kindergarten, where the ratio was high with one member of staff to five children, all children had to finish their first portion. Staff monitored the children closely and fed them, especially those who refused to eat, who were categorised as 'difficult eaters'. In New Market Kindergarten, where the ratio was one staff member to fifteen children, it was easier for some children to leave their meal if they did not want it.

When a kindergarten is part of a big school, the timing of lunch affects the children's food practices as they have to share the canteen. Lunchtimes are usually divided into two or three sittings, with each child having more than fifteen to twenty minutes to eat. Some slow eaters were unable to finish their food in time. However, in small schools with adequate canteen space, such as Private Land Kindergarten, there is no such limitation and the children have up to 40 minutes for their lunch. Father of Sand, a normal weight boy from New Market Kindergarten suggested:

...lunch portion at the kindergarten (New Market Kindergarten) is small and not enough for my son... he had to ask for a second portion (as long as lunch time is not up)...but for those eat slowly like my eldest daughter...she eats quite slowly and I think they may not have enough lunch.

A reflection from Sand's father and my observation during lunch time at kindergartens addressed the importance of time limitation that some kindergartens have which affect pre-schoolers' eating practices.

Eating practice at three kindergartens	Temple Side Kindergarten	New Market Kindergarten	Private Land Kindergarten
Management of food	School lunch fund and policy managed by local authority	School kitchen managed by owner	School kitchen managed by owner
Operating times	8.00 am–2.30pm	8.00 am–4.00 pm	8.00 am–6.00 pm
Number of meals provided	Lunch plus 1 milk break; breakfast optional, for sale at school food stall with other snack foods	Lunch plus 1 milk break; breakfast optional, for sale at school food stall with other snack foods	Breakfast, lunch and dinner, plus 2 milk breaks
Menu (see examples in Figure 4.2)	Mostly according to DoH's guidelines: five food groups (big portion; children often have leftovers)	Developed by the school owner and the cook (small portion; some leftovers) (claimed to use DoH guidelines as a rough reference)	Developed by the school owner and the cook (small portion; almost no leftovers) (claimed to use DoH guidelines as a rough reference)
Serving protocol	Small amount first and more later	Small amount first and more later	Small amount first and more later
Serving container	Divided plate	Divided plate	Divided plate
Average meal duration	15-20 minutes lunch	30 minutes lunch	40 minutes lunch and dinner (breakfast opens freely from 7-8 am)
Ratio of teachers to students at mealtimes	1:15	1:15	1:5
Menu display and parent/children's participation in menu revision	No menu displayed Claimed to include children's views on the menu	Menu displayed but meals did not follow it; parents complained about menu but saw no changes as a result. Claimed to include children's views on the menu by observing food that children eat a lot/ask for a second portion/less leftovers)	Menu displayed and parents are mostly satisfied with the food Claimed to include children's views about the menu by asking children around what foods they wanted to eat

Table 4. 1 Summary of findings about eating practice at three kindergartens

School lunches have been studied by many scholars who have suggested that they are a space where different powers are exercised, including children's agency, teachers' duty, school's directors' policy and government policy (Daniel & Gustafsson, 2010). My findings confirmed the salience of these actors. At the national level, policy and guidelines support the provision of standard meals for pre-schoolers; however, when it comes to implementation at kindergarten, including the daily interaction of teachers and children in the canteen, the negotiation powers of different actors including the pre-schoolers play an important role in influencing how much of the actual meal the children consume.

My year-long observation of children eating at three kindergartens revealed that these comprise a relatively small proportion of their meal consumption compared to mealtimes at home, where they spend the rest of their time, including vacations and weekends. Private Land Kindergarten, which provided three meals a day, is an exception due to its long operating hours and the fact that the kindergarten has no snack-food stalls, as the other kindergartens do. The next section introduces meal consumption at home to complete the picture of pre-schoolers' meal consumption.

4.3 Eating with family

Parents face a more complicated situation than kindergarten management when making decisions about what food to provide for their pre-schoolers. With more relaxed rules about eating, parents have to take many factors into account when preparing food for their pre-school-aged children. These include their available resources and time, knowledge of nutrition for children, and cooking skills. Where the family lives and the parents work also influence their access to food sources. Social factors, such as

making a separation of children's and adults' meals (not eating together), and values, e.g. seeing meals as supporting children's physical and cognitive development and the caregivers' role as providing food and ensuring that children do not go hungry, also play a role in parents' decisions. Most importantly, parents take into account their children's food preferences and negotiate about their eating.

The main caregiver who is responsible for preparing the children's food in my study was the mother (11 out of 16 households); others included fathers, grandparents and housemaids. Although my study was conducted in a metropolitan area where both parents commonly worked, only eight mothers in the 16 families were in full-time employment.

4.3.1 Eating places and types of food

Meals that children usually ate with their caregivers include breakfast and dinner during the week and all three meals at weekends and during vacations. Given caregivers' busy schedules, they would chose the most convenience way to meals preparation, namely cooking easily prepared food at home, buying ready-to-eat food to eat at home, or eating in a restaurant. On weekdays it was common for families to eat food, cooked at home or bought outside, at home, while weekends were family time when families, especially those in the middle and higher socio-economic groups, spent time in shopping malls or ate in restaurants as a family ritual.

Another reason for some families, especially the well-off, to spend time in a mall and have their meal there was that they sent their children to additional classes, for example in mathematics, English, arts and music, at private tutorial institutes that are

often located in shopping malls. For example, at weekends Neutron's family ate lunch and dinner at a Japanese or Italian restaurant in a shopping mall.³² The foods that he and his older sister enjoyed most were Japanese noodle soup, fried fish or pork with Japanese rice, and pasta. The mother was too tired to cook for the family at weekends: '*I rarely cook at weekends; it's too tiring and we have to be at the mall to wait for Jane (Neutron's older sister) to finish her class anyway*' (Mother of Neutron, a normal weight boy from Private Land Kindergarten, June 2014).

In my study the children's breakfasts included both home-cooked food and food bought from food stalls depending on the children's preferences and the time available to the caregivers. My observation and interview data found that the typical breakfast included sausages, bread from the 7-Eleven convenience store, cereal with milk, fried eggs, grilled chicken or pork with sticky rice, or rice porridge (see examples in Figure 4. 3).³³ It also depended on where the children would be eating the food; for instance Ice, at New Market Kindergarten, usually ate her on the school bus, and Neutron, attending Private Land Kindergarten, usually ate his breakfast in the family car on the way to kindergarten: both usually ate sausages and bread for convenience. Those who ate at home or in the kindergarten canteen might have the option of rice or rice porridge. Bread and sausages and rice porridge are considered 'easy food' for two reasons; they are easy to acquire, prepare and serve, and it is easy to get the child to eat them.

³² Neutron was a four-year-old boy attending Private Land Kindergarten.

³³ The cereals market has grown over the past five years from annual sales of 1,500 million THB in 2012 to 2,000 million THB in 2015. The two leading companies are Nestlé and Kellogg's, with 43 % and 33% market share respectively. Their target group cereals are 63% children and 37% families (Euromonitor, 2014).

		
Grilled pork and sticky rice; 445 Kcal per portion	Fried eggs with rice; 440 Kcal per portion	Sausages from convenience store; 160 Kcal per 4 pieces
		
Rice porridge with pork/chicken and eggs (parents can easily ask sellers to remove vegetables for children); 200 Kcal per portion	Rice with steamed chicken (usually served without vegetables for children); 585 Kcal per portion	

Figure 4. 3 Examples of meals that children from this study eat when they are with their parents³⁴

4.3.2 Eating practices

At home the actors involved in meal provision for children were less complicated. There was a clear difference between nuclear and extended families: in the nuclear families only the parents or housemaids were involved. Parents have different power to teachers' to control their children's eating practices, resulting in more flexible rules around meals. In addition to preparing the food the majority of the mothers in my sample were also the ones who implemented and enforced the household rules that the children had to comply with, including rules about eating. Tulananda and

³⁴ Source of image: <http://www.aroi.com/content/130517111254>

Roopnarine (2001) also found fathers to be less involved in the care of pre-school-age children than mothers in Thailand.

Many families were flexible about how they served food to their children, who did not necessarily have to sit at the table but were allowed to eat in front of a TV, play games or run around while eating. These practices were found in 13 of the 16 households. In addition, separating children's mealtimes from those of adults was common in the same 13 out of 16 families. Eleven households normally served the children an adult-sized portion, and the children in eight families refused to have any vegetables in their meals at home following negotiations between parents and children.

The greater flexibility at home sometimes creates space for children to avoid eating the kindergarten meals, as illustrated in the case of Tam, an overweight boy from Temple Side Kindergarten, and Nid, a normal weight boy from Temple Side Kindergarten, cousins attending Temple Side Kindergarten:

I have always seen [Tam and Nid] eating [adult-sized servings of] grilled pork and sticky rice or rice with steamed chicken in the morning at school; the grandmother explained that these are their favourite dishes. She had to fill her grandsons up with these foods because Tam could hardly eat the school food (he does not like to try new dishes, nor to eat vegetables). (Observation, May 2014)

In families where adults skip dinner or other meals or have a late dinner due to following a weight control program or working late, food is prepared only for the children. I found this in 13 families and across all three socio-economic levels of my sample. This means that the children had the opportunity to eat food that had been

specially prepared for them; however, it led to the separation of caregivers and children at mealtimes, meaning that the caregivers lost the opportunity to model healthy eating practices. In Tuinui's household (an overweight girl attending New Market Kindergarten), dinners were prepared only for the two children in the family, and therefore according to the children's requests they were usually bought from a market or convenience store nearby. In such cases the power to choose their food can be shifted to the children and the availability of food at the outlets, which is controlled by sellers who do not necessarily have the goal of providing healthy food for young children.

Ten families ate out at the weekend on a regular basis, including fast foods such as pizza and fried chicken as a treat. Kentucky Fried Chicken was the most popular eat-out option for five of the ten families, who usually ate fried chicken once or twice a week. The convenient location, food that the children preferred and the cost were mentioned by few parents in my sample as factors that the parents considered when they decided where the family would eat out.

4.3.3 Living and working conditions contributing to family eating practices

Lifestyle and working conditions of parents and family members sharing the household affect children's meal organization and often mean that adults and children eat separately. The disadvantage is that caregivers lose their opportunities to be role models for healthy eating practices, for example, by eating vegetables and a wider range of foods. Parents can be a positive and negative role model of eating habits (Savage et al., 2007; Scaglioni et al., 2011).

I found four mothers who are full-time employees and also take the role of main caregiver including children's food preparation tasks. Three mothers work with husbands in family business and their office locates in their residential areas. The latter group can manage their time and can save some commuting time; thus, can spend more time on child-rearing activities including food preparation. On the other hand, those mothers who are full-time employees faced more complicated conditions that may hinder them from actions such as monitoring their children's eating practices. This also depends on roles distribution and child-rearing principles agreed within the family.

Mothers of every socio-economic status, especially those working full-time, expressed their fear of not being able to fulfil the expected child-rearing role at home. A mother expressed concern that she could not control her son's home environment as she wanted to; for example she did not want him to eat sweets or eat in front of the TV, but she was a full-time worker and could not be with her children all the time and control them and most of the time her son was allowed to do these things by other family members. Neutron's mother explained that '*the children don't normally eat at table; they sit with their meal in front of the television, if not watching cartoons, playing with their iPads and taking a lot of time to finish their plateful*'. The mother added that this is the result of the influence of other family members.

I found mothers are the main person who prepare meals, while fathers provide other supports such as picking children up from kindergarten. This is according to a previous study by Tulananda and Roopnarine (2001) that revealed less involvement of fathers in child care for pre-school age children compared to mothers in Thailand. The overall rate of women participation in labour market in Thailand has increased, especially in

Bangkok area (National Statistical Office, 2010). However, this only responds to one aspect of gender equality under the Thai society. Women still experienced expectations to be the main caregivers, especially for pre-school children. Full-time employed mothers from my study expressed their worries of not being able to fully take care of their children as shown in the case of Neutron's mother. This is because mothers still feel identity of mother and social expectation that they have to meet—the one who cooks for the family and taking care of the child.

Parents take into account multiple factors in preparing food for children which makes their job even harder than the kindergartens. These include parents' identities as good parents and their children's own preferences. Mothers feel under particular pressure in relation to social expectations around their role. As describe earlier, working conditions rarely allow adults and children to eat together and this both deprives children of good role models and means that the choice of food is determined by children's preferences and the limited choice of foods in the local area. Eating practices or actions identified from this study include serving and eating big portion, eating a lot or eating little main meal, eating no vegetables (which is partly resulted from the concept of 'children's food' that was drawn by adults), eating healthy or unhealthy food, and eating in preferred environment such as in front of TV or iPad. My investigation focuses on actions of pre-school children who are largely depends on their caregivers; however, children also exercise their power in the negotiation process with the caregivers, as I discuss in the next section.

The next section discusses caregivers' difficulties with managing children's meal consumption. Both adults and children exercise their power and employ strategies to

negotiate for their preferred options; the parents wanted their children to eat up their meals while the children negotiated for food they liked or to eat in their preferred environment.

4.4 Exercising power in negotiations about eating

The previous sections have discussed the adults' determination to make children eat their meals and the values and social conditions that are involved in the process of meal consumption both at kindergarten and at home. As mentioned, not only the values and social conditions of the caregivers in this process but also the preschoolers' responses to these contribute to eating practices. According to Early Learning and Development Standards in East Asia and the Pacific, supported by the UNICEF, children aged 3-5 develop skills and learn to develop their social skills to interact with parents and peers (Miyahara & Meyers, 2008). They have skills to negotiate for their preferred choices, which may not always be in line with the healthy diet recommended by the health professionals. As parents' duty to provide care to their children includes feeding them, they adopt strategies to encourage them to eat and negotiations between adults and children are carried out in the process of meal consumption. This next section is divided into two sub-sections: 4.4.1 presents the strategies that adults employed to make children eat their meals and 4.4.2 discusses the children's characteristics and agency. These interactions between adults and children are an ongoing process and can help to explain certain eating practices.

4.4.1 Adults' strategies for making children eat

The most important thing for the adults was whether or not the children would or could eat their meals; besides this, providing them with food was a way of showing kindness to children and reflected their good parenting.

A number of strategies were therefore implemented to negotiate with children and encourage them to eat. Common strategies included implementing regulations at kindergartens, providing food that tasted good, letting the children choose their favourite dishes and control their own eating environment, e.g. watching TV or their iPad while eating, which resulted in long eating time and nonstop eating, or offering a reward such as confectionery after they have eaten. These resulted in children choosing to eat energy-dense food, avoiding eating vegetables, eating a lot or eating only a small amount. These consensual practices were the results of negotiation and decision-making processes between the adults and children.

Providing food with the preferred taste was another strategy used to encourage children to eat their meal. In the three kindergartens the catering managers reported the children's preference for a sweet taste. Most of the children's favourite meals at school had a sweet taste—as I witnessed since during my observation period I ate the same food as the children and teachers—e.g. rice with steamed or fried chicken topped with sweet soya sauce, or *palo*: eggs and pork or chicken stew seasoned with sweet soya sauce. According to my interviews with the chefs and catering staff the children loved these dishes because they are sweet, and so they ate a lot. Other popular lunches included rice with fried Chinese sausages and noodle soup.

Almost all of the parents asked their children what they wanted to eat prior to preparing food. They explained to me that this was to avoid arguments and their children refusing to eat; instead the children would learn to be responsible for their choices. This is in line with the modern child-rearing concept presented in Chapter 3.

The mother of Pearl, an overweight three-year-old girl attending Private Land Kindergarten, usually bought more than two different meals for Pearl to choose from. She told me '*I don't know if what I do is right or not, but I read somewhere that I should let [Pearl] choose [her food] and take responsibility for her choice*'.

(Interview of Pearl's mother, July 2014)

I usually ask the kids what they would like to eat before I start cooking. This is a condition... the kids have to be responsible for the choices they made.

(Mother of Sand, a normal weight boy from New Market Kindergarten, November 2013)

Exceptional strategies that can encourage children to eat a healthy main meal were found in two families. Sand's mother had taught her son and daughter to make easy-to-cook dishes such as fried rice and stir-fried courgette with eggs, and they enjoyed eating the food that they had prepared, including vegetable dishes. Other families and adults employed persuasive messages to make children eat. Pearl's mother kept introducing different vegetables to her daughter, explaining that they would make her beautiful. However, such strategies worked well for only some children.

The power in negotiations about pre-schoolers' food consumption was not entirely on the adults' side. The children themselves had their own power. The next section illustrates how they exercised their agency regarding meal consumption.

4.4.2 Children's agency and negotiation strategies

A lack of attention to children's voices in research study has been raised by Qvortrup et al. (2009), explaining that children's views were usually put away because adults' perception that children does not have judgement capacity and their voices are unreliable. A. Clark and Statham (2005) identified one of barriers of exclusion of children's voices in research study which is a lack of knowledge on how to listen to children with reliable tools; therefore a proposal of mosaic methods utilisation (data collection technics consisting of various methods such as observation, group interview, camera and book making, and tours) to capture children's voices was introduced. An in-depth study about children's agency pointed that they can formulate collective actions to shape their lived experience, and children's voices, especially when they speak for their own interest and experiences. Markström and Halldén (2009) performed an ethnographic study of children's everyday life in a Swedish pre-school and found that pre-school children developed both individual and collective strategies to explore the boundaries of routine at pre-schools in Sweden. This illustrates their agency at pre-school, a setting where the social rules are stricter than at home. In health research area, Montreuil and Carnevale (2016) examined the concept of children's agency in health-related literature published between 1951 and 2014 and reported that in early years, children's agency referred to abilities that children can develop. Such a concept has been evolved to the point where children are recognised as active agents who can reflect and build their social structure. This

study reaffirms children's agency concepts in other disciplinary such as education, sociology and anthropology. I also employ this widely used concept of children's agency in social study to explore and understand how pre-schoolers in my study reflect and construct their social structure in regard to food consumption. With this concept proposed by social scholars, children in my study are active agents who can negotiate for their food consumption, not a target of adults' feeding policy and practices.

At home, I observed that different children's characteristics affected the feeding protocol and the negotiation strategies that their parents used. The children in my study had different characters and preferences, including regarding eating practices. These ranged from those who could eat anything and finished whatever adults offered them (identified by parents and teachers as easy children) to those who refused to eat anything, including snack foods and sweets, and from those who were happy to try new foods to those who would only eat the same few dishes for months. Pre-school-aged children are exposed to a wider environment than home, where they spent their early childhood in, and adopt some of their siblings and peers' negotiating strategies (Miyahara & Meyers, 2008). Children of this age learn to use tactics to negotiate for what they prefer. They also learn that they have power that they can exercise, especially at home.

The children's and their caregivers' power to negotiate meal consumption varied across families. Meal practices depended on both the children's characteristics and the parenting style. The father of Liz, a four-year-old girl of normal weight attending Private Land Kindergarten, told me that he had decided not to argue about food with his daughter because he had learned that he '*would never win, and it would create*

bad memories [he used the word plae: a direct translation as ‘wounds’ but is comparable to the meaning of ‘distress’ in English] between them, as despite all of their past arguments about food, in the end the children would only eat what they wanted to eat. Liz and her younger sister did not have an easy temperament and their parents were relaxed with them. This illustrates how food practices in a family with children with difficult temperaments develop, and how the parents develop a parenting style that suits these characteristics.

Some parents admitted that it was difficult to control their children’s eating behaviour or stop them from only eating the meals they liked (given that parents also believed that meals are good for children). When a child said ‘*I’m hungry*’ it was especially difficult for caregivers not to feed them. Tuinui is the best illustration of this: she ate whatever her mother prepared for her, including vegetables, and sometimes also asked to try what she saw the adults in the family eating. Her paediatrician informed her mother that her weight was increasing and should be controlled, and advised her to control Tuinui’s eating by feeding her at certain times and not letting her eat all the time. However, her mother told me firmly:

Tuinui already eats at specific times ... she just has an adult serving. She can eat everything [the mother said this repeatedly] ... you know ... she eats like adults—whatever adults eat, she eats ... I tried to stop her eating but her argument was ‘I’m not full yet mommy’, so I had to let her eat. (Mother of Tuinui, an overweight girl from New Market Kindergarten, September 2014)

At the kindergartens, although it was clear that teachers and staff were likely to have power over the children, the children had their own ways of breaking the rules and

controlling the staff. To obtain the food they liked the children would clear their plates quickly and ask for more. They knew who was most likely to give them more food, for example new teachers or peers' parents. They used their allowance to buy from food stalls and asked friends or siblings for food. To avoid eating food they disliked they used strategies such as buying time (see below), dropping it on the floor, hiding it, and giving it to their peers.

Song and Pan, a boy and girl three years old, of normal weight status and attending Temple Side Kindergarten, spent time stirring and mixing their food and snacks on their divided plates until lunchtime ended, eating nothing. Finding replacements for food that children did not like was another strategy. The kindergartens' snack-foods stalls offered one option for children who decided to skip kindergarten lunches that they did not like. They also brought snack foods prepared at home, although the nursery staff unsuccessfully tried to control this by not allowing them to eat in the classroom, as well as using the afternoon milk as their alternative energy intake.

One day rice with pork soup with congealed pork blood and vegetables was served for lunch at Temple Side Kindergarten. This was one of the meals the children disliked, with only two or three out of twenty able to clear their plates. In the afternoon a lot of children asked for school milk. Usually only four or five children wanted milk, but on days like this up to ten children asked for it.
(Observation, January 2014)

The pre-schoolers in my study understood 'meal' as *kao*, which means rice in Thai. For example at kindergarten they knew that they would 'eat rice' (have a meal) at a certain time. It is traditional for children to eat rice in the evening when they arrive

home after kindergarten finishes at 4.00 pm, or at Private Land Kindergarten at 5.00 pm before they went home at 6.00 pm. Perceiving a meal as a task involving social rules that they had to comply with before they could move to on to preferred activities such as eating sweets or snack foods, some children decided to quickly complete the 'meal consumption task' so that they could move on to food they liked.

Boss and Flute, both obese 5-year-old boys from New Market Kindergarten, finished their lunch very quickly within one or two minutes of the dishes being distributed. I asked whether they would like more, but they refused and quickly put their empty plates away and ran over to a snack stall. (Observation, December 2013)

Giving the food to peers was also noted. At lunchtimes a few children would give the food on their plates to their friends. One day stir-fried pork with basil and vegetables and clear vermicelli pork soup was served at Temple Side Kindergarten, and many children said that they did not like this meal. Mink, a three-year-old boy of normal weight, only ate some rice with a small amount of soup and gave the rest of the food to Bright, an overweight boy. The kindergarten staff thought he had eaten all his food. (Observation, March 2014)

School lunch has been studied by many scholars and is suggested as a space where different powers are exercised: these include children's agency, teachers' duty, school's directors' policy, and the government's policy (Daniel & Gustafsson, 2010). My findings confirmed the salience of these actors. At the national level, the policy and guidelines have been available to support the provision of standard meals for pre-

schoolers; however, when it comes to the implementation at kindergarten level including the daily implementation where teachers and children interact in the canteen, negotiation of power of different actors including the pre-schoolers also play important part in influencing the actual meal (nutrition and energy) that children consume. Children's agency and their power in negotiating their eating preferences played important role, given they are target of meal consumption initiations implemented by all actors.

Environment and practices of food provision at kindergartens are constructed as a routine with rules and customs as to how children should behave at the dining table that are facilitated by teachers—the regulation implementers. On the other hand, food practices occurring at homes where rules of eating are more relaxed and with shared values and tasks between family members, leave spaces for children to exercise their power to negotiate for their preferred meal consumption. Adults and children in both settings have been influenced by factors from external structure and use internal structures to guide their actions. I found that the negotiation process, combined with the lack of knowledge and awareness of caregivers about the proper portion size and the weight status of the children, and the agency of children (negotiation in the eating process), resulted in unhealthy practices such as over-consumption, eating energy dense food and meals without vegetables.

This section has brought up an important issue in pre-schoolers' meal consumption: the children's agency in their negotiations about their food. While the adults employed strategies to make them eat their meals, the children also learned to exercise their

power and employed strategies to avoid eating the food they disliked and instead obtain their preferred choice.

4.5 Values and practices regarding meal provision for pre-schoolers

In the previous sections, eating practices at kindergartens illustrated the outstanding values that teachers teach children at kindergartens through eating practices under kindergartens' rules. It also showed how caregivers organise eating environment for children, namely encouraging children to eat a lot of main meals and healthy meals, and ensuring children eat main meal. Eating practices found in my study, namely a provision of big meal portion, a provision of energy dense food to children, or parents not eating with children, are factors that significantly contribute to the likelihood of developing childhood obesity. The finding about relationship between family meal and childhood obesity was also in line with a national study in South Korea conducted by H. Lee et al. (2015). These identified practices in my study had underlying values and supportive factors. The setting, the types of food, and the way children eat are partly shaped by values that parents have, family rituals, and their social and economic conditions (Leann Lipps Birch et al., 1980; Patrick & Nicklas, 2005). This section describes parents' values that influence those practices as well as the transmission of those values from adults through different channels such as routine practices and teachings to children. I adopted the definition of 'values' from the belief system theory proposed by Grube et al. (1994):

Values are single beliefs and transcend objects and situations...and are cognitive representations of individual needs and desires and of societal demands on the other. (Grube et al., 1994: P.155)

4.5.1 Eating meals makes children grow, so good parents should make them eat

'I want to be strong and grow tall, I have to eat everything (that are offered in school meal) and drink plain cow milk (representing a healthy food choice)' Pine, a four-year-old girl, normal weight, told me while she was having lunch at New Market Kindergarten. She is one of those who can eat almost everything that the kindergarten kitchen offers. She normally asks for more food, up to 2-3 portions. She told me that her parents and teachers told her so. This reflected values towards meals that caregivers in my sample have. Some families such as mother of Tutor, an overweight boy from Private Land Kindergarten, would teach their children in-detail about nutrition, for example, *'fish would make you smart'*.

When parents could make their children consume a meal they proudly presented this as an important achievement when I interviewed them. Some were prouder when they can had got their children to eat more, or to eat vegetables (which they saw as a superior achievement compared to other children). This reflected the children's character and parents' values. Sand's father told me proudly: '*Sand (five-year-old boy of normal weight attending New Market Kindergarten) eats more than other children his age*'. Although these parents criticised the small lunch portions served at New Market Kindergarten, they understood that the reason was that many of the other children could not eat much. One father proudly recounted that the day before, his son had eaten three servings when they went out for a dinner at a restaurant: '*He can eat a lot, especially when the food is tasty*' (Father of Sand, a normal weight boy from New Market Kindergarten, November 2013).

In the case of Bright (an overweight four-year-old boy attending Temple Side Kindergarten), his grandmother told me proudly on my second visit that this morning he had eaten fried egg and bread, and then an hour later had asked for more food (before lunch) and had eaten a portion of fried sausage and rice and another of fried egg and rice. (Observation, April 2014)

Parents whose children refused to eat or only ate a small amount expressed their concern about them. They listed all the strategies they had tried to get their children to eat without success, for instance offering them rewards or making their favourite dishes, and many spoke in a defensive tone of voice. The parents of children who were 'difficult eaters' allowed them to eat whatever they wanted including sweets, pastries, fries and extruded snack foods, because they were afraid that they would otherwise receive no nutrition. Even a small amount of energy or nutrition was acceptable to these parents. This also resulted in the substitution of meals with snack foods in many cases (see Chapter 6):

His mother tried to encourage Tintin (underweight three-year-old boy attending Private Land Kindergarten) to eat the snack foods and biscuits that she put on the dining table. She stored other snack foods in the house, making them easily accessible to him. Tintin liked the small biscuits that are available in many shapes very much, although he only ate very few of them. The boy showed his preference for a fish-shaped biscuit, and his mother would pick these out of a variety of biscuits to offer to him. She said '*I don't limit the food or snacks that Tintin eats ... he's so picky and eats very little ... I just hope he'll eat something ... you can see he's underweight ... his doctor told me so too*'. Tintin ate a little

of his mother's dinner—two spoonfuls—and went to play with his toys.
(Observation, August 2014)

Coordination between kindergarten and home is established to make sure the children eat their meals. The two private kindergartens put up a daily menu on the notice board for the parents to see.

When the great-grandmother of Tam, an overweight three-year-old boy attending New Market Kindergarten, picked her boy up a member of staff proudly told her: '*Today the children had rice with sausage. They really enjoyed it and ate a lot. Tomorrow I'll prepare sticky rice and fried chicken for them.*' Tam's great-grandmother smiled happily as she told me this while opening a bottle of green tea drink for her grandson. (Observation, April 2014)

Teachers pleased parents by showing their care for the children in the way they provided meals for them. Apart from the daily report at the private kindergarten log books, when parents picked their children up the nursery staff reported what they had eaten to their parents.

I initially aimed to investigate whether the adults fed children of different genders differently. Only two mothers expressed such values. The mother of a boy and a girl said that she did not worry that her daughter did not eat as much as her son because girls and women are supposed to be thin (she used the word *pom* in Thai). On the course of my observation, I learned that in April and Kao's family, their mother (the one expressing the value) stored plain milk in an easy access corner for her two children, and their father also equally gave carbonated drinks to both children. The

only different action was when the children eat main meals, the mother would not encourage April, the younger daughter to eat as much as she did for Kao, her son. When I explored this with the other families in my sample, especially those with pre-school-aged girls, I did not find other such cases. The mother of Tuinui, an overweight four-year-old girl attending New Market Kindergarten, told me that she tried to stop her daughter from eating because the doctor had told her that she was becoming overweight and this should be controlled; however, the mother told me that she could not control her daughter's eating habits. Another case was April, a four-year-old girl of normal weight attending New Market Kindergarten, whose mother told me that she was not worried when she only ate a small amount of food because '*girls are supposed to be in shape*'. The two mothers used the same rationale when speaking about their girls' eating practice. When I tested these values with other families with daughters I could not find any confirmation of this value.

The examples above suggest that the more the children were able to eat of a meal the happier the parents and teachers were. In many cases this value was more powerful than the types and amount of food suggested by health professionals, which they found difficult to implement. In another words, making children eat was already hard; making them eat the right-sized portions and combinations of food was even harder. Even though the parents told me that their children ate 'easy food', giving the impression that it was easy for them to prepare such foods for them (see section 2.3), of the eighteen children in my study none would eat without conditions or negotiation with their caregivers at home, or eat whatever was put in front of them. This affected the provision of their food in three ways; first, the parents had to work to achieve this value to retain their identity as a good parent; second, the parents interacted with their

children and developed strategies to encourage children to eat (see section 4.4.1); and third, all the decision-making of parents and the negotiations between adults and children were carried out in specific socio-economic circumstances.

4.5.2 The drive to feed and the lack of knowledge about portion size

The motivation to feed their children was driven by the adults' values, presented in the previous sub-section. I observed a lack of knowledge and awareness among the caregivers about the amount that children should eat; it was the norm to serve an adult-sized meal to their children, especially when they were eating at home or with their parents. This happened with both normal-weight and overweight children and in families of every socio-economic status in the study. Parents perceived their children being able to eat the whole of a big a meal as a success and something to be proud of. One parent of an overweight child had been warned by her paediatrician about her child's weight status and had been offered suggestions about making changes to his eating behaviour. Her mother said that she had difficulty controlling how much her child ate and could not stop her from eating when she begged for food, saying that she was still hungry. This is partly because the act of taking food away from or stopping feeding a child contradicts the value of being a 'good parent', which includes feeding him or her properly.

Every morning Tutor, an overweight five-year-old boy attending Private Land Kindergarten whose breakfast was usually carefully prepared by his mother, ate an adult serving of salmon with rice. His mother told me that she had learned when she was pregnant and on a training course for new mothers organised by a Ramathibordi

hospital, that fish is good for babies' brains.³⁵ Since then she had been feeding Tutor fish every morning. Tutor was one of the children asked for more food at lunch, at the afternoon snack time, and at dinner in the kindergarten canteen.

Tutor eats quite a lot. Every morning his mother prepares a rice box full of rice and salmon [an adult portion—from daily observation] and he always finishes the entire box. (Tutor's class teacher from Private Land Kindergarten, July 2014)

I know he eats a lot and is gaining weight. But I think breakfast is very important and I only cook good food for him ... you know fish is good for his brain ... I think it's okay to have a big breakfast ... he can eat less at other meals, but I don't know how what goes on at kindergarten ... also I don't know the right amount to feed kids ... I observe from what I prepare for him every day, and it looks as if he can finish the amount I give him so I think it's the right portion size ... Is the portion the same as what the kindergarten prepares for kids?

(Interview of Tutor's mother, August 2014)

Tutor's mother was like many of the parents in this study who did their best for their children, including preparing the best-quality and most nutritious food for them. When parents acknowledge food types that would benefit their children; they tended to feed them with as much as they could take. Parents and teachers tried to encourage the children to eat a big meal and finish their plateful, or eat as much as they could. Some exceptional cases were found in the kindergartens: one child was diagnosed with

³⁵ One of the most famous medical schools and the biggest public hospital in Thailand

obesity and some had problems such as vomiting when they ate too much.³⁶ The parents and teachers tried to control the amount the latter ate.

Parents, teachers and practitioners in this study exhibited limited concern and took little action regarding the risk of obesity in their children and the management of the condition once detected. Only the mother of Aim, an obese five-year-old boy attending New Market Kindergarten, showed concern about her son's weight. The boy himself also expressed a wish to be physically stronger like the superhero cartoon characters he likes. Young children being overweight or fat was not an urgent concern of parents, partly because many believed that children at pre-school are in the development stage so they have a long way to grow up. A common expression they used was '*the child will grow [and then the excess weight will disappear]*'. A routine growth-monitoring system was in place at all the kindergartens, which weighed all the children and measured their height every two months. However, when I asked how they managed the children in their kindergartens who were underweight, overweight or obese, staff said they did not know. They explained that their duty was mainly to send the results to the government agency that required them to do the measuring. Many staff members had struggled to calculate and interpret the results. This was also found in the case of the pre-schoolers' milk consumption (see Chapter 5), with parents having such positive perceptions and beliefs about the benefits of milk that they were likely to overfeed their children with it. The strongest health-promotion message that the parents had learned from their paediatricians was the prevention of dental problems. One child who was diagnosed with obesity and the paediatrician advised his mother to give him low-fat milk. The mother gave him chocolate-flavoured low-fat milk with full

³⁶ These cases are not included in my household-level investigation.

sugar content, thinking she was following the physician's advice. This case shows misunderstanding of nutrition and a possible lack of communication between the parents and the practitioner.

Meals were one of the best things that the parents believed they could offer to their children, in terms of both quantity and quality. Tutor, described earlier, whose mother chose to cook him a fish dish every day and served him an adult-sized portion considering this a good breakfast, is a good example of this value. She was careful bought only organic ingredients for her son's meals from a specific supermarket. However, when it came to the quantity of food she gave him, his mother, who was of the higher socio-economic group, admitted that she served him according to her experience. This suggests lack of knowledge about the amount that pre-school-aged children should consume. Although Tutor was gaining weight and was overweight according to the Thai national standard for growth, there was no intervention from adults to control his consumption, especially at breakfast, which is believed to be a good meal supporting children's growth and development.³⁷ Children's eating practices are shaped by parents' practices, as in the case of Tutor and his daily adult-sized breakfasts and school meals.

Feeding and encouraging children to eat are an important element of child-rearing and of being good parents and this results in certain feeding practices, such as feeding as much as possible (offering foods that children like is one way of achieving this), and providing good food. Feeding is an integral part of childcare and is closely linked to

³⁷ In all three kindergartens the children's height and weight were measured bimonthly. Tutor's weight had increased over time and he had been confirmed to be overweight at the latest measuring event.

mothering culture (Keenan & Stapleton, 2009). This link begins when the pregnant woman is expected to eat good food to provide nutrition for the foetus, followed by exclusive breastfeeding and then providing children with meals that support their physical and cognitive development (Miyahara & Meyers, 2008). I found the concept of feeding good meals to children as a duty of caregivers (including both parents and teachers) in my study. My analysis suggests that adults' core values concerning preschoolers' meal consumption saw eating meals as compulsory and making the children grow. Public kindergartens respond to this value by providing a free meal in accordance with the government's school lunch policy; private kindergartens' food policy clearly responds to the parents' demand that they provide good food for their children and make them eat it.

4.5.3 Concepts of 'children's food'

This section presents the meanings that the research participants, including parents, teachers and children, attached to children's food. These meanings were influenced by factors and players in the EST's macro ecological system. The way in which my research participants characterised children's food explains why and how they served or offered them certain foods. Adults' decisions about their preparation of food for children were based on how they themselves perceived children's food as well on factors such as resources and time.

The respondents saw food for children as different from that for adults. Care should be taken in the preparation process, as confirmed by the guidelines for school lunch standard and management, data from adult respondents in my study and my observation at the sites. For example I observed that all vegetables and meat prepared

by kindergarten caterers were usually cut into small pieces and cooked until soft and easy to chew, and were usually added to soup-based dishes. During discussions about food that the children ate at kindergarten and at home I heard the word 'children's food', defined as food that caregivers prepared for children and as food that children liked. The definition depended on the actor and how he or she had developed the meaning from Thai food culture, and on the actors' power in the process of providing children with food, e.g. that of the kindergarten directors, the parents and the children. Two distinct concepts in relation to children's food emerged from my study: (i) food that children should eat, and (ii) food that children prefer and can thus eat up.

Vegetables, milk and meat and hygienic and uncontaminated food fell within the parents and teachers' broad definition of 'food that children should eat'. Although the health promotion message distributed based on the dietary intake recommendations for Thais focuses on consumption of the five food groups, parents in my sample had little awareness of it (Sirichakkrawal & Sutatworawut, 2012). Parents and teachers received health messages from a variety of channels including websites, paediatricians and their own experience. In parents' views as well as reflections from the expert consultation panel that I organised to present my preliminary results of this research study, the kindergartens were expected to be the main actors introducing children to the food that they should eat and feeding it to them, even though most kindergartens provide only one meal for them a day. The management of kindergarten kitchens depends on the catering staff, who are under instruction from the kindergarten owner or local authority. The catering staff at the kindergartens in this study did not participate in the training courses offered by the DoH on a voluntary basis, and had

competing priorities including feeding the children nutritious food that they would eat, avoiding waste by cooking food that children like, and controlling the cost of the food.

The foods that the children in this sample preferred and would eat up included food with no vegetables and fried food, according to my observation and discussion with the children themselves. The parents and teachers at the three kindergartens described the characteristics of food that they believed children would eat as bland food, sweet food, food that is not hot and spicy, and food that is soft and easy to chew. These were the types of food that were prepared for the children both at home and at the kindergartens.

The two concepts might or might not be able to meet in one dish if the children's preference followed the healthy eating guidelines suggesting what they should eat, which is basically the five food groups. However, the exclusion of vegetables and the use of oil and sugar to add good taste to the dishes suggest ways in which are likely to be in conflict with healthy dishes. Both concepts of children's food—food that children should eat and food that they prefer and can thus eat up—are attached to how adults express their love and care for their children. This depends on values that adults have and benefits of the child's feeding they anticipate. For example some parents expressed their love and care by encouraging their children to eat vegetables (although the child may refuse) because they believe that they are nutritious. Other parents expressed their love by offering food that their children preferred and could finish and feel full: '*I make sure he's full and not hungry at kindergarten*' is an example from Tam and Nid's grandmother that I also heard from other parents. Mainly parents and teachers valued the act of eating and the amount of food consumed at a meal.

The concerns of parents whose children ate up their meals focused on their consumption of vegetables, good-quality and nutritious food such as fish, containing Omega-3, and meat, with its high iron content, and the adulteration of their children's food with monosodium glutamate (MSG).³⁸ Parents and teachers at Temple Side Kindergarten, where the teachers had to manage the lunch sessions for children during non-semester periods (the food are usually managed by catering staff during semesters), also had to strike a balance between creating meals that the children would eat a lot of and making nutritious dishes. Overall, the value of children consuming more food triumphed.

Caregivers who prepared food for the family also spoke of easy food—food that is quick and easy to cook and that children like to eat. Examples of easy food include fried eggs, chicken, pork or clear soup usually containing vegetables, pork or chicken and tofu. When describing the characteristics of children's food consumption the terms 'difficult eaters' and 'easy eaters' were most frequently used. Easy eaters, according to the adults in this study, are not picky about their food and eat whatever they prepare, or it can mean children who eat food that is easy to prepare. The case of Bright illustrates this: his grandparents told me that he was an 'easy eater', although they had to organise a separate meal for him because he would not eat the curry or chilli paste with vegetables that they themselves ate. When parents described their children to me as 'easy eaters' they usually added with joy and pride that they caused them few problems or difficulties over food.

³⁸ There is a myth about MSG in the Thai context. The substance is said to cause negative health-related effects including hair loss and blindness, but there is no scientific evidence to prove this. In many cases the immediate effect is significant thirstiness after high consumption of the substance. The MoPH launched a health promotion campaign advising restaurants and households not to add MSG to food. (Tanphaichitr et al, 2000).

On my visit to Bright's household his grandmother began to cook dinner for the family, collecting some herbs that she grew in flowerpots. Green curry with fish was the main dish for the grandparents. They explained that they usually cooked spicy food like this which Bright cannot eat, so they would go to a fresh market nearby and get something for him, usually grilled chicken, or made him fried eggs.

His grandmother explained '*He eats easy (to prepare) meals like rice porridge (usually bought from a food stall nearby), instant noodles, bread and fried eggs*'.

The grandfather added 'Bright is easy about eating ... sticky rice ... grilled pork ... that sort of thing'. (Grandmother of Bright, an overweight boy from Temple Side Kindergarten April 2014)

Tam and Nid, obese and normal weight boys, cousins attending Temple Side Kindergarten whose great-grandmother served them foods they preferred, is a good example of one of the characteristics of 'food that children prefer'. On my visits to his extended family I observed the adults eating meals that included a variety of vegetables. Their dining table, on which food was always available because the adults in this house did not all sit down to eat at table together due to their working hours, was full of Thai food containing fish, vegetable curry and shrimp paste with fresh and cooked vegetables to eat with steamed rice. In addition their main fridge was full of vegetables. In contrast the children were served food containing no vegetables such as sticky rice and barbecued pork or fried chicken bought from the local market. When I asked the great-grandmother what food she usually prepared for the boys she explained that the above were their favourite dishes which they always enjoyed, and that they usually ate an adult serving of them.

These concepts of food that children should and can eat contributed to an in-depth understanding of how adults make decisions about the selection and preparation of meals for young children. Believing in concepts such as ‘letting children choose food and be responsible for it’ and making a distinction between ‘children’s’ and ‘adults’ food’, for example, led to children’s consumption of food without vegetables and energy dense food, as suggested by many scholars (L. L. Birch, 1999; Johnson et al., 1991; Kern et al., 1993; Nicklaus et al., 2005). Meanwhile the children expressed their preference for certain dishes and applied strategies to get what they wanted. Children’s agency concerning meals is discussed in section 4.4.2.

4.5.4 Transfer of values and practices to children

I observed meal practices at the kindergartens and at home and the development and reproduction of values and practices concerning children’s meal consumption. When children consume food they take in not only nutrition and energy but also the values attached to eating. Apart from general perceptions about the value of food, as shown in the rhyme that all children have to sing before eating at kindergarten, the benefits of eating properly were also taught by teachers and parents. Sand and Pine, two children of normal weight, had memorised and put these teachings into practice; i.e. they focused on their meals.³⁹ They both ate large meals compared to their peers and usually proudly asked for a second helping, hinting that they were the winners among their peers.

Others who eat big meal did not mention the teaching messages, they were more in the category of ‘habituated to large portion’, like Tutor, Bright, Tam and Nid.

Pine, a normal weight 4-year-old girl attending New Market Kindergarten, is one of those who can eat almost everything the school kitchen offers. She normally asks for second and third helpings. She told me: '*I want to be strong and tall. I have to eat everything [that's offered for the school meal] and drink plain cow's milk!*' (Observation, October 2013).

At home, parents may model both positive and negative eating habits. Positive habits were modelled in Sand's family, who all ate together, although the mother sometimes ate later, and all ate the same food; the children were used to eating vegetables as part of their meal.

I think the reason my children eat vegetables at home is because their father has been on a weight management program so his meals are based on vegetables. The children see their father eat a lot of vegetables, and I cook a lot of vegetables too, so they can eat them. But you see ... they change when they go to school. (Mother of Sand, a normal weight boy from New Market Kindergarten, November 2013)

Positive modelling such as eating fruit and vegetables works well when the family eats together and share the same food. When the parents and children eat separately, as in the majority of the households in the study, while the parents may eat vegetables this is less likely to affect the children's behaviour, as in the case of Tam and Nid, whose great-grandmother cooked a lot of vegetable dishes for the adults but prepared different food for the boys to eat separately. The case of Sand also hinted that when children are exposed to environments outside the home, there will be other factors

such as influences from peer that affect children's eating practice, even though parents maintain their good role model of healthy eating.

The children absorbed not only positive habits: negative habits such as a preference for sweetened-carbonated drinks, sweetened green tea, sweets and sweet pastries were adopted by children. In five families where the parents enjoyed sweetened drinks and energy-dense foods the parents tended to keep such food at home and ate it in front of the children. When the children asked for some, their parents were unable to refuse them. This is one way in which children learn to consume and like such foods.

I employed structuration theory (see Chapter 2) to investigate this specific case of transfer of values and actions to children. The actions of the children illustrated the reproduction of the social structure: the embedded knowledge that adults (parents and teachers) have towards meal consumption in the Thai context. The transfer of values from adults to children (through learning from adults' actions or teachings and rituals) resulted in the development of actions of children. For example the case of Pine that was illustrated earlier in this section, can be considered as outcomes produced from the process. The girl echoed the value of eating a lot of main meal (and 'plain' milk) would make her grow and strong. This value has been repeated to her by teachers and her parents. She did not only say it out loud (using adults' language) but also acted accordingly as I observed her eating practices and heard from the teachers.

I outline many possible channels through which values and practices concerning meal consumption are transferred from adults to children. Teaching from kindergartens alone may not provide successful results as children also spend large part of their time

at homes with their parents. In addition, this study has shown that parents act as role models for both healthy and unhealthy eating. However, when they model healthy eating habits this is only likely be successful when they and their children eat together and eat the same food. With regards to the outcomes, I found that actions of adults and children have been shaped by both external and internal structures. When certain values have been reproduced over time in more than one setting, for example when the values such as 'food is valuable' or 'food makes children grow and strong' are used by parents and teachers, children absorbed those messages and applied it to their decision to consume meals as shown in the case of Pine. This can be seen when children drew on this language to describe their own motivations. The core value that adults in this study have towards main meal consumption for pre-schoolers is that eating main meal is compulsory and makes children grow. Kindergartens also respond to this value of main meal through the provision of free meal via government's school lunch policy with an aim to promote healthy growth among young children, especially for public kindergartens. For private kindergartens, their food policy clearly responds to parents' demand to provide good food to children and to make them eat as shown in the practices of main meal at kindergartens.

Giddens (1981) emphasised structures must be regarded as 'dual' meaning that they are 'both the medium and the outcome of the practices which constitute social systems' (Giddens, 1981, p. 161). Chan et al. (2010a) used the concept of dualism of structure to explain the phenomenon when mothers and their pre-school children meet daily in fast-food outlets to exchange information and views focusing on children's academic skills which has become normal practice. In this case they pointed out that institutional structures namely kindergartens would orientate themselves to respond

to this expectation. On the other hand, kindergarten (institution) is also channel that reproduces structures. The meal eating rituals at kindergartens are a structure where teachers respond to societal expectations that they will formally transfer the values and actions to the children. Kindergarten teachers are also a network of position-practice that not only link solid structures such as government's policy with individuals by turning it into daily routine (e.g. organizing school lunch according to the policy), but are also a part of mechanism that reproduce certain values and social practices that are internalised by caregivers and children.

As my study is cross-sectional, it cannot illustrate all possible outcomes of this action—whether structures would be reproduced or changed over a longer period of time. The outcome of the reproduction of structures over time is a condition which is difficult to draw conclusions on. Longer observation may be required in order to see how social structures or values have been changed over time. However, an inclusion of research participants from different generations, such as grandparents, parents and siblings of different ages can help provide certain data about changes of social structures over a specific timeframe. For example, the most apparent in the internal structure I discovered from my study is the identity of the mother—the expectation that mothers take the leading role in child-rearing, especially role of cooking. I found that if a child is taken care by grandparents, grandmother is still the main carer. This reflects that such values have been embedded in the society a long while and are still being reproduced.

4.5.5 A link between external and internal structures: when caregivers turns value into actions

Structuration theory offers an approach to investigate the relationships between agents, actions, and structures at different times. It help unfold values behind the observed actions of adults and children in my study. In addition the ST that was further developed by Stone (2005) suggested an area of consideration—networks of position-practice relations. This allows me to further explore other important agents that may influence food practices, which is a focus in my study of factors influencing childhood obesity.

Food preparation at kindergartens reflected the limited extent to which external structures, namely the government's policy and guidelines can affect food preparation at kindergartens. However, factors at kindergarten level including the kindergartens' policies and the values, experiences and knowledge of the kindergarten managers showed great influences on food preparation. Their actions are also linked with actions of the children, whether they would choose to consume the offered meal or not.

Policy, influences from the business sector, and values that are embedded in the society are categorised by the EST as factors of macro-level system of the social environment that individuals live with. To understand *how* external factors are linked with individuals' practices as well as the level of influences that these factors could have over individuals' practices and how individuals internalise values from the society they have been living in, I also employed the ST. ST proposes that agents (or individuals) develop actions based on how they link external structures to their internal structures. One of important elements that explain this link proposed by ST is networks

of position-practice. The network of position-practice is a mediator between external and internal structures. In addition to the policies and interventions from government and business sectors, values are also transferred and internalised by caregivers and children.

An example of how networks connect external and internal structures is presented in a study by Chan et al. (2010a) of mothers of pre-school children who have lost such a supporting network between them and their parents in Mainland China when they moved to Hong Kong. In this case the network of position-practice is limited to a ‘commercial relationship’ with maids who provide childcare at home according to orders of the mothers and the kindergarten teacher with a strong focus on delivering academic curriculum. The case of Tutor’s mother who absorbed the value of providing healthy meal to her son from position-practice of health professional illustrated a link between external and internal structures where the mother turns their advice into action. On the other hand, the case of chef and catering managers at kindergartens who did not attend trainings and had not internalised important messages about meals preparation for pre-schoolers that government agencies organized, shows a missing link between the external and internal structures.

CHAPTER 5: MILK CONSUMPTION

The theme of milk consumption came up strongly in my data analysis. Parents, teachers, family members and even children themselves mentioned (or reported on) children's milk consumption when I asked them about food consumption in general, indicating that it is seen as an important part of a child's diet, and, by extension, an integral part of child-rearing. In parents' perceptions, their pre-schoolers drinking milk is as important as organizing their main meals. All three kindergartens in my sample included milk as part of their daily routine 1-3 times a day.

Milk is characterised as an important food for pre-schoolers by the Government of Thailand through its school milk programme, and drinking milk is routine for children at kindergartens, even though it is relatively new in Thailand. The national school milk programme provides free milk for Thai children aged 3-12 at government-owned and private schools participating in the programme. In 1992, the school milk programme was created by the National Milk Drinking Campaign Board (NMDCB)⁴⁰ as a way of both supporting the emerging milk industry and providing nutrition for schoolchildren (Kammungkhun, 2009). The policy is run by the Dairy Farming Promotion Organization of Thailand (DPO), a state-run dairy business chaired by the Ministry of Agriculture and Cooperatives (MoAC). The amount of milk consumed under the government's school milk programme increased from 2 litres per child per year in 1988 to 23 litres in 2002 (Suwanabol, 2005). The 2008–9 Health Examination Survey reported that 56 per cent of children aged 2–5 were drinking approximately 200 ml of milk every day

⁴⁰ The NMDCB was established in 1985 at the behest of the Ministry of Agriculture and Cooperatives (MoAC) and operated under the office of the Prime Minister. The board consists of representatives from relevant government agencies (mainly the MoAC) and milk business representatives.

(National Health Examination Survey Network, 2011). The school milk and lunch programmes are ongoing interventions, among other community-integrated programmes, under the country's Poverty Alleviation Plan, which has contributed to the reduction of undernutrition in children under 5 years old from 51 per cent in 1980 to 20 per cent in 1990 and below 10 per cent in 2006 (Chavasit et al., 2013).

While the government distributes plain milk to children through the school milk programme, a number of sweetened milks, fortified milks and yogurt drinks are also available on the market in Thailand for parents to choose for their children.

Why should milk be of concern in an investigation of childhood obesity? Milk, especially its overconsumption and sweetened milk, can lead to high energy intake, which can contribute to the development of childhood obesity (Danyliw et al., 2012; W. H. Dietz, 2006; Harris et al., 2004; Kaufman & Karpati, 2007; Malik et al., 2006; Tinanoff & Palmer, 2000) and to a preference for sweet tastes (Benton, 2004; Drewnowski et al., 2012; Alison K Ventura & Mennella, 2011). A recent review studying the effects of flavoured/sweetened milk on total milk and nutritional intake among children affirms that children who drink flavoured/sweetened milk gain more calcium than those who do not drink it, and suggests that the relationship between drinking flavoured/sweetened milk and children's weight gain is inconclusive, due to the limited number of studies (Fayet-Moore, 2016). Another important limitation of the study is that all studies included in the review to date have been conducted in developed settings such as the US, the UK and Australia; studies from Thailand and other Asian settings where flavoured/sweetened milk is very popular and forms a large proportion of the domestic milk market are not available. A key message of the study by Fayet-

Moore is concerned about the increasing consumption of flavoured/sweetened milk in all settings. On the Thai domestic market a diverse range of milk products other than plain cows' milk is available, including sweetened cows' and soya milk, fortified milk and drinking yogurt. These products contain substantial amounts of sugar, averaging 8 grams of sugar per carton (data taken from the nutrition label of a random sample of products). In 2011, the dairy product with the highest market value was sweetened drinking yogurt (Food Intelligence Center, 2012). Meanwhile, the market share of cows' milk products in 2012 included 60% plain milk and 40% sweetened milk. The Food Intelligence Center (2012) reported continuous growth in the overall milk market, emphasising the industry's strong investment in drinking yogurt, sweetened alternative milk drinks (soya and other grain drinks), and sweetened cows' milk.

This chapter presents data from observation of and interviews with the sample, and considers practices that can influence milk consumption including the over-consumption of plain milk, consumption of sweetened milk, and the provision of fortified milk to children, which contribute to their increased intake of sugar and the development of a preference for a sweet taste; parents and adults' perceptions about drinking milk; adults' strategies to persuade children to drink milk; children's responses to adults' interventions; and macro-level influences on pre-schoolers' milk consumption.

5.1 Milk-drinking practices that can contribute to the development of childhood obesity

Milk drinking practices among pre-schoolers in my study that were likely to lead to the development of childhood obesity included overfeeding plain milk; feeding children

with sweetened milk; and looking out for and feeding fortified milk, which is cows' milk to which the producers add vitamins and other supplements such as DHA (omega-3 fatty acid). Pre-schoolers' overconsumption of full-fat milk can lead to high calorie intake. An average milk carton contains 180 ml and 120 calories, which is approximately 15% of pre-school-age children's 1,300 daily calorific intake (Chittchang, 2012). The consumption of sweetened drink has been identified as one of the factors that influence the development of childhood obesity in many settings (W. H. Dietz, 2006; Ludwig et al., 2001; Malik et al., 2006). However, there is limited evidence and few studies of the effects of adding natural sweeteners or sugar to milk (Fayet-Moore, 2016). In Thailand, the significant availability of sweetened milk drinks has been evidenced, and total consumption of flavoured milk (including drinking yogurt and alternative milk drinks) is higher than that of plain milk (Food Intelligence Center, 2012). The Health Examination Survey conducted in 2009 reported that 56 per cent of children aged 2–5 drink approximately one portion (200 ml) of any type of milk every day, with 26 per cent drinking sweetened milk (National Health Examination Survey Network, 2011). Fortified milk drinks have a sweet and creamy taste which, with their exaggerated benefits, is likely to create unnecessary spending. Marketing strategies approach this type of milk as an investment area for milk companies (Manager Online, 2015a). Fortified milk products targeting children claim that they provide DHA, Omega 3 and other vitamins which, they say, support their cognitive development (restrictions and legislation on milk product marketing are discussed in Chapter 7).

Of the 18 children selected for further observation and interview, 8 consumed around 400 ml of milk products per day, seven consumed more than 500 ml and three, less than 200 ml. Two children drank up to 1,200 ml of milk in various forms per day,

substantially in excess of the recommended intake and representing 840 calories daily (up to two thirds of their recommended daily calorie allowance). Both the parents' feeding practices and the children's food preferences contributed to these drinking practices. Overconsumption of milk, i.e. drinking more than the recommended amount of 200–500 ml (130–330 calories) per day for children (Working Group on Food Based Dietary Guideline for Thai, 1998), was found in households across different socio-economic groups. The children drank standard plain school milk, fortified milk, sweetened milk and sweetened drinking yogurt. All children were given some kind of milk either at school or home. At kindergarten they were asked to finish their milk, especially at milk breaks, even if they felt full.

The three groups of families participating in the study, each representing a different socio-economic status, showed similar core values concerning feeding milk to their children and sincerely cared about providing milk for them. There were a few cases of children who could not drink cows' milk because of health conditions; however, these were given alternative drinks such as sweetened soya milk or, for wealthy families, special formula milk drink. Drinking milk was seen by parents from all socio-economic levels and by teachers as an integral part of child-rearing. When I asked teachers and parents about children's eating practices in general, they mentioned the provision of milk without my asking specific questions and told me that they tried their best to get the children to drink milk.

Eight of the eighteen children in my sample drank sweetened milk daily, of which five also drank plain and fortified milk. Apart from the plain milk supplied by the government to Temple Side and New Market kindergartens and the soya milk provided with

breakfast to children at Private Land Kindergarten, children were allowed to bring additional milk from home. Observing the shelves where the milk and snacks that children brought from home were kept at the three kindergartens (see Figure 5. 1), I found that more than half was sweetened milk and drinking yogurt. The kindergarten informed parents that they should prepare milk for children to drink in the milk breaks. I observed only one or two children who could not consume cows' milk products due to health conditions, and these brought alternative milk products. No one brought juice or sweetened-carbonated drinks; it is the norm to drink milk during milk breaks. Sweetened milk was used to encourage children to drink milk. This practice is attached to the idea that whatever milk children drink is better than no milk



Figure 5. 1 A kindergarten shelf of sweetened and fortified milk products brought from home (source: original picture)

Figure 5. 1 illustrates a section of the milk storage space for a level 2 kindergarten class (four years old). Of the thirty cartons of milk that parents provided for their children's two milk breaks, nine contain sweetened milk and four plain UHT milk; all the others contain fortified milk, including unsweetened and sweetened varieties.

Parents chose the milk products that they perceived as the best for their child. This consideration of best milk products is one among other criteria, e.g. whether the child will drink it and their budget. When selecting milk products for their children, parents'

decisions were also based on their values, knowledge and information. This is where the issue of 'fortified milk' came in as the best option for milk feeding. Parents bought popular milk brands' special formula milk for children from new-born to five years old.

Although this type of milk offers a similar number of calories to normal milk, the amount of sugar is higher and it has a sweeter and creamier taste than normal milk. The 180 ml carton of fortified milk contains 120 calories with 8 grams of sugar, while UHT milk contains 117 calories with 4.5 grams of sugar. The price of fortified milk is double that of other milk products, including sweetened milk, and double the price of straight milk (10 THB or 0.20 GBP versus 20 THB or 0.40 GBP per 180 ml). The nutritional information on the two leading fortified milk brands (Enfagrow A+ and Dumex Hi-Q UHT) state that they are produced from cows'-milk powder and contain vegetable fat. Fortified milk products were very popular with this sample: ten children of the eighteen across all socio-economic levels were served with them on a daily basis. Many parents valued fortified milk over UHT milk. Only one family preferred fresh milk, as discussed in section 5.2: adults' perceptions of milk consumption).

Parents overfed their pre-school children with milk and specialised milk products such as sweetened and fortified milk. Feeding plain full-fat milk without acknowledging its caloric contribution to children's diets, the use of sweeteners as a way to get children to drink milk, and the preference for fortified milk products that contain additional nutrients, are practices for concern because fortified milk products offer a sweet taste, even in the plain flavour, and are costly, at double the price of normal milk. The observation data suggests that drinking fortified milk has become the norm at the three kindergartens; the shelves at the two private kindergartens were full of fortified milk,

half of the parents indicated that they provided their children with fortified milk, and such products were widely available at all supermarkets, including 7-Eleven convenience stores (see Chapter 3). This is the case both at the kindergartens, where drinking milk is part of the daily routine with the teachers ensuring that the children drink up their milk, and at home.

In the next section I further investigate values supporting adults' actions regarding preschoolers' milk drinking.

5.2 Adults' perceptions and underlying values regarding milk consumption

Adults' positive perceptions about milk consumption were reflected in the practices and expressions of the parents in my sample. These included their emphasis on managing their children's milk provision and consumption during an interview with open-ended questions about their children's daily activities and food. Parents of the ten children who had no problem drinking plain milk told me proudly how much their children liked to drink milk, opening the carton themselves and drinking it without being forced; meanwhile parents of children who did not like milk explained how hard they worked to find milk that they would drink. The teachers at the three kindergartens reported on the food and milk consumption of the children to their parents verbally or in the kindergarten logbook on a daily basis. Other strategies that adults used to persuade children to drink milk are discussed in Section 5.3.

In addition to individual expressions and practices, the mass media carries messages developed by government agencies and the milk industry promoting the consumption of milk by Thai people of all ages. Milk consumption is promoted by two groups of

actors, state and businesses, with two different core messages. There are two main promotional schemes: the promotion of milk by government agencies with the message that drinking milk is good for you, and industry promotion of flavoured milk and other milk products, e.g. chocolate milk, drinking yogurt or fortified milk. Drinking milk is presented to consumers as important to make children grow up healthy, tall, intelligent and, implicitly, economically successful (see examples in next section) (Food Intelligence Center, 2012).

5.2.1 Milk is good for you: it makes children grow smart and tall

Believing that milk is best for their children, many parents encouraged them to drink as much as they could and even replaced water with milk drinks, leading to overfeeding. Minnie, aged three and overweight,⁴¹ attends Private Land Kindergarten. Her mother who has a food science background told me:

Minnie drinks a lot of milk. We let her drink milk instead of water ... so in total ... she drinks a litre at home, plus two bottles (120 ml each) at kindergarten. You know, we only choose pasteurised [full fat] cows' milk for her as it is the best and most nutritious option compared to UHT milk.

(Interview of Minnie's mother, August 2014)

Minnie's case illustrates the care that parents take over both the quality—selecting fresh rather than UHT milk—and the quantity of milk drunk, e.g. replacing water with milk. This case proves the success of advertising and campaigns in the Thai population. The parents told me proudly of their careful selection of the best milk and the big amount of milk they could encourage their children to drink. Minnie was one of

⁴¹ Weight >+1.5 SD. to +2 SD.

the children in my study whose parents supported and encouraged them to consume products that they believed to be beneficial, such as full fat fresh milk. They were unaware of the guidelines on limiting young children's milk consumption. For example, when parents were asked whether they knew how much milk they should give their children only one mother reported that she had learned from an article somewhere that she should not give her son more than two cartons (equal to 400 ml), according to the guidelines.

This perception is supported (or created) by a strong promotional government message with support from the milk industry through advertising. Since the introduction of milk to the Thai population in 1962 with the establishment of a domestic milk industry, the Thai government has launched a number of campaigns to encourage drinking milk including a well-known one with the slogan 'Have you drunk milk today?', a message positioning milk as an essential daily food (Smitasiri & Chotiboriboon, 2003). This was followed by a number of campaigns and the recent Department of Health's promotion of milk for adults and young people to increase the average height of the Thai population (Hodal, 2013). Through the establishment of World Milk Day on 1st June 2001, the Food and Agriculture Organization of the United Nations (FAO) has also played a role in popularising the product in Thailand in conjunction with MoAC. Apart from the government's promotional messages and the international support, the industry emphasises the message that milk makes children grow tall, and has introduced a radical message to society together with new milk products on the market.

Figure 5. 2 shows some examples of World Milk Day promotions announced by government agencies. The first message was publicised by the National News Bureau of Thailand on World Milk Day 2015, stating that the MoPH encourages all Thais to drink more plain milk and stressing that milk provides calcium and other nutrients that help to strengthen the bones. The article states that the volume of milk drunk by Thais is four to seven times lower than in other Asian countries and the world. In its conclusion the article suggests that this might explain why Thais are shorter than other populations. The MoPH targeted an increase in the average height of Thais from 167 centimetres to 171 centimetres by 2025. The second campaign logo was taken from Foremost (a Thai milk company) and the Thai Red Cross's 2012 'Show the world we drink milk' campaign in which the company promised to donate 1,000,000 cartons of milk to children in need living in remote areas, in the name of the Thai Red Cross. The third promotion poster was distributed by the Department of Livestock Development, the Ministry of Agriculture and Cooperatives, the FAO and the Thai-Denmark Milk Company promoting their activities on World Milk Day 2012, including a concert and the provision of free milk during the event.

Figure 5. 2 Examples of announcements and campaigns on World Milk Day⁴²

Good cognitive (being smart) and physical development (being tall) are the main concepts that Thai people value as desirable in their children, as shown in studies by Hesse-Swain (2006). These values were also found in the parents in this study. The way they most often encouraged their children to drink milk was by telling them that it would make them grow tall. *'For milk, I don't have to order him to drink, he grabs the carton and drink by himself. He wants to be tall,'* Aim's mother told me during an interview. The children who liked to drink plain milk had absorbed this concept and explained it to me during my observation and interview with them. It is certain that young children can easily understand the concept of being tall, and it also fits with what many children want. Parents in this study believed that milk would give their children health benefits, including good nutrition to make them healthy and support their growth and development. These beliefs were expressed at the interviews and in their practice of feeding their children milk. Being smart is related to skills development, which in later life will lead to economic success for each individual; meanwhile the notion of being tall is equated with being good-looking. Being tall is one of the norms in the conception of beauty in Thailand (along with fair skin, an oval face, an angular and narrow nose and wide eyes) defining the 'international look' (Hesse-Swain, 2006). With respect to these values, appealing promotional messages have been communicated via the government's milk-promotion campaign and the business sector's advertising. The government's campaign and announcement from the MoPH emphasize children's physical and cognitive development and encourage people to drink milk, but do not imply that this will lead to success as an adult, as industry advertisements do.

5.2.1 Fortified (expensive) milk product makes children smart

Fortified milk is promoted as the best milk drink, with the industry claiming that it fortifies its milk with a number of vitamins and nutrients. The formula and fortified milk market has been growing continuously since 2010 (Euromonitor International, 2015), partly because of stronger controls on the marketing of formula milk, extensive promotion of breastfeeding and the control of sugar in formula milk (further details about milk product regulation is discussed in Chapter 7). Advertisements from milk companies in the mass media find ways of sending the strong message that their product can make children smart—one advertisement uses as a pre-school child as their product presenter who drinks this milk and is the best academic performer in the class. Such advertisements do not claim direct benefits, but their design could lead consumers to form such an impression. For instance, an advertisement starts by describing the scientifically-proven benefits of DHA and vitamins and then continues to describe how a company's milk product also includes these nutrients, followed by a scene with the child who drank the product in a previous scene answering all the questions the teacher asks in the classroom. Without making any direct claims, all the presentations and sequences of the advertisement are designed to lead audiences to the conclusion that the product makes children smarter. As parents want to provide the best for their children, this includes providing what they perceive to be the best milk, and the milk producers' marketing messages resonate well with this.

Another example of an advertisement for a brand of milk states: '*Today's healthy body creates opportunities to make dreams come true...because the future starts today*', hinting that milk makes your children smart and enables them to become successful as they grow older (see Figure 5. 3). Figure 5. 3 shows children in costumes related

to prestigious careers to imply cognitive development that will create future success, mostly represented by scientific careers such as astronaut and scientist. These macro-level interventions (including campaigns and policies such as the school milk programme) aim to create positive perceptions of drinking milk in adults. The leading milk companies that run such advertisements on television include Dumex (Dumex Hi-Q), Enfagrow (Enfagrow A plus), and Dutch Mill (DMalt Triple 3+). The latest examples of the advertisements have been available on television and YouTube since 2012.⁴³



Figure 5. 3 The advertising banner for a fortified milk brand⁴⁴

The use of symbols to link milk products and brands with knowledge and academic performance is popular, especially in the case of fortified milk products. In Figure 5. 4, the two leading brands use the terms A+ and Hi-Q to brand their products. A+ implies the highest academic achievement, while Hi-Q refers to a high IQ or cognitive development. The nutrients that these products usually add to the milk include iodine and omega 3 (DHA), which, it is claimed, help in brain development. Other nutritional

⁴³ Dumex Hi-Q: <https://www.youtube.com/watch?v=4g4ky2LCKiM>

Enfagrow: <https://www.youtube.com/watch?v=je0xao2iirk>

DMalt: <https://www.youtube.com/watch?v=QvYocPhji68>

⁴⁴ Source of image: <http://www.hiqkidsclub.com/product/1-plus-pre-bio-proteq>

supplements that the companies add to their products include vitamins A, B12 and C, calcium, phosphorus and zinc.



Figure 5.4 Examples of fortified milk products and nutritional information⁴⁵

These products were popular not only among families with high socio-economic status but also among the low socio-economic group. Parents and other caregivers tried their best to seek out such products for their children even if their resources were limited, because they believed that they provide better benefits. The grandmother of Bright, an overweight four-year-old boy attending Temple Side Kindergarten, said: '*I can feel he's smarter when drinking those expensive milk products, as they put a lot of vitamins and nutrients into them.*' Then she turned to her grandson and said, '*Now you need to drink cheap [free school] milk for a while, my boy. We've run out of the expensive ones.*'

The quote from Bright's grandmother reflects a strong combination of values and influences from milk industry advertisements. Furthermore, it shows that even though

⁴⁵ Source of image: <http://f.ptcdn.info/942/008/000/1377597103-8850024800-o.jpg>

the family had limited resources it still provided these expensive milk products.⁴⁶ The provision of expensive fortified milk to pre-schoolers is becoming very popular, with the highest market value of 2.5 billion baht in 2014, while sales of plain cows' milk, soya milk and drinking yogurt totalled 1.4 billion, 900 million and 1 billion baht respectively (Manager Online, 2015b). At Private Land Kindergarten most of the shelves where the children's milk is kept are filled with this type of fortified milk, as shown in Figure 5. 1. Meanwhile parents of lower economic status made efforts to purchase these products for their children when they had the resources to do so.

The Thai goal of bringing up a child to be smart and successful with good academic performance has become popular among parents, especially in urban areas (Tapanya, 2011). All the teachers and parents in this sample observed that the requirements of young children's academic performance has increased considerably compared to their own generation. Sending children to tutoring schools has become a popular practice. From my observation at Private Land Kindergarten, children attended six lessons a day; these included English and Mandarin (for children aged 2-5), mathematics (for 4-5-year-olds), and cognitive skills development. This mostly happens at private kindergartens, where the parents are on a higher socio-economic level, while buying expensive milk is an accessible choice for those cannot afford to send their children to tutoring schools. The teachers said that they had to teach more difficult lessons to the children to enable them to compete with others in the entrance examinations for the famous primary schools organized by leading government universities. This also

⁴⁶ The grandparents are retired and work as day labourers earning 300 THB (6GBP) per day (the minimum wage) when work is available.

enhances the reputation and guarantees the academic quality of the kindergarten concerned.

I observed little difference in milk consumption between children from families with high, middle and low economic status. This is also because the children received free milk at kindergarten. Families on a limited budget may stop buying ‘expensive/fortified milk’ products when they run out of money and rely on the free school milk. Meanwhile those with higher economic status can purchase fortified milk without constraint. Families on a limited budget showed me how they flavoured plain school milk by adding sugar to make it more palatable to the child. This suggests a need for better public education about milk and sugar consumption among pre-schoolers, targeting parents and other adult carers.

5.2.3 '*Give milk to the one you love*'

Considering all the perceived benefits of milk, parents tried to provide this nutritious drink for their children. This was clear on my visits to the children’s families. The parents tried to get both large amounts and the best quality of milk for their children. If they did not like milk, the parents focused on giving them whatever milk they would drink, including sweetened products.

The parents’ perception that they should feed their children milk led them to employ a number of strategies to persuade the children to drink it (see following section for details). The commonest example was parents negotiating with their children and ending up offering them a sweetened milk drink. None of the parents or teachers expressed concern or knowledge about the possible negative effects of

overconsumption of full-fat milk, or doubts about the benefits claimed by fortified milk producers. Only a few parents knew about the drawbacks of drinking sweetened milk, as illustrated by the case of Aim, who had not been breastfed as a baby. His mother told me '*He was fed with powdered milk since he was born. When he was [2-4 years old] and was still on a bottle, I would prepare four bottles and leave them in his bed, and he would grab the bottles and finish them during the night. This is why he got caries*'. However, parents' beliefs about the benefits of milk and their desire to provide good things such as milk for their children led them to ignore such potential harm, e.g. Aim's caries; and Neutron, whose mother was advised by her son's paediatrician that she should only give plain milk, to her son, who refused to drink it but was happy with sweetened milk. Thus the parents decided to let their children continue drinking sweetened milk, as they believed that at least they were drinking some form of milk.

This perception can be linked back to the 'Give milk to the one you love' (*Rak krai hai duem nom*) campaign, one of the most popular since early milk promotion in the country. The promotional message was followed by a series of TV advertisements produced by the milk industry presenting scenes with parents taking care of their children. Advertisements for children's milk commonly use pictures and scenes of mothers offering milk to their children accompanied by messages emphasizing the love that the mothers are showing for their children by giving them milk, as illustrated in Figure 5.5.



Figure 5. 5 Screenshots from TV milk advertisements

5.2.4 Milk is valuable and should not be wasted

In Thai society, food is valuable and should not be thrown away. The words *sia dai* or *sia kong* in Thai, meaning that it is a shame or a waste (to throw things away), are commonly used when food is left over or thrown away. Milk is considered a valuable food and it can be difficult for some people to see it being thrown away. This encourages practices such as coercing a child to drink up their milk by standing beside her and keep watching to ensure she drinks up; it can also put them off drinking milk. This only happened at the kindergartens; I did not observe the same situation at home. A teacher at Temple Side (public) Kindergarten, which is under the state's free milk scheme, demonstrated the importance of not wasting food, including milk, by discouraging the children from opening a carton of milk unless they could finish it. Cartons of milk were sent to Temple Side Kindergarten from the local authority office and stored there. The children were supposed to drink them in the afternoon milk break. However, the teacher was reluctant to encourage all of the children to drink milk; instead she announced:

'This milk is for those who really want to drink it...if you want some, please take it, but be sure you really want it and that you can empty the whole carton before opening it. Otherwise don't take it'

(Observation, October 2013)

I observed a conflict between the teacher's value, that wasting milk is bad, and the provision of nutrition to the children, which resulted in her implementing the rule that only those who could finish the entire portion could have milk. Her action did put some of the children off drinking milk. Even though a few were brave enough to contravene her instructions by opening the carton and secretly disposing of any unwanted milk, the majority chose not to open a carton. This was the case at Temple Side Kindergarten where the individual teacher prioritised the value of not wasting the milk over the value of giving the children milk. Furthermore, teachers' milk-feeding practices, such as encouraging children to drink milk or to finish their carton, may not indicate that as individual adults in society they embrace the value of providing milk to children or see it as an additional source of nutrition. At Private Land Kindergarten there is an agreement between the kindergarten director and the teachers that they must ensure that the children drink up all of their milk every time. The director told me '*I want to provide the best care, what parents want for their children ... this is why I made one side of our cafeteria glass, so they can see when their children eat [and drink]*'. I observed that when new teachers started at the school, senior teachers taught them (and me) how to encourage children to drink their milk and that they should check that their cartons are empty before letting the children throw them into the bin.

Recognition of the value of food, as shown by the kindergarten teachers, led to two different practices: encouraging children to drink up all their milk even though they may be full, and discouraging them from opening a milk carton if they could not finish it so that they did not waste it.

5.3. Adults' strategies for making children drink milk

Adults, including teachers and parents, employed strategies to encourage children to drink milk that reflected their own values and perceptions. In addition, the milk industry implements advertising strategies targeting children, the main consumers of milk, with a different purpose. Strategies found in this study included the use of routine milk breaks at kindergartens and the production of milk in the flavours that children prefer. The milk industry's use of packaging and marketing to encourage children to choose certain brands is also discussed below.

5.3.1 Structured routines and home organization to facilitate drinking milk

All government schools and kindergartens implemented the school milk programme and organized routine milk breaks. Schools and child development centres (kindergartens) were chosen as a platform for the implementation of this public policy. Since then all kindergartens and schools have added these routine breaks to their schedule (Kammungkhun, 2009).

At all three kindergartens, drinking milk was routine, as stated in their written activity schedules. Drinking milk was an activity like school lunch and other regular activities. The amount and types of milk that children drank depended on each kindergarten's policy. Public kindergartens such as Temple Side have one milk break a day and provide plain milk from the government's school milk scheme; the two private kindergartens, New Market and Private Land, schedule two or three milk breaks. The frequency of the milk breaks also depends on the hours the children spend there, as shown in Table 5. 1. The milk provided was a combination of free government milk

(one carton per day) and milk that parents provided, which according to my observation included fortified and/or flavoured milk.

Kindergarten	Operating time	Milk break	Source of milk
Temple Side	8.00 am–2.30 pm	2.00 pm	School milk programme ⁴⁷
New Market	8.00 am–4.00 pm	10.00 am and 2.00 pm	School milk programme and parents' provision
Private Land	8.00 am–6.00 pm	8.00 am, 10.00 am and 3.00 pm	School catering (sweetened soya milk in the morning) and parents' provision

Table 5. 1 Kindergarten operating times and routine milk breaks

At kindergarten the children drank one to three cartons of milk per day (200-750 ml). They may or may not have drunk more at home (see section 4 describing children's responses to adults' strategies to encourage them to drink milk). Private Land Kindergarten provided soya milk with breakfast and the parents provided two cartons of milk for their children to drink at the 10.00 am and 3.00 pm milk breaks.

At Private Land Kindergarten and some other kindergartens in Thailand the children are taught to sing a song before drinking their milk:

Drinking milk is very good.

It helps our bodies grow strong.

I like to drink milk every day, as it makes me looks nice and cool.

Who wants to be smart?

Come and drink a big cup of milk.

Teachers love us, others praise us.

⁴⁷ Apart from drinking a carton of milk at school during the semester, children also receive 36 cartons of school milk to drink at home during the two-month vacation.

We have chubby cheeks and sparkling eyes because of a big cup of milk.

Drink, drink, drink—let's drink milk!

Drink and don't spill out.

Drinking lots of milk will make us strong!

(Observation, April 2014)⁴⁸

This traditional rhyme is popular at many kindergartens and is included in the material for a pre-school teacher training course at some government institutions as an example of an activity that can be implemented at kindergartens to make preschoolers' milk breaks enjoyable. The rhyme is widely adopted in many kindergartens in Thailand. At Private Land Kindergarten the meaning of the rhyme is reinforced by the teacher making sure that the children finish their allocated milk; thus the children tried to finish their milk even though they felt full.

I observed that some of them pretended to finish their carton by making a noise as if the carton was empty to escape the rule of emptying the carton before throwing it into the bin. (Observation, April 2014)

The routine milk break at New Market and Private Land kindergartens got children to drink milk more easily and in larger quantities than at home with their parents. It was easy for teachers to persuade the children to drink milk as part of the daily routine. The teacher acted as rule-implementer to ensure that the children drank milk. This was discovered by comparing the amount of milk that children drank when they spent the entire day at kindergarten with what they drank at home at weekends. For

⁴⁸ At some kindergartens the children only sing the last three lines.

example Neutron (four-year-old boy of normal weight attending Private Land Kindergarten) usually drank four cartons on a weekday—one at home and three at school. At home at the weekend he only drank one carton each morning. However, the types of milk that children drank at kindergarten were difficult to control, especially their sweetened milk consumption, because parents purchased flavoured or fortified milk for their children to drink there. At New Market Kindergarten the teacher managed to get all the children to drink the carton of plain milk that they received from the government's school milk scheme.

As discussed in section 2.4, teachers tried to get all the children to drink all of their milk, and their actions in the attempt to do so were driven by many underlying factors. At Private Land Kindergarten teachers encouraged the children to empty their cartons following the rule set by the kindergarten director. This could lead to overfeeding when some children had shown that they were full. On the other hand, a teacher at Temple Side Kindergarten saw it as a waste if children could not empty their carton, and this led to restricting some children's milk consumption. Both cases raise the concern that these teachers were really determined to act according to these drives and as a result pushed drinking milk far beyond its usefulness. This may demonstrate their limited knowledge of child-rearing, including proper feeding practices to ensure that pre-schoolers receive a balanced diet on a daily basis.

The government's school milk programme aims to provide the minimal amount of milk that children should consume, assuming that they are undernourished; however, this was not the case at the three participating kindergartens. Most of the children also drink milk at home. Likewise, the private kindergartens' owners' policy, e.g. the three

milk breaks at Private Land Kindergarten, might aim to please the parents, the kindergarten's customers. Nonetheless these feeding practices are associated with the fact that society, including parents, believe that milk is good for children's physical and cognitive development. Examples of this included Bright's grandparents, who believed that fortified milk made the boy smarter, and Liz's mother, who had a background in nutritional science and believed that fresh milk would provide her daughter with the best nutrition compared to other milks available on the market, including fortified milk.

At home, parents also tried their best to organize an environment that included rules to facilitate their children drinking milk. Because parents and other family members, perceived that milk is good for children they were happy to provide them with it so that they consumed something beneficial. The adults tried to make milk easily accessible to children in terms of place and time. The children knew very well where they could get milk when they wanted it:

While talking to the parents of April and Kao, the children went to the cupboard and got some milk. The father explained that his children, especially Kao, liked to drink milk and were allowed to drink as much as they wanted. The parents left cartons of plain milk on the small table (reachable by the children), ensuring that it was available all the time
(Observation, August 2014).

Another example is Aim's mother, who reduced her son's sugar consumption by banning sweets and other confectionery; however, she was willing to relax this rule by allowing him to choose sweetened milk and drinking yogurt as his snack.

Children's decisions and actions around drinking milk can be influenced by many factors, of which the most powerful is the daily routine at kindergarten and the organisation of the home environment according to adult carers' values. These influences the children's choices and actions.

5.3.2 Offering the taste that children prefer

Providing sweetened milk was a common strategy that parents used at home to encourage their children to drink milk. The children's favourite drinks included chocolate-, and honey-flavoured milk and sweetened drinking yogurt. These drinks contain 2-3 teaspoons of added sugar, or 10-15 grams of sugar per 200 ml (see Table 5. 2), which represents half the daily amount of added sugar recommended by the Department of Health of Thailand, 24 grams per day (Bureau of Information, 2015).

Types of milk	No. of brands available on the market	Amount per container	Amount of added sugar per carton (1 teaspoon=5 grams)		Calories per 100 ml
			Teaspoon	Grams	
Plain milk	34	200-250 ml	0	0	60
Milk sweetened with sugar, honey or other sugary flavours	51	180-250 ml	1.125-3.31	5.6-16.6	70
Chocolate-flavoured milk (contains more sugar than sweetened milk)	20	180-250 ml	2.250-5.62	11.3-28	70
Drinking yogurt	62	110-180 ml	2.250-5.18	11.3-26	70
Sweetened soya milk	17	110-250 ml	1.370-5	6.85-25	70

Adapted from Prasertsom (2007)

Table 5. 2 Types of milk and amount of sugar they contain

Parents had difficulties encouraging their children to drink milk. The children's personal preferences and characteristics played a role in this process. Ten children in my

sample accepted plain milk, while the other eight refused to drink it (see details of the children's temperaments in Chapter 4). The compromise with those who refuse to drink milk was letting them choose their preferred milk drinks from the various products on the market. From my observations at the three kindergartens, flavoured milk was usually what the pre-schoolers chose. Even though some parents acknowledged that these sweetened drinks can cause caries, they chose to trade off the dental risk against the believed benefits of milk:

I do not allow him to buy sweets when we stop by convenience stores. They cause bad teeth, you know ... I only allow him to buy milk. Whatever milk he likes, I let him buy ... usually he gets [sweetened] drinking yogurts. These are his favourite. Interview with the mother of Aim (obese five-year-old boy, New Market Kindergarten), who prepared four bottles of milk and made them available for her son to drink during the night when he was two years old, and explained to me this was how her son had developed dental problems.

The strength of some parents' belief in the benefits of drinking milk was demonstrated by the mother of Neutron (four-year-old boy, normal weight, attending Private Land Kindergarten), whose paediatrician had informed his mother that he and his older sister should not drink dairy milk at all, suggesting soya milk as a substitute. At his house I observed that Neutron's parents had chocolate-flavoured cows' milk and sweetened soya milk in the food cupboard. The mother explained that she provided the chocolate-flavoured cows' milk for her children because they refused to drink plain milk, especially the older daughter (eight years old, normal weight), who did not like drinking milk at all. The girl would barely finish even a tiny 110 ml carton of chocolate milk. As for Neutron, he could drink normal-sized 180 ml cartons of both chocolate-

flavoured cows' milk and sweetened soya milk. Their mother claimed that these were the only milks that her children could drink; otherwise they would not drink milk at all. '*At least they drink some milk,*' she said. Although she had adopted all the family paediatrician's breast-feeding recommendations, when it came to milk drinks her perception of the value of milk was so persuasive that she did not follow the doctor's recommendations. The paediatrician had told her to treat milk as an optional supplementary food for the children and to emphasise main meals. Despite this, the mother still believed that her children should drink milk and thus had to choose the milk products that they preferred.

Even parents in the lower socio-economic bracket had to manage to buy milk that their children would drink. On my visit to Pond (four-year-old boy attending Temple Side Kindergarten) I found a box of expensive sweetened fortified milk stored at the house. The grandmother explained:

Pond does not like the [free] milk he receives at kindergarten because it has no taste. When we run out of the expensive milk I will use the plain school milk, but I will have to add a few teaspoons of sugar to flavour it so he can drink it.

(Interview of Pond's grandmother, December 2013)

The taste of food is an important consideration for most adults, and they thus assume that their children should enjoy what they eat and drink too. This was reflected in their milk-feeding practices. Nimo (three-year-old overweight boy attending New Market Kindergarten) was on a controlled diet and his mother only let him drink low-fat milk. His class teacher expressed her sympathy towards the boy, saying cheerfully:

He can only drink tasteless low-fat milk, while his friends can drink normal and chocolate milk! The low-fat milk is so tasteless, but luckily Foremost [a UHT milk brand] has produced chocolate-flavoured low-fat milk [with sugar], so now he can drink tasty milk like his friends!

This case is complex, with compromises between different values held by adults resulting in the milk fed to the boy. While the mother tried to control her son's diet according to the nutritionist's recommendation, her selection of flavoured milk, although a low-fat option, revealed her values as a good mother providing milk for her child, caring about his health, and pleasing him with the taste of the milk. The reflections of the class teacher also emphasise the importance of the taste of food in Thai culture. As presented in Chapter 4, adults had a perception that children like to eat, i.e. sweet taste and this can influence how adults chose food and milk options for children.

5.3.3 The use of marketing strategies to attract young customers

Milk companies not only use marketing strategies targeting parents to positively promote drinking milk alongside the government; they also target children. Unlike the parents' aims in trying to get their children to drink milk, the milk companies are competing for a bigger share of the milk market. This includes the use of packaging especially designed for children, organizing events, using cartoon characters in branding, and associating their products with valued benefits such as being smart and tall.

Milk companies position certain milk lines, including plain milk, drinking yogurt, sweetened milk and fortified milk as food specifically designed for children, as reflected in smaller cartons illustrated with colourful patterns and children's favourite cartoon characters. Characters such as owls and dolphins are used to imply intelligence. These characters are promoted through TV advertisements, billboards, printed and electronic media and promotional booths in places such as shopping malls, where families spend time together, and at kindergartens with events containing activities such as storytelling and the distribution of free samples.



Figure 5.6 Examples of packaging for milk products aimed at Thai children⁴⁹

Figure 5.6 presents examples of milk packaging aimed at attracting children by the use of famous cartoon characters such as Looney Tunes characters on drinking yogurt cartons on the left, and the dolphin and giraffe on the right. In addition these cartons are made in a small 110 ml size, while the normal milk carton size is 180 ml. The use of characters such as dolphins not only helps children to recognise the drink but also implies that drinking the product will make them as smart as a dolphin. Meanwhile the figure of the giraffe symbolises being tall. The giraffe on the milk package on the right is also wearing sports clothes and holding a basketball ball. Prominent on the package

⁴⁹ Source of image: <http://webboard.news.sanook.com/forum/?topic=3463703>

is the promotional message ‘four times higher calcium’, with the word ‘higher’ highlighted. These emphasises the benefits of drinking milk which, it is claimed, will increase height and cognitive development. The messages and packaging are carefully designed to avoid breaching marketing regulations. The company uses the message ‘high in calcium’ (or other nutritional benefits) and symbols such as dolphins and giraffes which epitomise intelligence and height to communicate with consumers, hinting at the results of consuming their products without spelling it out, because claiming health benefits for such products is against the regulations.

Milk companies further create related events using these symbols as their brand ambassadors at social events targeting pre-school children. My observation at kindergartens also revealed direct-to-consumer marketing in the form of promotional events at the private kindergarten. A fortified milk product called Enfagrow A+ organised an event where they provided storytelling and games and handed out milk samples to the children. The company employed promotional strategies that targeted both the children, by using an owl cartoon character and storytelling, and parents, by providing free samples (see Figure 5.7). Figure 5.7 illustrates Activity organised by a fortified milk brand at a private kindergarten. Top left: storytelling. Top right: the owl is the leading actor and represents a wise character who drinks this milk. Bottom: after the storytelling the female promoter distributes samples of milk to the children.



Figure 5. 7 Activity organised by a fortified milk brand at a private kindergarten⁵⁰

Although advertising infant formula is controlled by law because it conflicts with the promotion of exclusive breastfeeding, which is the main policy in Thailand, this does not apply to products aimed at pre-school-age and older children. Advertising fortified milk is constrained by rules forbidding overstatement of the products' benefits. However, lack of legal controls and enforcement has left room for controversial action such as the use of cartoon characters on milk cartons to attract children, and the organisation of events promoting milk products at kindergartens, and has seen the industry make implicit claims that milk can make a child smarter and able to perform better academically. Thailand's Food and Drug Administration (FDA), with support

⁵⁰ Source of image: <https://www.facebook.com/ShambalaAndKlomkleo/?fref=ts>

from non-profit and social organisations, announced in 2007 that it was considering improving the law controlling the advertising of snack and milk products for young children (Academic Resource Center: Thai FDA, 2007). However, to date the regulation has not been amended, although the issue is still under review and was discussed and announced as a resolution in the 6th National Health Assembly, 17th-18th June 2014.⁵¹ During the time of writing this thesis, I checked with DoH staff and found that no progress has been made at the time of writing this thesis. They admitted to have been dragging by policymakers to work on other policy issues all the time; therefore, neglecting this issue.

Children can recognise the brand of their milk drink through the cartoon characters on the milk carton. The mother of Pearl (three years old, overweight, attending Private Land Kindergarten) told me that her daughter would go straight to the supermarket shelf and select a certain sweetened milk brand when they went shopping.

When she was at nursery [at 1-2 years old] she drank plain [fortified] milk...but later, when she began her K1 (at 3 years old) she started to get bored of drinking milk [and refused to drink it] ... one day when we went to Big C (a hypermarket) she saw a small carton of Ovaltine drink (sweetened cocoa-flavoured milk) with a cartoon dolphin on the pack and requested it, and has drunk only Ovaltine since then. (Interview of Pearl's mother, June 2014)

⁵¹ The National Health Assembly is organised by the National Health Commission Office under the National Health Act, 2007. The body is established to support the development of healthy public policies in cooperation with various sectors in society. The Commission provides advice to national and local government and state agencies on the people's well-being but does not have the legal power to enforce policies.

Although the mother claimed that she had never purchased or fed the girl this sweetened milk before, Pearl recognised the dolphin on the carton and asked her mother to buy it. Ovaltine Smart milk has produced a cartoon series about a dolphin called ‘Smart’ who is intelligent and fixes problems and leads the team (see Figure 5. 8). Smart the dolphin drinks Ovaltine Smart before making decisions or acting to solve problems. The videos are available widely on YouTube (see <https://www.youtube.com/watch?v=TFUKIX5u8h4>), the company’s Facebook page and CDs distributed by the company. The videos also aim to teach children English. This could be how the Pearl recognised the dolphin.



Figure 5. 8 Examples of scenes from the Smart Dolphin cartoon⁵²

This kind of marketing strategy targets not only children but also the parents who are watching with them to boost the latter’s perceptions of the benefits of milk and the rationale for providing it to young children.

5.4. Children’s responses to adults’ strategies persuading them to drink milk

While all the parents wanted their children to drink milk, not all the children liked it or drank it without rebelling. The level of their disobedience varied, influenced by child-rearing approaches and other factors in the household environment, as with eating

⁵² Source of image: screen shots taken from <https://www.youtube.com/watch?v=TFUKIX5u8h4>

meals as discussed in the previous chapter. Some of the children had learned and developed strategies to manage their milk-drinking preferences and managed to avoid the routine milk break at kindergarten and negotiated with parents at home to drink a certain amount of their preferred milk, such as chocolate-flavoured milk.

Of the 18 children, 12 drank plain milk obediently, and five of these liked it and consumed more than the national recommendation of 400 ml per day. Two only drank plain milk at kindergarten. Five children across the three kindergartens had difficulty drinking plain milk and refused it, only accepting sweetened milk. Learning that they could not escape drinking milk at routine kindergarten milk breaks, those who did not like milk tried to negotiate for their preferred milk options or to drink as little as possible. I observed that at the kindergartens some children tried to avoid the milk-drinking routine by throwing milk away, pretending to empty the container by making a sound as if the container was empty and then throwing it into the bin, buying time by crying, or stirring the cup (in case of those drinking from a cup) until milk spilled out, etc. At home it was easier to avoid drinking milk. In addition they negotiated for their preferred types of milk such as chocolate-flavoured milk or drinking yogurt. Those who liked plain milk could easily access it, in many cases without limitations about how much they drank each day, as shown in the case of Kao and April, whose parents made plain milk available to them on a small table all the time.

Belief in the benefits of drinking milk had been transferred to the children, together with other practices such as adults' compliments and positive reactions when they drank a lot of milk or finished their carton. Children showed their understanding by announcing that they had to drink plain milk because their parents and teachers had

told them that it would make them grow (tall) and be strong (healthy), as illustrated earlier in Chapter 4 regarding Pine (four-year-old girl, normal weight, attending New Market Kindergarten), who stated that eating a lot and drinking plain milk would make her grow tall and strong. This was echoed by Aim (five-year-old overweight boy) who drank '*milk because I want to be tall*'. Jeed (five-year-old boy, underweight, attending New Market Kindergarten) was taught and made to drink plain milk, although his personal preference was for chocolate flavoured milk:

Jeed was having his small pack of extruded snacks and carton of plain milk when I asked a small group of five pre-schoolers what they had for afternoon snacks. Jeed showed me his milk carton, saying '*Today I brought plain milk. My dad said if I drink plain milk I will grow up very quickly ... [pause] ... but drinking chocolate milk makes you grow quicker.*' I asked him '*Why? who told you that?*' He smiled shyly and replied '*Me*'. (Observation, August 2014)

The boy had been taught by his father and teachers about the benefits of drinking milk. However, he showed his indecision between what he had been told to do and his own preferences, although he did not have full independent power to access to his favourite sweetened milk option.

Even though the kindergartens and parents were happy that drinking milk has been set up as a routine with strong support from the government's school milk programme, they could not control the outcome of milk-drinking practices, which partly depend on the children. The business sector, i.e. the milk companies, on the other hand show great understanding of children's agency and know that children have the power to negotiate over what and how much they drink, and thus employ marketing strategies

to target these young customers. My investigation confirmed that children have agency to negotiate and reconstruct social order, as observed by Markström and Halldén (2009). In my study I found that they had developed ways to negotiate for their preferred milk drinks or even to refuse to drink at routine milk breaks (with different levels of rebellion depending on the teachers). In addition, some children reproduced or redefined the values of drinking milk, as in the cases of Pine and Jeed above. The issue of children's agency in the pre-school setting should be recognised by adults and regarded the importance of children's agency because children's agency illustrated key roles in the implementation of relevant rules or policies.

5.5. Macro-level influences

The analysis above finds that the government's school milk programme, national campaigns to encourage drinking milk, the promotion of milk by the milk industry, and societal values regarding milk are strong macro-level drivers that influence children's milk consumption. The convergence of values and strong social and economic macro- and exosystem influences is a distinct characteristic of the analysis of milk consumption. The use of ST and EST to guide the analysis of this is useful in two ways: ST offers the concept of network of position-practice to understand how macro- and exosystem values and factors influence individuals. Furthermore, EST offers a framework to explain the role of the media, which is the outstanding driver at the exosystem level, shaping children's contexts and influencing the interactions of parents with their children over milk consumption.

5.5.1 Values and network of position-practice shaping the drinking of milk

With their different aims, the government and the business sector are main agents of the macro-systems working to support milk-drinking. Milk is thus promoted for not only health but also economic purposes, therefore many players invest in its promotion. Thai government agencies have been promoting the consumption of plain milk for two reasons. The first is to boost the milk market, as stated in an FAO article written by the president of the National Milk Drinking Campaign Board (see below).⁵³ The second reason is to promote the health of the population:

The principle objective of the National School Milk Programme is to support the Thai dairy industry, by providing an outlet for locally produced milk. By providing milk to the young at an early stage, will also through time developed [sic] a taste for milk and hence a market for the future (Suwanabol, 2005).

Macro-level agents, namely the government and the business sector, have been successful in creating effective messages based on social values, such as the identity of parents and the preference for being tall and smart, as discussed.

To explore and explain how the values promoted by macro-system find their way to individuals and affect their actions, I use the structuration theory concept of the network of position-practice. Assigning ‘parents of pre-schoolers’ as an agent-in-focus, I identify relevant position-practices of paediatricians, teachers and parents’ groups as well as direct messages received from media as their main network of position-practice.

⁵³ The Food and Agriculture Organization, a United Nations agency established to support the development of the food and agricultural sector.

The messages that government agencies and business sector have created have been distributed through different channels to the target groups, including parents, teachers and children, as shown in my study. The main message uses the value that ‘milk is good for children’s health’ and milk companies draw on additional values and messages to create specific identities for their milk products. These include the values presented in section 2: ‘milk makes children tall’, ‘fortified milk makes children smarter [than normal milk]’, and ‘you give milk to the one you love’, implying that if parents love their children they will give them milk. Unlike the values regarding meal consumption discussed in the previous chapter, drinking milk carries a specific value—it offers outcomes that parents and even policymakers desire: being tall and being smart. This seems to be attractive and persuades parents to encourage their children drink milk.

The networks of position-practice to deliver values about the benefits of drinking milk to individuals including paediatricians, teachers, parents and children are linked, and show the strong mechanism of a number of position-practice networks working together in the same direction, with the main value providing milk to children, although with different details added to the main message. The position practice of paediatricians is influential in terms of providing evidence-based recommendations about milk consumption. Their advice to parents is to give children 400 ml of plain milk a day. However, in practice parents such as Neutron’s mother found it difficult to follow such advice, since children negotiate for sweetened milk. So most parents only use the main message: ‘provide children with milk [of any sort]’. Moreover, even though paediatricians are in a position-practice network in which the parents showed the highest level of trust, they are also the most difficult to reach by parents. Parents of

middle and high socio-economic status only take their children to see a paediatrician for vaccinations and when they have health problems. Kindergartens complement the parents' role of feeding children milk to by making sure that pre-schoolers drink and even empty at least one carton a day. Teachers take on this role and act according to many factors, including school policy/order and their own internalised values. At kindergartens where parents associate with one another (Private Land Kindergarten, in my study) they share their knowledge about child-rearing, including about the food and milk that they provide for their children. In addition, the parents can see the types of milk product that others give their children to drink on the kindergarten shelves. Children are also exposed to media content and can put their choice of milk drink to their parents when they are deciding what milk to purchase. Parents, the main caregivers responsible for preparing milk for their children, receive messages from various networks and act according to how they internalise them.

My study suggests that the public are susceptible to misinterpretation of received information, especially on the subject of fortified milk, judging from milk consumption practices. A case of conflicting messages to parents was also found by Chan et al. (2010a), who undertook an ethnographic study of ten obese and non-obese pre-schoolers in Hong Kong. They found that the main carers showed confusion as a result of the different messages about proper health behaviour that they received from different of position-practice networks, including other parents, nurses and information that they seek online. This is an issue for concern, and needs to be further investigated to understand how each network influences parents to help them to provide reliable support regarding child-rearing and milk consumption.

5.5.2 Role of the media in the EST exosystem

In EST the role of the media is recognised as part of the exosystem, as proposed by K. K. Davison and Birch (2001), focusing on two factors: family TV viewing and parents monitoring children's TV viewing, which can influence children's weight status. Jordan (2004) defines the media as a factor in the exosystem that plays a part in shaping children's contexts. She defines children's exosystem as 'social settings that influence a child's development but in which the child does not necessarily have a direct role' (p.197) in her investigation of the role of the media in children's development from an ecological systems perspective. She finds that the role of the media in shaping the context of childhood has rarely been investigated under EST, whose traditional focus is on nested environments influencing children's development. A child is placed at the centre the micro-, exo-, meso-, and macro- environmental system levels. The mass media is defined as one of the exosystem institutions that influence children but in which they do not necessarily participate (Bronfenbrenner, 1974). The investigation of the role of the media in Davison and Birch (2001) and Jordan's (2014) reviews reveals that children are passive viewers of media content, and that consuming media content is beneficial only when they watch the media with their parents.

Considering the messages that the media sends out to its audience, including children, Jordan observes that 'it is clear that the cultural context—the exosystem (including media)—provides children and families with ... a set of competing, converging, or complementary messages (e.g., one must be thin to be valued but eat candy to be happy)' (p. 203). This statement agrees with my investigation of milk consumption, which found a number of competing, converging and complementary messages around drinking milk. For example 'drinking milk is good for health but sweetened milk

can cause dental caries' and 'milk is good for health and drinking fortified milk makes children smart'. Parts of these messages are employed by different players with the core message that 'milk is good for you'. The messages are passed to children via different channels and networks, as discussed in section 5.5.1.

My study confirms that young children are exposed not only to TV advertisements but also to other media influences such as DVDs, Facebook and YouTube. Jordan (2004) defines these as new media and an area for future research to explore how they affect interactions between children and parents. Evidence clearly suggests that the media is the channel via which macro-system factors build a strong link directly to young consumers which is strongly supported by adults, due to the positive values and milk-friendly environment that have been created by stakeholders over the years. In my study, parents and children were exposed to the same TV milk promotions. In some families the parents chose content produced and distributed as a promotional gift by milk companies. The content of messages promoting milk is positively perceived by parents, and all media such as DVDs and cartoons on YouTube that milk companies produce (e.g. the story of the dolphin who can fix difficult problems) offer good values and opportunities for learning such as English lessons for children.

The children also absorb the value of drinking milk, given the way that their homes and parents', kindergarten and teachers' environments are organized and the values that they learn from their peers and siblings and the media. Some children learn that any type of milk they drink is fine and receives a positive reaction from their parents, and so they negotiate for sweetened milk, as shown in a 2011 national survey that found that 50 per cent of children who drink milk chose sweetened milk or drinking

yogurt (National Health Examination Survey Network, 2011). I argue that in this case, when parents' values are in line with or stimulated by media content ('milk is good for you'), it is complicated to expect them to monitor and control such media content and guide their children alone. Milk companies employ multiple channels for their marketing including organizing direct promotional events at kindergartens with the use of positive content to promote milk drinks, and this is widely accepted in society. At the specific event I presented in section 5.3.3, the teachers also positively promoted provision of milk to children when they decided to allow the milk company to organize an event at the kindergarten. Thus media control should be led by government agencies through regulation and law enforcement, the main elements of EST macro systems for supporting individuals.

CHAPTER 6: SNACKS AND SWEETENED DRINKS

This chapter presents my findings in relation to snack consumption among the pre-schoolers in my study, focusing on unhealthy snacks.⁵⁴ The chapter focuses on a snack (*A-han wang*) as a small amount of food eaten between meals. *A-han wang* also includes a snack eaten while waiting for a main meal (*Rong tong*), and desserts (*Ka nom*). Unhealthy snacks have a high energy content and contain a large amount of sugar or salt, e.g. sweets, biscuits, sweetened drinks and deep-fried food (chips, sausages or meatballs). These were the unhealthy snacks that the children in this study commonly ate. Most are relatively recent Western imports, as I discuss in the final section of the chapter. Some are distributed by international food companies such as Nestlé, while others have been adapted by Thai traders for sale at markets and street stalls.

This chapter discusses snacking practices at the pre-schoolers' kindergartens and homes. The analysis focuses on their consumption of unhealthy snacks and sweetened drinks such as carbonated and sugar-added drinks other than milk and yoghurt, as one of the main themes emerging from the data analysis. It explains the thinking behind the provision and selection of snacks for pre-schoolers using data from observation at their homes, on the way home, and at the three kindergartens. The consumption of sweetened drinks has been proven to contribute to the development of childhood obesity (Ludwig et al., 2001; Malik et al., 2006; Moreno et al., 2004). I found that eating snacks influenced other food consumption (main meal, fruit and milk)

⁵⁴ Healthy snacks may include vegetables, fruit, grain, crackers and unsweetened dairy products. Some local snack food such as dumplings that are cooked with less oil (grilled or steamed) can also be healthy.

at kindergartens in my study. For example, the availability and accessibility of snack foods from the kindergarten stall distracted children from consuming the main meal, and some skipped lunch to eat their favourite snacks.

This chapter describes the snacking patterns of the children including the types of snack foods that they consumed, the places they obtained them from and how they obtained them. The factors that influenced unhealthy snacking in the home environment of these 18 children are also presented. I discuss parents and teachers' perceptions and ideas about young children snacking, which included conflicting perceptions. Adults tried to implement some rules to manage children's snacking; meanwhile the children had their own agency and engaged strategies to obtain their preferred choice of snack. For example the section on snack money explores how children manage their snack choices once their parents give snack money to them and also to understand reasons underlying provision of snack money to children. The last section of the chapter reveals how the snacks industry employs techniques to attract these young customers to their products.

The details of the findings are divided into five sections. The first section describes the snacking patterns of the pre-schoolers in my sample. The second includes the home environment and practices that lead to behaviour that can influence the development of childhood obesity. Section 6.3 presents adults' perceptions and practices regarding their children's snacking. Children's agency and their responses to snacking rules are illustrated in the fourth section. The last section presents strategies that the snacks industry employs which affected the children's snacking behaviours.

6.1 Pre-schoolers' snacking practices

The Bureau of Nutrition's guidelines on food and snack preparation for pre-school children in Thailand recommended that their meals and snacking times include three main meals and a few snack or light meal breaks, because children cannot eat a large amount of food at once (Chittchang, 2012). The kindergartens, complying with national and institutional policies, arranged snacking with milk breaks, in addition to the main meal times. The selection of snacks for the formal snack and milk breaks was made by the kindergarten's catering staff. Only Temple Side Kindergarten take some recommendations from the guidelines for school lunch standard and management promoted by the Department of Health. Although the guidelines suggest that kindergartens prepare snacks for the children including fruit with lower sugar content such as guavas and papayas twice a week and traditional Thai snacks and other snacks three days a week, in reality all three kindergartens allowed the children to bring snacks from home to eat and share with their peers. The children could also buy snacks from the kindergarten snack stall, as discussed in the case of New Market Kindergarten. Only one mother in my sample prepared fruit (peeled and cut oranges in small pieces) for her daughter in addition to kindergarten's snacks. According to my observation, all three kindergartens followed the DoH endorsed guidelines and prepared fruit as a snack twice a week. However, I observed that only four families (with children at New Market and Private Land Kindergartens) made fruit available at home for their children to snack on if they wanted to.

6.1.1 Types of snack that the children consumed

The types of snacks that the children consumed varied depending on the occasion. All the children in the observation ate unhealthy snacks almost every day during their

journey between home and kindergarten. The quantity of unhealthy snacks that the children in my study consumed varied from half to two packets of crisps/extruded corn snack a day; a packet of this type contains approximately 190 kcal. This finding is supported by the National Health Examination and Survey in 2008-9 (National Health Examination Survey Network, 2010) which reported that 50% of children aged two to five ate crisps or extruded snacks every day or almost every day. Few families offered healthy snacks, especially fruit such as oranges, to their children as snacks. This also depended on the children's preferences and the convenience of preparation for the parents.

The scheduled snacking option at kindergarten was planned to deliver a healthy snacks such as seasonal fruit to children at least twice a week, according to the national guidelines. Thai desserts and other snack options such as biscuits and chips were given at Private Land Kindergarten on the other three days of the week. All three kindergartens scheduled a snack time for their children, commonly combined with the afternoon milk break. Figure 6. 1 illustrates examples of snacks and fruits that are served at kindergartens, including my sample. These include banana, papaya, Thai dessert, cream-filled biscuits and chips. Selection of snacks and fruits are according to the plan of each catering service.

Biscuits were the preferred snack choice among children at Temple Side and New Market kindergartens, rather than fruit or Thai desserts. Apart from personal preferences and tastes, I observed that biscuits were a convenient option for young children as they could eat them easily with their fingers, while some fruit required an effort to peel (e.g. baby banana and oranges) and Thai desserts require a spoon. At

Private Land Kindergarten the snacks for a week consisted of fruit on two days, Thai desserts (green beans in syrup, or banana in coconut milk, or white bread in red coloured flavoured syrup topped with ice and condensed milk) on two days and French fries on Fridays, the latter, according to my observation, the most popular with the children; almost all asked for more, and this rarely happened with fruit and Thai desserts.⁵⁵

At all three kindergartens the children were allowed to bring snacks from home to eat at snack time. The options that parents prepared for their children varied, but were predominantly crisps (Lays crisps, which are called Walkers in the UK, both are under the same company called Frito-Lay) and extruded corn snacks, the children's favourites.

The selection of snacks for children depended on the parents and teachers' perceptions and knowledge about such foods.

⁵⁵ Red syrup: Widely known in Thailand as Hale's Blue Boy Brand Flavoured Syrup. A red/green coloured fruity/floral flavoured cordial. This is mixed 1 part to 4 parts water/soda water to get a sweetened/carbonated drink. It can be used as a flavouring in shaved iced deserts.



Baby bananas and papayas (above) are fruit commonly served to children. The usual portion is half or a whole banana, or two pieces of ripened papaya or other seasonal fruit, twice a week



Thai desserts (sago, sweet corn and coconut milk) (one tablespoon), biscuits (1-2 pieces), and 5-7 chips were served three days a week

Figure 6. 1 Examples of snacks provided at kindergartens⁵⁶

6.1.2 Places and ways in which children obtained unhealthy snacks and sweetened drinks

This section presents channels through which children received unhealthy snacks from people in their social circle, starting with kindergarten and the journey home. Observing three kindergartens and following eighteen children, I found that it was easy for the children to get unhealthy snacks on a daily basis and that all of them consumed an unhealthy snack once a day, at kindergarten, on the way home, or at home. Even though there were attempts to control such consumption by the government's health agency (see Chapter 7), teachers and parents, the children found ways to obtain snacks.

⁵⁶ Source of image: <http://www.thailovehealth.com/nutrient/health-73.html>

In this section I present my observations relating to the children's actions to get unhealthy snacks from people around them and the channels that they used to get access to unhealthy snacks. Places and actors (gatekeepers to snack consumption) that support children accessing unhealthy snacks can be illustrated through a child's daily journey from kindergarten to home. Figure 6. 2 summarises these channels and details where and how the children obtained unhealthy snacks. Channels that children can access to unhealthy snacks at kindergartens include snacks stalls at kindergartens, receiving snacks as rewards from teachers or gifts from peers. On the way to home, snack stalls nearby kindergartens, convenience stores on the way and snacks in cars are main sources of unhealthy snacks available for children. At home, parents manage snack storage, some would give snack money to children, and getting snacks through other family members including siblings are pre-schoolers' snacking sources.

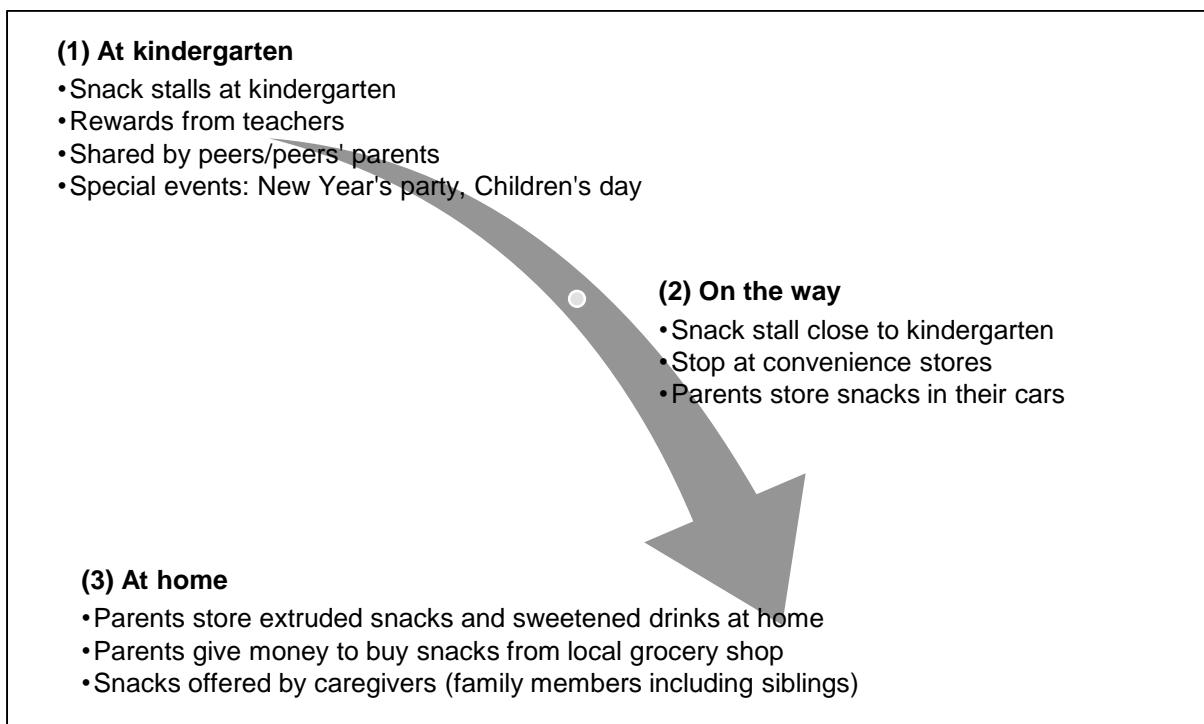


Figure 6. 2 Summary of channels through which a child can obtain snacks from school to home

(1) At kindergarten

At kindergarten the children had unhealthy snacks on many occasions and from a multitude of sources. These included bringing them from home, being given them by peers or adults and buying them from the kindergarten snack stall. The latter was the established channel for access to snacks at kindergartens.

New Market and Temple Side kindergartens had such stalls with different policies and regulations to control the children's purchase of snacks. Temple Side Kindergarten had one small stall run by catering staff on the premises, but teachers told me that younger children aged 3-4 attending level 1 were not allowed to buy. However, I observed that a few younger children with cash managed to buy snacks from the stall at lunchtime. Furthermore, older siblings and friends sometimes shared their snacks with younger ones. At New Market Kindergarten the snack stalls were bigger and were owned by the school owner. Snack stalls were also available to children of all age groups in the morning, at lunchtime and in the evening, after the kindergartens closed.

After kindergarten while waiting for their parents, on the way home and at home were three common snacking times for pre-schoolers. At these times they were likely to have the power to make snacking choices (some had more power than others as they had snack money). Snacking after lunch or after kindergarten finished, when the children were allowed to buy or eat snacks brought from home, was harder to control, especially where there were snack stalls in and around the kindergarten. In such an environment most parents gave about 20 THB to their children for snacks (discussed in Section 6.2.4). The selection of snack choices at these times depended on agreements between parents and children and availability at the kindergarten snack

stalls. Figure 6. 3 shows the snack stall at New Market Kindergarten. The left picture is an evening snack stall with deep-fried chicken (the children's favourite), fried meatballs and sausages. The right picture presents morning snack stall offering spaghetti or rice porridge for breakfast and snacks including small packets of extruded snacks made from potato or corn. A sweetened drink (made with red coloured flavoured syrup) and other carbonated drinks were available at both the morning and the afternoon stalls.



Figure 6. 3 Kindergarten snack stall

The sellers found providing fresh fruit at their kindergarten snack stalls difficult. They informed me that it was difficult to find fruit that the children preferred to other snacks and to prepare and store it, as fruit lasts no more than a day once peeled and cut. Additionally, fruit was usually offered free of charge twice a week with lunch. I observed that the New Market Kindergarten stall offered ripe mangoes cut into small pieces that did not look attractive.

Apart from the established channels for obtaining snacks such as kindergarten snack stalls, children also received unhealthy snacks from their peers, as rewards from their

teachers, and at special events. Some brought unhealthy snacks from home and shared them with their peers at kindergarten. Receiving snacks from teachers, peers and peer's parents was another channel. Teachers of all three kindergartens used sweets and crisps to reward children when they answer questions in classrooms. Sharing snacks with peers was popular at the kindergartens. For the children this was a way to socialise and learn to share what they had. Tutor, whose mother had good control over him eating unhealthy snacks and sweets, enjoyed them very much when his friends brought and shared them at kindergarten. I also observed children being given snacks by other children's parents.

Although a basic afternoon snack was provided by the kindergarten kitchen, I observed at Private Land Kindergarten that parents prepared additional snacks for their kids with spares for the whole class. I saw some parents bring snacks such as Oreo cookies or ice cream for their kids when they picked them up from school. This was tempting for other kids, who would look at these snacks with sparkling eyes. Sometimes parents brought extra portions to share with their children's peers. (Observation, May 2014)

During the summer the parents of children attending kindergarten during the long vacation must prepare milk or fruit juice and snacks for their children. Observing at New Market Kindergarten during the summer I saw that all parents prepared snacks such as crisps, chocolate, jelly, and extruded corn and rice snacks.

Analysing my data using EST enables me to identify factors in the macro- and exosystems relating to snack consumption. These are the DoH guidelines and kindergarten policies on the management of snacking, which support fruit as a snack

at kindergartens twice a week; the kindergarten environment, for example whether the kindergarten has its own snack stall for children to purchase snacks from; and the commercial environment surrounding kindergartens. Considering the kindergarten as an exosystem institution in the EST, data from this section highlight kindergartens' conflicting roles. First, the kindergarten as an institution is supposed to model healthy eating practices and implement government policies to support healthy snacking. However, the institution wants to implement interventions in response to its own policy (e.g. pleasing children/parents or profiting from selling snacks). It is clear to me that without shared values informing the macro-level policy promoting healthy eating and the exo-level policy promoted by kindergarten directors and teachers, it is unlikely that promotion of healthy eating interventions will produce successful results.

(2) On the way home from kindergarten

After picking their children up from kindergarten in the evening, all families, regardless of socio-economic status, provided a snack for them, bought from stalls in or around the kindergarten, from a convenience store or supermarket on the way home, or waiting in their private car.

When Pearl (three-year-old girl, obese, Private Land Kindergarten) gets into the family car [after playtime], she asks for a snack. Sometimes the parents stop to buy a snack for her from the convenience store, but most of the time they have one ready in the car so that they do not have to stop on the way home. Snacks that Pearl likes include jelly, biscuits and chocolates. (Observation, June 2014)

Many families used convenience stores for their children's breakfasts and some dinners. A huge variety of unhealthy snacks is offered at stores in the area that the children can easily spot. This can motivate them to demand such snacks and sugary drinks. Some parents admitted that they did not like stopping at convenience stores because their children usually made trouble negotiating for toys and sweets, which were commonly items that the parents restricted.

(3) *At home*

According to observation at their homes, 15 of the 16 families kept unhealthy snacks and sweetened drinks at home for their children. When the children, especially those who did not stop to buy snacks coming back from kindergarten, arrived home they all had a snack. This was also true of families sending children to Private Land Kindergarten, even though these children usually ate an evening meal before their parents collected them. On my visit to Neutron's family, as Neutron and his older sister arrived home I observed that there were biscuits and ice cream available for them in the cupboard and refrigerator in the dining room. The children knew where they could find the snacks and sweetened drinks they preferred. The boy did not eat dinner at home because he had already eaten at kindergarten. After he had eaten flavoured shredded dried pork without rice as a light meal with his mother and sister. Neutron asked his mother, '*I want chocolate ice cream, do we have chocolate ice cream?*' His mother checked the freezer and pulled a vanilla ice cream out, handing to Neutron, saying '*No, we ran out of chocolate ice cream; this is the last one*'. Neutron took the ice cream from his mother, mumbling about chocolate ice cream as he ate it (Observation, June 2014).

I observed that giving the children snacks was common to all the parents and family members in this study of 16 families with 18 children. The children saw snacks and drinks as routine. For example, Tam's and Nid's routine on their return home involved drinking iced tea from their bottles in front of the TV.

On their arrival home Tam and Nid (three-year-old boys of obese and normal weight, Temple Side Kindergarten) were told to take a shower. They then picked up their baby bottles filled with iced tea to drink while watching TV. '*This is their routine*' said the grandmother. (Observation, April, 2014)

Apart from parents, other family members can also be important actors involved in pre-schoolers' access to unhealthy snacks. Pre-schoolers living in an extended family or with older siblings were likely to have a better opportunities to access unhealthy snacks and sweetened drinks.

The residential areas where the families of both high and low socio-economic status lived provide easy access to unhealthy snacks. They are surrounded by convenience stores and groceries that sell unhealthy snacks and sweetened drinks. The shops are less than a five-minute walk away for young children, who can also be driven by families with cars. Some children were allowed to walk to the shops in their community area by themselves or to go out to a mobile snack stall that stopped by their house (as in the cases of Bright and Jan attending Temple Side Kindergarten); the neighbours know one another well and the shops are close enough for parents to watch their children. In other cases children persuaded their parents, other family members or even me to accompany them to the shop and buy the snacks they wanted, such as

crisps and extruded-corn snacks. Such stores were also available on the way from kindergartens to homes. I found that the physical environment of residential area, e.g. the location of a shop not far from the house (100 metres), a familiar shopkeeper who was very helpful and keen to offer the children unhealthy snacks in child-friendly small affordable packets and who knew each child's favourite snack, was very supportive of children consuming unhealthy snacks.

Parents and family members can be role models for healthy snacking at home by having routine snacking—arranging times for snacking and choosing healthy snacks. The organisation of the home environment, e.g. whether parents make healthy snacks available and accessible to children or keep carbonated drinks and unhealthy snacks at home, play an important role in constructing children's snacking practices. Patrick and Nicklas (2005) reviewed children's eating patterns and described the availability and accessibility of fruit and vegetables as one of key factors affecting children's consumption. They described 'availability' as healthy snack choices such as fruit being made available at home and 'accessibility' as the healthy snack being offered in a form that encourages children to eat it, such as peeling and cutting up fruit.

Some families tried to adjust the structure of their snack provision by offering fruit as an option to their children. Examples are Aim's mother, who made seasonal fruit such as bananas available on a small table that everyone, including her son, could reach when they wanted a snack. However, I did not see Aim take any fruit during my visit; he took only a bottle of sweetened drinking yogurt.

I observed that Liz usually brings a box of fresh orange (peeled and cut into small pieces) to eat as her snack at kindergarten. Her father explained that the

girl does not like fruit and vegetables and the types of fruit that she could eat, one of which is oranges, are very limited. Even though it is a specific type of imported orange the father said they have to look for it and prepare it for her. (Observation, May 2014)

On my second visit to the family Liz's grandmother was at home and was busy preparing mangoes for everyone, including Liz, but the girl refused to eat any saying '*No, I don't like it*'. (Observation, June 2014)

I found that healthy snacks are more expensive and time-consuming to prepare and to persuade children to eat than unhealthy snacks, which are readily available at convenience stores, well-packed and easy to store, and which are preferred by the children. As illustrated in Section 6.1.2, most of the households I visited made unhealthy snacks widely available and easily accessible to the children. This is in line with a review of qualitative studies from various settings by Krølner et al. (2011) confirming that the availability of alternative unhealthy snacks is one of the factors preventing children from eating fruit.

6.1.3 Rules used by adults to control unhealthy snack consumption

In reality, few parents encouraged their children to eat snacks as they encouraged them to eat main meals and drink milk. On the contrary snacks, especially unhealthy options such as crisps and sweets, were perceived by the children as a treat they preferred to their meals and milk. Parents showed their concern about their children snacking with regard to a variety of factors ranging from dental problems to the habit of buying snacks for their promotional toys. Perceiving that snacks are not good for

children and can prevent them eating their main meals, parents tried to make rules to control this.

Parents' common ways of controlling their children's consumption of unhealthy snacks included prohibiting certain types of snacks, especially sweets; limiting the amount of money they gave their children or the snacks they ate to not more than two packets of crisps a day; limiting their access to snacks by not taking them to shops; and conditional snacking, with children having to finish their meal before being allowed snacks.

Parents implemented snacking rules when together with their children at home or going out. Home is a space where children can exercise their power more than at kindergarten or in other public places. Although the parents tried their best to regulate their children's snacking it was very difficult to control all aspects of this and most chose to control only the parts they perceived as particularly problematic such as eating sweets, which can cause dental problems. Sand's mother limited both the type and the amount of snacks that her son could consume:

We have a rule about buying snacks when we go to a supermarket together.

The kids can buy one or two packets each depending on how often the family goes shopping...I've taught the kids that sweets are not good for their teeth.

When Sand chooses snacks from a store he asks whether they are acceptable.

I let them have crisps and extruded snacks, but not too much, about one or two small packets a day. (Interview of Sand's mother, January 2014)

Unlike snacking at kindergarten, snacking at home was arranged without protocols (routine or structure) such as specific times or planned options to balance their dietary intake, as at kindergarten. Snacking at home aimed to treat the children after their long day at kindergarten and to prevent them getting hungry. Reflections from Sand's mother illustrated the conflicting values of the mother ensuring that her child is not hungry and a balanced nutritional intake.

'We have to pressure them a bit [controlling the amount of snacks the children can eat per day] otherwise they fill their tummies with snacks. I understand that they are very hungry after school'. (Interview of Sand's mother, January 2014)

According to my observations and interviews with parents, their implementation of these rules was not always successful. It depended on many factors that shape the children's snacking practices; for example their characteristics and home environment. Their perceptions of children's snacking and snack management (selection of snacks, quantity of snacks, and negotiating snacking with children, for example) also played an important role in their snack arrangements.

While limited amounts of healthy snacks such as fresh fruit are provided for children both at kindergarten and at home, I found that the children in my study had easy access to various types of snacks and sweetened drinks on a daily basis, despite the parents' rules to control their consumption of unhealthy snacks. On the whole, children's snacking was perceived by both adults and children as routine. This affected how parents set the rules and shaped their negotiations around snacking with their children. Other factors, which I present in the next section, also influenced the children's selection and consumption of unhealthy snacks.

6.2 Other factors leading to the consumption of unhealthy snacks

In addition to pre-schoolers' easy access to unhealthy snacks other factors influenced their consumption in my study. These included the child's character, parents' socio-economic status, family rituals, specifically stopping and spending time at convenience stores or supermarkets together, and children receiving money for snacks.

6.2.1 Children's character: difficult eaters have better access to unhealthy snacks

A review by Bergmeier et al. (2014) found a correlation between traits of poor self-regulation, distress at limitation, low and high soothability, low negative affectivity and high BMI in pre-schoolers, adding that children's temperament is associated with how their parents feed them and their weight status. For example, the use of a restrictive feeding strategy with a child with poor self-regulation tends to increase the likelihood that the child will become overweight or obese. This is confirmed by an experimental study by Rollins et al. (2014), who found that strategies of restriction are not successful in reducing children's weight and may actually increase their intake of restricted items and their BMI. This especially happens among children who had lower inhibitory control—'a child's reduced ability to plan and suppress inappropriate approach responses under instructions to do so' (p.31). I have not found a study examining the relationship between the weight of pre-schoolers who are difficult eaters and their parents' feeding strategies.

In this study I found that children's character influenced how parents managed their snacks. Some of the children were defined as 'difficult eaters' by their parents and teachers, who usually refused to eat their meals and drink their milk at kindergarten

and at home. They were underweight or of normal weight. Parents adapted their feeding practices and offered food and snacks that the children would eat including sweets, pastries, fries and extruded snacks because they ate very little and their parents did not want them to go hungry or not have enough energy for their daily activities. Consuming even a small amount of energy or nutrition was acceptable for these parents. Giving children a snack instead of a meal however, can result in trading nutrition for ‘eating’.

Jan (four-year-old girl, normal weight, Temple Side Kindergarten) was defined by her parents and teachers as a difficult eater. She always refused to eat lunch at kindergarten or at home. Her mother confirmed that Jan and her sister would only eat non-vegetable dishes such as grilled or fried chicken, sticky rice, sausages and rice porridge. *‘It is difficult to get her to eat any main meals. She just loves to have snacks like crisps, extruded snacks, sweets and smoothies [chocolate or bubble milk tea—see Section 6.5.2]’* her mother explained. The mother was concerned about her daughter’s eating habits and worried that she might not be getting enough nutrition, and therefore she bought a multivitamin supplement syrup for Jan to take.

The mother of Tintin (three-year-old boy attending Private Land Kindergarten) encouraged him to eat the snacks and biscuits she put on the dining table. She also kept other snacks in the house, making them easily accessible for him. Tintin liked the small biscuits that are available in many shapes very much, although he ate very few of them. He showed his preference for a fish-shaped biscuit and his mother picked these from a variety of shapes to offer to the boy. She told me *‘I do not limit the food or snacks that Tintin eats...he is so picky and eats very little...I just hope he will eat*

anything...you can see he is underweight...his doctor also told me so'. Tintin ate two spoonfuls of his mother's dinner and went to play with his toys. She added 'His favourite snack is doughnuts. He first saw the doughnut shop and the doughnuts on display when he went to Tesco Lotus [hypermarket] with me and then he became a fan'. However, the mother said that even if it is his favourite he does not eat many: a maximum of two. (Observation, August 2014)

Such provision of snacks to encourage children to eat at least something resulted in substituting unhealthy snacks for the main meal. This may not result directly in the development of childhood obesity through overconsumption but it can affect the quality of the energy that children consume: instead of consuming a main meal with balanced nutrition a child may be filled with energy-dense snacks and may not receive the daily nutritional requirements. A child can develop the habit of eating unhealthy or energy-dense snacks in the long run.

My findings suggest a new area for investigation: the consumption of nutrition by children with difficult eating behaviour, the feeding strategies of their parents; and changes in their weight and health status. H. R. Clark et al. (2007) suggest that at the policy level there should be guidelines and information about the possible consequences of inappropriate feeding behaviour for parents concerned about their child's weight. My findings suggest that such information should cover children who are picky eaters and underweight or normal weight.

6.2.2 Family wealth: Management of children's snacks on a limited budget

Some families' budget was another element in the management of children's snacks at home. All of the families, regardless of economic background, managed to provide regular snacks for their children. Households in the lower socio-economic group found ways of creating snacks on their limited budget; for example they replaced the green tea drink with a red cordial and bought extruded snacks in bulk to reduce costs.

The grandfather of Bright (four-year-old boy, overweight, Temple Side Kindergarten) explained that normally when he was to pick the boy up from kindergarten he would prepare small packets of crisps or extruded corn snacks at home and put red cordial drinks in bottles and put them in the refrigerator to make it unnecessary for the boy to stop at the 7-eleven on the way home. (Observation, April 2014).

Parents in the higher socio-economic group using a kindergarten that provided all three main meals and two snack breaks still arranged some snacks for their children. The findings from this group showed that additional snacks, for example birthday cakes, were provided at kindergarten.⁵⁷ Souvenir snacks that children brought back from holiday trips were common at Private Land Kindergarten but not among the lower and middle economic groups. Birthday and souvenir snacks were offered to the children about one or two days a week during my observation.

⁵⁷ Having a birthday cake is not part of Thai traditional culture. This is a Western affectation that was adopted initially by people from higher socio-economic groups and, more recently, has become popular among all parts of Thai society.

6.2.3 Family rituals: Stopping by convenience stores or supermarkets

After the long day at kindergarten, stopping by a convenience store or supermarket on the way home was found to be a relaxing activity for many families across all socio-economic backgrounds. All families visited these stores on the way home on one to three days a week. Five households reported that they stopped at these stores every day even if they did not buy anything; it was their routine way of spending time together, as in the case of Jan and her sister.

'She just loves to have snacks like crisps, extruded corn or potato snacks crispy snacks (ka-nom krup-krop), sweets and chocolate smoothies' said Jan's mother. Jan insisted on stopping at a 7-Eleven convenience store or a local grocery shop near her house every day. Her mother told me that sometimes they bought nothing: they just had to stop at the place to make the girl happy.
(Observation, May 2014)

This family ritual celebrating moments as a nuclear family, even while living in an extended family, was also observed in the case of Neutron's family. Neutron's mother explained that her family stopped at the 7-Eleven convenience store on a small road by the entrance to their house every Friday before travelling to 'their house' where they spent their weekends. On weekdays the family stayed at the grandparents' house to be close to Private Land Kindergarten and the parent's workplaces. One of the reasons that the parents initially stopped at this convenience store was to buy groceries, but the stop then became a ritual. Stopping at a convenience store to buy some snacks was a joyful moment for the children and a relaxing time for the parents before they went on to spend time as a small family unit over the weekend.

We have to stop at the 7-Eleven every Friday, and when we stop there, the main target for the kids is sweets. I have to limit the amount they eat, otherwise they would have a lot of sweets. I do worry about dental problems because Jane (Neutron's eight-year-old sister) had a problem and now has a dental crown. So I have to control Neutron's sweet intake. (Interview of Neutron's mother, June 2014)

This illustrates how stopping at a convenience store, which involved taking the children into environment with unhealthy snacks, is attached to another social value, family bonding, and is not purely about entering the store to buy, or not buy, snacks. Even though some parents expressed concern and regulated their children's purchases at such shops, many children in my study managed to negotiate for their preferred items; for instance Aim chose to buy a sweetened yoghurt drink rather than the sweets prohibited by his mother, and Tuinui and Pearl ended up buying unhealthy snacks rather than the toys that their mothers would not let them have. (Observation, June, 2014)

6.2.4 Provision of snack money

All of the six children who attended New Market Kindergarten in my sample were allowed to buy snacks from the kindergarten snack stall with their daily snack money of about 20 THB. At Temple Side Kindergarten some children received very small sums of 5-10 THB (0.10-0.20 GBP), which buys a portion of steamed rice or a glass of carbonated drink, but not on a regular basis. Private Land Kindergarten, the kindergarten used by families of high socio-economic status, was the only

kindergarten in my study that did not have a snack stall for the children. The kindergarten owner explained:

I am trying to set a standard for food consumption for these kids. I provide everything [three meals and snacks] here. Kids these days usually go to a mall for tutoring, and that's where they get bad food and junk food. Here I can manage the environment and offer them good food (interview of kindergarten's owner, April 2014).

He showed his views and beliefs about constructing and controlling the children's food environment and made only what he saw as good choices available to the children. None of children in this kindergarten had a daily allowance with the power to make their own choices.

The provision of snack money to young children was observed in the group of children who went to the two kindergartens with snack stalls, New Market and Temple Side Kindergartens. It suggests that the provision of snack money did not depend on the socio-economic status of the family but on the environment and norms, as illustrated in this study. Children from the wealthiest group did not bring money to kindergarten because the kindergarten's policy was not to have a snack stall, while the middle and the lower socio-economic groups took different average amounts of money. The difference between the 10 THB that the children at Temple Side Kindergarten took in with them and the 20THB of the New Market Kindergarten pupils may reflect their socio-economic status or New Market Kindergarten's bigger snack stall with a wider variety of snacks.

Parents who gave snack money to their children worried that their children might get hungry⁵⁸ or not have enough food for lunch, so the snack money enabled them to get something to eat. Some parents gave snack money as well as preparing additional snacks for their children to take to kindergarten. The amount of money increased with the children's age as well as with reference to their peers. Parents talked to each other and sometimes asked their children how much their friends received as a daily allowance. Pre-schoolers from Temple Side and New Market kindergartens received 5-30 THB (0.10-0.60 GBP) as daily snack money.

Tuinui receives a daily allowance of snack money of 15 THB (0.12 GBP). According to her mother this money is for her to buy snacks to fill her up, as she is shy about asking for more food at lunchtime. After Tuinui's swimming lesson the mother always bring snacks including fruit juice, a carbonated drink, a chocolate smoothie, fried fish balls, sausages and extruded snacks for her to eat after exercising as well what the girl buys with her daily snack money. This is common practice; I observed that other parents waiting for their children after the swimming lesson had also brought snacks for their children. (Observation, July 2014)

Snack money is a powerful tool given to children to help them manage their snack consumption themselves. It can lead to their eating less of their main meals and more snacks, depending on the children's prioritisation and management. Aye (five-year-old, normal weight, New Market Kindergarten), who loved the deep-fried chicken sold by the school snack stall, is a good example. The boy never finished his main meal

⁵⁸ This responded to the values of food and child-rearing in Thailand—food is important especially in the area of child-rearing. Thai people always make sure their guests and family members have food and not being hungry. This is reflected through how Thai people greet one another. ‘Have you had rice?’ is a common greeting between Thais.

but at up a big piece of deep-fried chicken every day. (Observation, December 2013).

Children had their ways of managing their daily allowance. Most spent it all at the kindergarten snack stall. For example Ice, (five-year-old girl, normal weight, New Market Kindergarten), received a daily allowance of 10 THB (0.20 GBP) and mostly spent this amount on chips and fried chicken from the kindergarten snack stall (Observation, January 2014).

Some children managed to save their money or kept it to spend at other shops on snacks they liked, especially when the kindergarten stall did not sell their favourites. The mother of Sand (five-year old boy, normal weight, New Market Kindergarten) described during an interview how her son sometimes did not buy snacks from the kindergarten snack stall as he did not find them tasty. Instead he kept the money to spend at grocery shops near his house. This example confirms that snack money is a powerful tool for children. They can use their purchasing power to select the shops that offer the snacks they prefer. The kindergarten environment played a part in their snack consumption through the kindergarten snack stall. However, this does not mean that children at a kindergarten without a snack stall always avoided unhealthy snacks. Even if a kindergarten does not make a snack stall available or sells only healthy snacks such as less-sweet fruit, a child may or may not purchase what is on offer since they can spend their money elsewhere, for example at a mobile snack stall outside the kindergarten or a shop next to their house. Furthermore, the findings discussed in Section 1 suggest that there is a wide range of channels through which pre-schoolers can easily access unhealthy snacks.

Only a limited number of studies touch on the topic of snack money given to pre-school children, leaving a gap in understanding both the reasons behind its provision and its effects on child-rearing and ultimately on the children's health. This is partly because in many settings pre-school children rarely receive pocket money due to their kindergarten not allowing such a practice, but this is not the case in Thailand. In my study the parents of pre-schoolers in selective kindergarten environments (Temple Side and New Market Kindergartens) gave their children money to buy snacks. This is specific to the Thai context where children of pre-school age receive such money for snacks. Most studies about snack money have been performed among primary school students or adolescents. A number of cross-sectional studies of school students aged 6-18 seeking an association between pocket money and obesity using BMI as a proxy, have found that pocket money is a significant predictor of overweight and obesity among schoolchildren in many settings, including Chicago (Wang et al., 2009; Wang et al., 2007), Jordan (Khader et al., 2009), Kashmir (Vaida, 2013), Chennai (Punitha et al., 2014), and Egypt (Taha & Marawan, 2015).

My study explains the reasons behind parents giving snack money to their pre-schoolers. They see such money as a pot to spend when their children do not have enough food and this ensure children are not left hungry during the day when they are away from their parents care. This suggests parents' uncertainty or mistrust towards the kindergartens to which they send their children. The evidence points to the social environment at kindergartens influencing how snack money is arranged; for instance children negotiated with their parents for more snack money once they learned how much their peers, especially older children, received. This is illustrated in the case of Sand's and Neutron's older sisters:

Sand and his sister received 20 and 30 THB daily allowance respectively. Sand's sister negotiated for more with her parents, who guessed that she was comparing her allowance to that of her friends, who in some cases received up to 60 THB per day. I observed that Sand was already getting a large amount of snack money compared to his peers. (Interview of Sand's mother, January 2014)

Jane did not get pocket money when she was at Private Land Kindergarten, but now she gets 60 baht a day [at primary school]. She used to get 20 baht and 40 baht when she was in 1st and 2nd grades. At that time she did not spend much, always had some money left...but now, in 3rd grade, she spends all her pocket money every day [on snacks] and even asks for more. She learned it from her friends. (Interview of Neutron's mother, June 2014)

In the next section I explore adults' perceptions that underpin their provision of snacks and sweetened drinks for their children.

6.3 Adults' perception and practices regarding their children's snacking

The adults' underpinning values and information were reflected in their actions in relation to snacking policy and practices. This section illustrates the values , regarding pre-schoolers' snacking of individual adults such as teachers and other adults, parents and other family members who were close to the children, and how they expressed them in practice. I present three main values influencing snacking practices arranged by adults for children under their care: snacks as a treat or as reward; snack is a treat, so let the child make a choice; and it is adults' duty to give children snacks routinely.

6.3.1 Snacks as a treat or a reward

Apart from providing snacks between meals to prevent children being hungry, snacks were perceived as a treat for children both on a daily basis and on special occasions. Going to kindergarten was perceived by parents as children's daily task and that they were sent away from home for hours to fulfil this educational task. Thus when the children came home from kindergarten they should be treated. '*Are you hungry?*' was one of common questions that parents asked their children when they got home, suggesting that this is a point when parents are keen to resume their caring role after leaving the child at kindergarten.

In general, parents tried to respond to their children's requests, especially when the request involved food (in their carers' role, to express love for the children, and to make sure they were not hungry). Selecting snacks that the children preferred was a treat that parents thought they could allow without much interference. Even though they implemented some rules to control children's snacking, a level of freedom was observed in this area.

Parents in this study reflected that purchasing snacks as a daily treat for children, even if they knew them to be unhealthy, was better than buying them more toys, which cost more and which they perceived as 'useless'. Many parents emphasised that their children had already had a lot of toys at home.

Yes, we stop by the 7-Eleven almost every day...but I didn't really want her to stop...she always cried and begged for toys there, you know, they were expensive and not useful. So I told her that she already had some of them at

home. ... When it comes to snacks, I do not control her, she can get anything she wants. (Interview of Tuinui's mother, July 2014).

Providing children with snacks was a way for parents to express their love by giving them things that they enjoyed at a reasonable cost and with the perceived benefit of energy and nutrients.

At his grandmother's house Dang would be fed with more snacks than his grandmother prepared for him. Arriving at her house, Dang went to the kitchen and made himself a bottle of water with red cordial (considering the strong colour of the drink, I assumed he must have added quite a lot of the red coloured flavoured syrup). The grandmother explained that she usually prepared snacks for Dang after he gets backs from kindergarten – the red cordial and slices of bread topped with condensed milk: '*[the drink] must be sweet, he likes it sweet*', she explained. (Observation, May 2014)

Even at Private Land Kindergarten's Friday scheduled milk break, when chips were served with the milk, the kindergarten owner informed me that the chips were a treat for the children that he wanted to give them once a week. On special occasions I observed that all three kindergartens in my sample used snacks as a reward to appreciate children's achievements, such as sweets in the classroom when children answered the teachers' questions or behaved well.

6.3.2 *It's a treat, let the child choose*

Of the treats that the children received on a daily basis, crisps, extruded corn snacks and other deep-fried snacks (e.g. chips and chicken nugget) were what they most

preferred. The parents wanted to give them snacks that the children would be happy to consume and were within their budget, easy to obtain and not perceived to be harmful to their children. Parents did not try to force children to eat them or make as much effort as they did with milk and main meals to make them consume what they thought was good for them.

Some parents were concerned about sweets, which they acknowledged to cause dental caries; the gas in carbonated drinks, which was believed to cause stomach-ache, and the re-use of cooking oil for frying food, which was believed to cause cancer.

I am quite careful about food. My mom [Aim's grandmother] was diagnosed with cancer, so I am careful with the food we eat. For example, I do not reuse cooking oil when cooking fried dishes for Aim, and I also try to reduce the amount of oil used in the food. (Interview of Aim's mother, May 2014)

Kao and April drink Coca-Cola and the fridge was full of this drink. Their mother explained '*Their father likes to drink Coke and that sort of drink every day so it is impossible not to let [the children] copy their father, but I keep telling them that fizzy drinks will give them stomach-ache because there is a lot of gas.*

(Interview of Kao's and April's mother, June 2014)

Once Neutron's friend gave him a lollipop,⁵⁹ the sort you have to keep in your mouth for a long while until it dissolves. Neo showed me the lollipop; I suddenly threw it in the bin and reminded him that I had told him not to eat this sort of

⁵⁹ Lollipop in Thai is *Om Yim*, which means "keep in the mouth and smile".

sweet as it would create tooth decay, and if I say no, I really mean it. (Interview of Neutron's mother, July 2014)

The only snack that parents in the high and middle socio-economic groups (six and three families respectively) forbade their children to consume was sweets. Families from the lower socio-economic group expressed concern about their economic capacity to provide the snacks their children wanted, and some parents adjusted their snack options to their budget.

The mother of Jan (four-year-old girl, normal weight, Temple Side Kindergarten) expressed her concern that her parents [Jan's grandparents] wanted her to stay at home rather than looking for a job, to help her brother raise his new-born baby. She complained to me that the small amount of money that her father gave her each day (100 THB⁶⁰ or 2 GBP), as a compensation for her to quit her job to babysit her brother's baby, was not enough even for her to take her two daughters to buy snacks from convenience stores. (Observation, August 2014)

It is common for children to consume snacks, and the adults in my sample felt that these should be something that the children liked. In this way snacks are viewed as a treat rather than as a small amount of food to fill the children's stomachs between main meals, as the DoH's guidelines propose. Teachers and parents held similar views on snacks for children:

A teacher at New Market Kindergarten once told me '*Grace (three-year-old girl) does not like the bread that her mother has prepared for her [as today's snack]; she prefers crisps like her friends*'. (Observation, December 2013)

⁶⁰ The minimum daily wage is 300THB or 6GBP across Thailand.

When choosing snacks, adults make decisions depending on the occasion and their position and knowledge. On the festive occasion described below, the leading consideration is the intention to make children happy by offering treats that the adults believe them to like. The choice of food and snacks by the municipal staff (in this case) for the children did not include concern about the nutritional content as this was felt to be less important at festive events such as Children's Day, when unhealthy snacks were given as treats. There was an occasion when some children from Temple Side Kindergarten were taken to the zoo. Municipal staff prepared extruded snacks (with a 'strong flavour', as a member of the nursery staff, who tasted the snack before giving it to the children, told me), a small packet of sugar-coated cereal, a small carton of sweetened milk and a small bottle of water (Observation, August 2014). Adults who are not the main caregivers give this kind of treat on special occasions; the fact that they do not happen regularly is usually an argument for providing such treats on such occasions.

At Temple Side Kindergarten, municipal officers and other adults influenced children's snacking practices. This was observed on special occasions such as Children's Day and New Year's Day. The municipal officers also saw snacks as a treat for the children. This may partly have been because the events that I observed were special events that happened only once a semester, and may explain why even the municipal officers treated children in special ways.

On Children's Day [the second Saturday in January] the municipal area was full of colourful booths offering a range of children's games, e.g. a ball pit and

slides, and free food stalls selling ice cream, popcorn, chips, fried sausages, crispy snacks and sweets. (Observation, January 2014)

The event was organised by the municipality with donations of games, toys, and snacks from many (mostly business) organisations. These reflected views of adults towards items that adults thought would please the children on their special day. Parents who brought their children to this event were very relaxed about their children's requests and I did not observe any trying to control their children's consumption.

Finally, parents chose unhealthy snacks for children because children like them and they are easy to buy, prepare and store. Although dried fruit may fit the criterion of easy to store, it is rarely seen as a snack for children in Thailand due to its cost relative to fresh fruit. In addition, I have never observed that dried fruit was advertised as a snack food for children in Thailand. This could be an area for further investigation, to develop plan to promote healthy snack options for children.

6.3.3 It is adults' duty to provide snacks for children routinely

Children in my sample snack frequently (two times minimum), and adults in my study also reflected it is their responsibility to provide snacks for them to prevent them from being hungry and to bring them happiness with a daily treat. Some adults showed feelings of guilt when they failed to deliver treats to children in their care. Figure 6.4 shows examples of extruded corn and potato snacks and biscuits in 5-litre containers, a cheap snack option that teachers at Temple Side Kindergarten manage to offer to children. This action of seeking for snacks under teachers' own budget limitation

happened, when the catering service did not deliver afternoon snacks for the children at Temple Side Kindergarten and the catering team could not provide them, which happened frequently, the teachers would show their sense of responsibility for the children by arranging their snack themselves (Interview of teachers, April 2014).

[Teachers] use their own money to get affordable extruded corn and potato snacks for the children to have with milk in the afternoon break. (Observation, April 2014) (See Figure 6. 4) Teachers usually purchase extruded corn and potato snacks in bulk, which are cheap (150 THB or 3 GBP per 5-litre-container) and the children enjoy these. Some days they receive snacks donated by the municipality or parents. Lay's crisps are the children's favourite snack. (Observation, January 2014)



Figure 6. 4 Examples of cheap extruded corn and potato snacks and biscuits in 5-litre containers⁶¹

This led to the selection of unhealthy snacks such as extruded corn or potato snacks to serve to children due to cost and convenience, as suggested by a teacher:

⁶¹ Source of image: http://number1money.blogspot.com/2015/08/blog-post_17.html

We bought these snacks using the small budget we have. We used to ask for a small contribution from parents, but they did not like it. These snacks are also easy to store...I usually keep them in my cupboard...just need to keep them away from ants (interview with a teacher, April 2014).

There were also times when teachers managed to get some ready-cut fruit such as watermelon or easy-peel baby bananas from the kindergarten kitchen to offer to children who asked for them during the milk break.

Values that adults, including parents and teachers, have about children snacking, such as believing that snacks should be provided routinely and as a treat for children, influence how they organize children's snacks. As found regarding meal and milk consumption, children played a part in decisions about the selection and consumption of their snacks. Although adults admitted that they knew unhealthy snacks were not beneficial to the children in terms of adding nutrition to their bodies, snacks were still valued as rewards or treats, when thus adults let them choose what they wanted, and to them children going hungry. Some parents even gave children a powerful tool: their snack money gave them the authority to manage their own snacking. Parents' attitudes, behaviour and feeding styles are familial factors affecting children's snacking practices (Patrick & Nicklas, 2005). Parents in my study showed conflicting values regarding providing snacks for their children. On one hand, snacks were perceived as a treats or a rewards for children, aiming to make them happy. On the other hand, they knew that children would choose unhealthy snacks such as sweets or high-energy/salty snacks such as extruded potato snacks and crisps. When a child chose fruit for their snack this was like a bonus for parents.

Kirsten K Davison et al. (2015) has developed a conceptual model of food parenting focusing on snacking and matching parenting style with child snacking practices, drawing on their qualitative research using semi-structured interviews with 60 low-income caregivers and pre-schoolers in Boston. Snacking practices are grouped under four anticipated parenting dimensions, namely autonomy support (using snacks as an opportunity to promote independence and build nutrition's knowledge to a child); structure (organizing the environment and implementing a routine or moderate rules to shape healthy snacking); coercive control (using snacks as a mean of controlling children's behaviour or using power to control their snacking); and permissiveness (no control or monitoring of children's snacking and context-driven provision of snacks). Based on Davison's model I found that coercive control and structure were the most frequent styles among parents in my study. Coercive control included giving snacks to reward behaviour and restricting snacks. Structure included snack planning, routine snacking, and moderate snack rules and limits. The missing dimension (comparing my findings with Davison's) was autonomy support, including encouraging healthy snacks and parents modelling healthy snacking. I found limited examples of structure, e.g. the availability and accessibility of healthy snacks, in households such as those of Aim and Liz, where the mother made fruit available to the children; however, this structure was not accompanied by complementary autonomy support such as encouraging Aim to choose fruit as a snack, although he may observe good modelling from his mother and family members when they chose to snack on fruit, although adults' snack times were not always the same as the children's and so guidance from adults to is needed along with modelling. Davison's model offers comprehensive elements of parental dimensions of snacking and relevant practices that are useful for my analysis, as applied above; it suggests other possible dimensions and practices

that could be developed as recommendations to encourage healthy snacking practices that can be implemented at both household and kindergarten levels.

Data from previous sections have illustrated external structures explained by ST as preconditions for snacking practices. At kindergarten and in the local residential area I observed a number of snack stalls that could easily be accessed by young children, regardless of adults' rules to control their snacking. Other structures that I have presented include the socio-economic status of the parents, rituals been developed among family members including the children, and the culture of providing snack money, a tool that is linked to adults' parenting value ensuring that their children should not go hungry during the day when away from home. Other values embedded in the external structures is the concept of snacks as treats and rewards attached to children's snacking practices which partly shapes how adults negotiate and make decisions about what snacks to select for their children, e.g. chocolates or sweets being used as treat/rewards, while this is not the case with bananas.

I noticed an absence of network of position-practice to support individual parents, teachers, and ultimately children in choosing healthy snacks such as fruit or grains, etc., over unhealthy snacking, given the continuous promotion messages implemented by the Thai Health Promotion Foundation and its network in the mass media. It is likely that such messages and other methods of promotion may not well capture the core values that individuals concern and perceive about snacking. Unhealthy snacks are convenient to get, as they are easy to store and for children to open. In extended families I found that grandparents used snacks to please a child or to show their care for them. Even teachers used unhealthy snacks to reward children.

I also found that peer influences were important in encouraging children to choose unhealthy snacks.

Concerning the internal structures of agents, meanings of snacking have been internalised and positively produced between adults and children, and among children. Parents provide snacks to express their care to their children and make them happy. The action of stopping by convenience store is not only for the purpose of getting access to snacks, it is also an activity of family (family ritual). Among children, snacking involves not only the act of selecting the preferred type of snack and consuming it; I found that snacking is attached to values such as negotiating their socialisation in playgroups. Meanwhile, teachers saw snacking in two different ways: first, snacks are attached to the routine milk and lunch breaks according to the school lunch guidelines, including the provision of less sweet fruit twice a week; however, second, almost all of the teachers used sweets and unhealthy snacks such as crisps and extruded potato snacks to reward children in class or treat them on special occasions. Structures both from the kindergarten as rules and routines and teachers' own experiences as children and parents resulted in two different actions of snacking practices for children.

6.4 Children's actions and perceptions regarding snacking

This section presents how young children acted according to the structure of snacking practices organized by adults. Routine snacks implemented by adults gradually shaped children's ideas and actions regarding snacking. All the children in my sample showed positive responses to snacking and unhealthy snacks, such as smiling or clapping their hands when they were given snacks or money to purchase them. Children from the three kindergartens were excited about discussing their favourite

snacks with me. They could clearly identify the snacks and brands that they liked. Some could even identify shops (or the shopkeeper's name at a local grocery); they could purchase snacks and recall certain snack situations, for example when their teachers had given them sweets as a reward in class for being able to answer questions or participating in class activities. They also knew about the promotional gifts and offers that came with snacks and soft drinks (see Section 6.5.1).

Sand's mother explained: *he mainly buys snacks that include small toys like a robot model, sticker, or cards, not because of the flavor...Sometimes he just wanted to get the toy and threw away the snack...I told him this was not allowed. After that he tried to eat up his snack in order to be able to buy certain snacks with toys.* (Interview of Sand's mother, January 2014)

This shows that children pay attention to promotional messages and engage with the snack and drinks industry's marketing strategies.

In the kindergarten environment, snacks and the promotional toys that were mostly included with corn/potato extruded snacks were used by children as a topic of discussion as well as to socialise with others who had the same promotional toys in the form of collectable cards, swapping and showing their collections to their peers. Some tried to keep up with their friends by getting the same promotional toys. This was found in the older group of five-year-olds. Although I noticed that teachers tried their best to prevent children bringing toys into class – '*If I see anyone bringing toys into the classroom I will keep them, and if you want them back your parents will have to come and talk to me*' (as frequently announced by a class teacher at New Market

Kindergarten)' – the children still managed to bring them in and played with them out of their teachers' sight.

Children learned that they had different power to negotiate for their preferred snacks in both settings, i.e. they had more power to negotiate with their parents at home, although at kindergarten they still managed to avoid food they did not like and to get snacks they liked. Children learned that they could get more snacks when they were at home at the end of the day, so some might not put much effort into getting the snacks they wanted when they were at kindergarten. Strategies that they used to obtain snacks included finishing the task (e.g. eating a main meal) assigned by adults in order to get what they wanted afterwards and negotiating with peers, older siblings (who had better access to snacks) and other adults (e.g. their peer's parents or teachers).

I found that children developed their arguments to support their demand or desire for their favourite snacks:

One evening children were waiting for their parents to pick them up from kindergarten, and some kids who had an allowance bought ice cream and snacks to eat while waiting. Bon (three-year-old girl, normal weight) spoke to me after trying to persuade her friend to share an ice cream with her unsuccessfully) '*I want an ice cream, but my mother won't buy me one*' I asked her '*why not?*' She replied '*my mother told me ice cream isn't good for me* (Mai mee prayode)... (She paused and said quietly) *but I still want to eat it*'.
(Observation, December 2013)

Children also applied strategies to avoid eating snacks that they did not like during kindergarten snack breaks:

One day the afternoon milk was accompanied by bananas. Some kids showed that they did not like bananas and did not want to eat them. However, the teacher announced that everyone must eat the fruit. Mod (five-year-old boy, normal weight) clearly did not like it. I gave a small half of the banana to him and he spent more than five minutes very slowly and gradually biting the fruit. When the teacher announced that snack time was up I heard the sound of something quietly dropping onto the floor. Mod had dropped the banana, and turned to his teacher saying '*Teacher, the banana fell on the floor.*' Thus he managed to escape eating the banana in the end' (Observation, April 2014)

Children get good access with snack money to snacks they prefer, even though parents told me they acknowledged negative effects such as dental caries caused by unhealthy snacks and sweetened drinks. They actually put efforts such as implementing rules to control children's unhealthy snack consumption. This is partly because of their attitudes to their children's snacking, which they see as linked to the children's happiness and something they deserve as a treat, as well as to prevent them from feeling hungry during the day. The pre-schoolers learned that snacking was a routine activity that adults organized for them, as illustrated by the kindergarten routine milk and snack breaks and being given a snack after coming home from kindergarten. Children are also exposed to snack advertisements through channels such as TV viewing, one of factors of the EST's macro-system. This can have a strong influence on individual children's selection of snacks and sweetened drinks. In the next

section I illustrate examples of commercial marketing and advertising that the children in my sample were exposed to and reflected during my investigation.

6.5 Commercial marketing of unhealthy snacks and soft drinks that affect children's perceptions and practices

During my field study I noted that pre-schoolers' consumption of snacks was influenced at the national level by marketing through advertising messages, promotional gifts and the wide availability of unhealthy snacks responding to the busy lifestyle of an urban population. Snack promotions targeted children directly. While milk marketing targeted adult caregivers by sending messages such as 'milk makes children smart', influencing them to purchase these products for their children. National policy included an attempt to control kindergartens' snack stalls on a voluntary basis (see Chapter 7). I observed marketing strategies such as the use of promotional toys to attract young children, and mass media to which children were exposed.

6.5.1 Promotional toys with unhealthy snacks

The promotional toys that came with snacks were one of the strategies that the business sector used to increase their sales. This strategy worked well for attracting young children (Jaichuen & Kunpeuk, 2013). I observed that children brought such toys to play with at kindergarten during breaks, including colourful cards with cartoon characters on them, plastic robot models and collectable stickers (see example in Figure 6.5). Although the teachers announced that children were not allowed to bring toys from home⁶² many still brought them in. The toys were used in groups of close

⁶² Teachers did not allow children to bring toys to kindergartens to prevent possible problems such as fights between the children or the loss of the toys.

friends who shared the same interests and preferences. Children showed their snacks and promotional toys to their peers at kindergarten.

At playtimes, Sand, Flute, and Ben (five-year old boys, New Market Kindergarten) usually stayed together and brought out the promotional cards that they got with packets of extruded corn snacks. They showed their new cards around and talked about the cartoon characters depicted on them. (Observation, January 2014)

Some parents told me that they were unhappy with how their children begged them to buy snacks with promotional toys; however, it was difficult to stop them (see example in Figure 6. 5). Many parents did not control this because they planned to buy snacks for their children anyway, and usually the children were free to choose their preferred snacks. Regardless of the promotional toys included with them, these snacks were available at the same price as snacks without toys. In a few families the parents managed to control such purchases. For example, Sand and his sister were not allowed to buy snacks for the sake of their promotional toys and had to eat the snacks that they bought. Figure 6.5 shows an example of promotional toys that are offered with extruded snacks; these usually contain famous cartoon characters and are collectible items which children can exchange among peers.



Figure 6. 5 Example of promotional toys offered with extruded snacks⁶³

This section illustrates how manufacturers of unhealthy snack products created value for them that made their consumption about more than just the snack itself. An example is the case of promotional toys that attracted children, especially boys, to buy and consume snacks in order to be able to collect and exchange the toys with their peers. The toys were a means of socialising in their playgroups.

6.5.2 Green tea drink: Indirect advertising effects to children

Another outstanding issue that I discovered from my observation is that parents of children at all three kindergartens give their children tea to drink. When I asked if this was normal practice, all of them confirmed that it was, as illustrated in the cases of Nid and Tam and Neutron.

Upon their arrival, the boys took a shower, got changed and then picked up their baby bottles filled with iced tea to drink while watching TV. Nid and Tam spent more than an hour watching TV and almost fall asleep with their bottles. When they finished the iced tea, the bottles were refilled with red coloured flavoured syrup. I asked their grandmother whether the boys were happy

⁶³ Source of image: <http://www.online-station.net/entertainment/fun/1445>

drinking tea and suggested that it might taste bitter to them, even though it was sweetened. The grandmother replied '*no, they like it a lot. It is their favourite drink...they have it almost every day*' (Observation, April 2014)

Neutron's mother responded to my question about whether the children were allowed to drink or ask for iced tea: *Yes, sometimes they do drink iced tea. They started by taking a sip from their father's bottle. They had lemon-and-honey-flavoured iced tea. Then their father bought a home-made iced tea, a type where you put instant tea powder in a bottle and shake...now this was time for the kids (to enjoy the fun activity). They did have fun and enjoy drinking it for a while. I did not worry much, as we did not let them drink it whenever they wanted. We only allowed them to drink it sometimes.* (Interview of Nutron's mother, July 2014)

Neutron's mother showed slight concern and expressed her efforts to control the children's drinking the tea. She said: '*It is not a drink suitable for children [as it contains caffeine]*'. In both cases, concern about the amount of sugar added to such drinks was not brought up. These drinks contain a significant amount of sugar (8-20 grams per 100 ml) and caffeine (12 mg per 100 ml) (Foundation for Consumer, 2005), which exceeds the DoH's recommended daily amount of sugar for all population (there is no specific recommendation for children).

These products did not directly target pre-schoolers via their packaging and advertising messages; however, when children were exposed to the advertising and access to the product they demanded it. Parents, on the other hand, provided their

children with it with less concern than when they gave them sweets. Two types of tea drink have recently become popular in Thailand: sweetened tea in a bottle sold at grocery shops and convenience stores, and bubble milk tea available in shopping malls. The phenomenon of tea drinking among pre-school age children was found across families at different socio-economic levels. The industry presented the green tea product as a healthy drink option with a strong promotion targeting adults with a lucky draw for a free trip to Japan or a Porsche car. I observed the parents' lack of knowledge about the high level of sugar and caffeine in the drinks. Examples of the promotional messages and strategies are presented in Figure 6. 6 the leading green tea brand in Thailand promotes a lucky draw for a free trip to Japan or a Porsche car. On the right-hand side the text states 'I-shi-ton is the leading brand blending 100% organic green tea, selection of finest green tealeaves for health'.



Figure 6. 6 Promotional poster of a green tea brand⁶⁴

Bright's grandfather explained: *When he stops by those convenience stores, he gets a lot of stuff and buys expensive stuff like the Oishi green tea drink. He knows them all. He knows there is a sweepstake [sending a cap of the green*

⁶⁴ Source of image: <http://www.siamintelligence.com/oishi-versus-ichitan/>

tea bottle to get a chance to win a Porsche]. (Interview of Bright's grandfather, April 2014)

Many families allowed their children to drink a whole bottle of sweetened drink (500ml), including iced green tea. Tutor (four-year-old boy, overweight, Private Land Kindergarten) told me that his mother, who was very careful about selecting food for her son and controlling his snacks, allowed him to drink a bottle of green tea.

One thing that these two kids like very much is pearl [or bubble] tea; Jane likes tea, while Neutron [four-year-old boy, normal weight, from Private Land Kindergarten] likes pearl (bubble bits in the tea). If I buy a cup of tea without pearls, he gets annoyed, or if I only buy it for myself, not sharing with him, he's angry. When we go out and see a bubble tea shop, especially an O-sha-ya bubble tea shop, they have to get the drink every time. (Interview of Neutron's mother, July 2014)

Figure 6. 7 illustrates examples of tea drinks available in Thailand. A picture of the left are ready-to-drink tea in bottles available at convenience stores. A picture on the right is a bubble milk tea drink.



Figure 6. 7 Examples of tea drinks available in Thailand⁶⁵

⁶⁵ Source of image: <https://www.wongnai.com/restaurants/124427ju-mamacha-ชาنم้ามุก-sukhumvit16>

6.5.3 Exposure to advertisements for unhealthy snacks on TV

Forty percent of Thai children aged one to five watch TV for two hours or more on weekdays, and fifty-six percent at weekends (National Health Examination Survey Network, 2010). The snack industry communicates with and markets directly to children, especially via advertising on free TV channels which are accessible to populations of all ages and socio-economic status. In Thailand, snack and confectionery advertisements were found to occur 42 times an hour during children's TV programmes (FHP, 2014a; Jaichuen & Kunpeuk, 2013).

In this study, pre-schoolers' exposure to advertisements on public or free TV was found in only one family of high socio-economic status because almost all households at this level watched cable TV channels which do not carry advertising, and only allowed their children to watch selected programmes on YouTube. On the other hand, children in the middle and lower socio-economic groups (five and six children respectively) were more likely to watch programmes on free TV channels and be exposed to advertising for unhealthy snacks. According to research supported by the Thai Health Promotion Foundation in 2004, at weekends advertisements for 67 different snack products (showing more than once) were presented from 7-10:30am during children's programming on the four main free TV channels (FHP, 2014a).

Lays crisps were the most popular snack among the children in this study. Although the brand did not have a promotional campaign targeting young children, the strategies employed for its advertising used popular actors and actresses and prize draws and sold the product in different-sized packets including normal-size (30 grams at 10 THB) and small (15 grams at 6 THB). Children in my study told me that they liked the taste

of these crisps. Selling it in the smallest packet, which is well within the children's snack budget, is a marketing strategy to attract these young customers.

The three cases presented in this section have illustrated the outcome element of ST. Children demonstrated positive perceptions of unhealthy snacking and the values that have been embedded in their societies. Given the ongoing promotion of snacks and their values illustrated in this section, the government should control mechanisms aiming to create additional positive value of snacks such as promotions like lucky draws and promotional toys, to stop the reproduction of positive values towards unhealthy snacks and sweetened drinks.

In this chapter I have highlighted the influence of milk and snack companies which employ a number of marketing and advertising strategies to increase their sales. Some companies even target young customers, such as with promotional toys attached to snacks. In the next chapter I present and discuss government policies, which can be seen as part of the EST macro system, that have been implemented to control and monitor obesity-related elements in Thailand; the control of advertising from the business sector; and gaps in regulation enforcement.

CHAPTER 7: IMPLEMENTATION OF POLICY ON CHILDHOOD OBESITY

This chapter presents nutrition policies and programmes for pre-schoolers that were designed and implemented by national agencies including government and non-government bodies. My observation, and consultation with policymakers and experts in Thailand, identified certain policies and programmes that implemented in the three kindergartens in this study. The presentation of macro-level policies and interventions in this chapter aims to provide better understanding and explanation of the findings at the individual level regarding the consumption of main meals, milk, and snack foods and sweetened drinks. In addition, analysis of the macro-, meso- and individual-levels reflect situations and contexts that individuals encounter in their lives and help to explain why some policies and interventions that government agencies implement may not work as planned. I employ the structuration theory concept of the position-practice network to explain the channels through which policy content has been implemented. For example, implementation of the school lunch scheme with an expectation of providing 40 per cent of the daily nutritional requirement for pre-schoolers may not reach its target in individual children because there are other factors involved such as the children's agency and the low ratio of teachers to students, which means they cannot ensure that every child consumes the recommended amount. These findings can be fed back to policymakers and implementers for further consideration and improvement of the design and implementation of the policy.

7.1 Introduction

The key policies and programmes presented in this chapter can be divided into four groups: (1) nutrition policies, including the school lunch and school milk programmes; (2) the growth-monitoring programme; (3) initiatives to reduce the obesogenic characteristics of the school environment, including the health-promoting schools programme and the carbonated beverage-free school programme; and (4) regulations to control the production, labelling and advertising of milk products and snack foods. These policies and programmes influence the consumption of milk and main meals, children's weight and height, and the purchasing and consumption of snack foods. While the policies in groups 1-3 address kindergarten level, regulations to control milk products and snack foods available on the market are applied throughout the country and mostly affect pre-school children when not at kindergarten as illustrated in Figure 7. 1. These selected policies and programmes are presented in separate sections, and in each section I start by explaining the policy/programme and then discuss the limitations to their implementation, with evidence from my own and other studies.

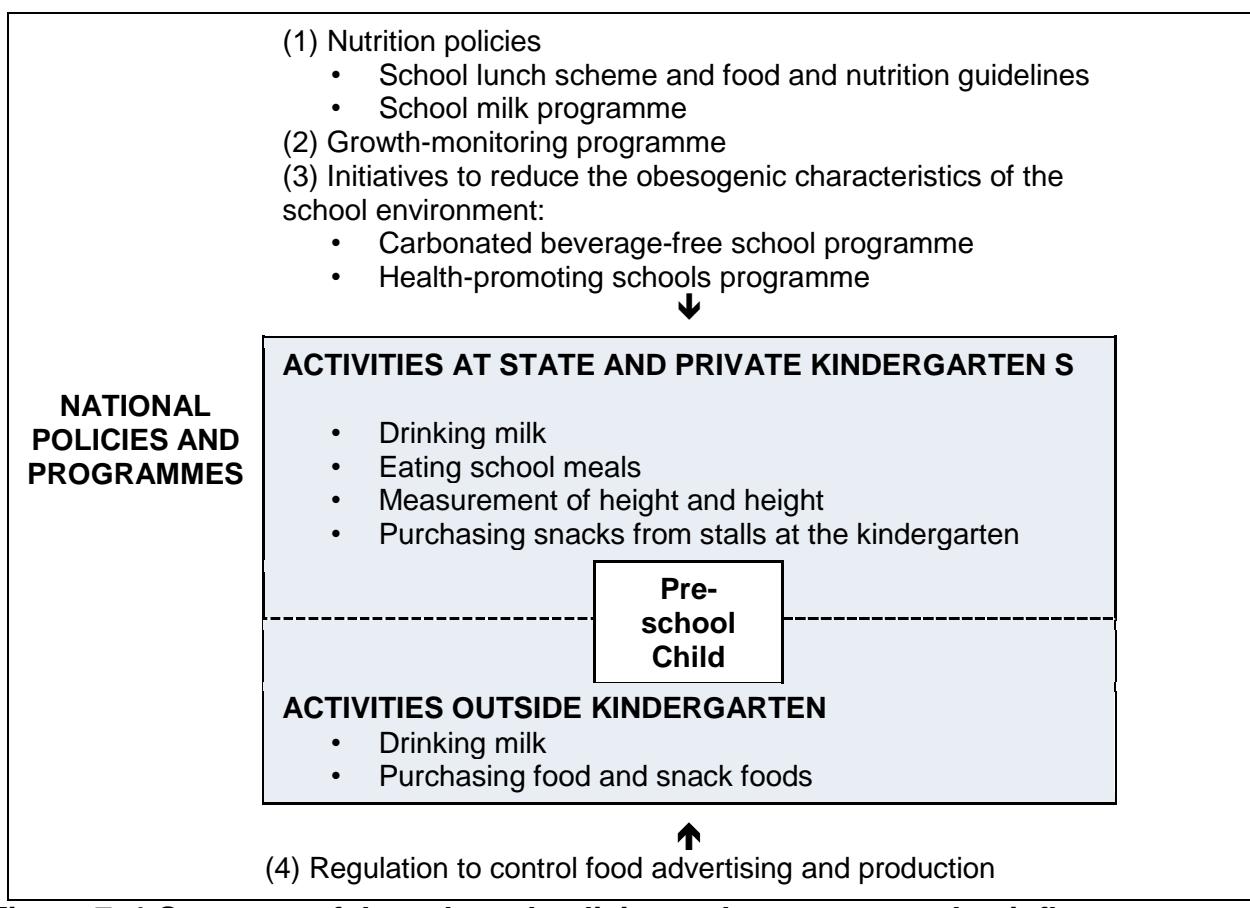


Figure 7. 1 Summary of the selected policies and programmes that influence children's nutrition

As described in Chapter 3, one of the three kindergartens included in this study was state-run and two were private. Trakulwong et al. (2007) reviewed different types of kindergartens in Thailand and grouped them into three types: kindergartens entirely organised and financially supported by government agencies e.g. kindergarten levels 2 and 3 (for children aged 4 and 5) at Temple Side Kindergarten; kindergartens organised and financially funded by the private sector, e.g. Private Land and New Market Kindergartens; and kindergartens organised and financially supported by local authorities or communities, e.g. kindergarten level 1 (for children aged 3) at Temple Side Kindergarten. The authors explain that the first and third types are bound to follow most of the government's regulations and policies, while the second type is only

expected to follow general regulations regarding academic content and the financial management and physical environment of the kindergarten. Table 7. 1 illustrates the policies and programmes followed at each of the three kindergartens in this study. The only programme that is compulsory for all kindergartens is that of growth measurement.

Policy and interventions	Temple Side Kindergarten	New Market Kindergarten	Private Land Kindergarten
School milk programme	√	√	✗
School lunch scheme	√	✗	✗
Training for catering staff	✗	✗	✗
School lunch planning software	✗	✗	✗
Growth measurement programme	√	√	√
Health-promoting schools programme	√	✗	✗
Carbonated beverage-free schools programme	√	✗	✗

Note: √ = kindergarten followed policy/programme; ✗ = kindergarten did not participate in policy/programme

Table 7. 1 Policy and interventions that kindergartens in this study adopted

The school lunch scheme is only for state kindergartens, while the school milk programme was also open to the participation of private kindergartens. New Market Kindergarten decided to join the programme. However the director of Private Land Kindergarten told me *Parents [at our kindergarten] are quite selective about the milk their children drink... we decided to let them bring milk from home so they get what they want* (Interview of Kindergarten's Director, April, 2014). All three kindergartens measured the children's growth according to the requirement of the Ministry of Education, and acknowledged that this is included in the kindergarten accreditation process. However, none of the kindergartens were aware of the school lunch planning software or of training for catering staff. Only Temple Side Kindergarten stated that

they participated in the health-promoting schools and carbonated beverage-free school programmes, which the other two did not even acknowledge them.

7.2 Nutrition policy

7.2.1 School lunch scheme and nutrition guidelines for pre-school children

The school lunch scheme includes two main policies: the school lunch fund, according to the School Lunch Act 1992, and the School Lunch Policy starting in 2008, with funding from the Ministry of the Interior's (Mol) Department of Local Administration. The two policies and budgets were combined and managed together through local authority offices in 2009. This happened in response to the Decentralisation Act, 1999 and the need for better management of the school lunch scheme. The Mol allocates an annual school food budget (approximately 400 Million THB in 2011) to local authorities to arrange lunches for children attending schools in their catchment area. Children aged 3 to 12 who attend state schools, kindergartens and primary schools are eligible for a free school lunch.

The school lunch scheme is the main policy that influences the management of lunch for children aged 3-12 at state schools and kindergartens. The budget is calculated per child, and the Cabinet approved an increase in the school budget for lunch and afternoon snack foods from 13 THB (0.20 GBP) to 20 THB (0.40 GBP) per child in 2014. The management of the budget and organization of lunch and snack foods at schools depends on an agreement between the local authority and school/kindergarten directors. In some cases the local authority transfers the budget to the school and the school hires catering staff; in others the local authority hires its own catering team to cook for schools under its care. A survey conducted by Food

and Nutrition Policy for Health Promotion (FHP) in 2013 revealed that in central Thailand, including the Bangkok area, 36 per cent of state kindergartens used teachers to manage the school's catering service (e.g. Temple Side Kindergarten), while in the rest of the country 30.5 per cent of kindergartens let the local authority hire catering staff and cook in the school kitchen. Other kindergartens hired catering staff directly. The survey reported that overall the food management at state kindergartens included in the study did not meet the nutritional standards for carbohydrate, fibre, iron, calcium, and cholesterol.

Temple Side Kindergarten, owned by the local authority, is located within Temple Side Primary School and owned by the Ministry of Interior and the MoE's Office of the Basic Education Commission (OBEC). The Bangkruai local authority rents space from the primary school for a level-one kindergarten (for children aged 3-4, then the children move up to levels 2 and 3, which are owned by the primary school). The local authority manages the lunch budget for the kindergarten and primary school, and with the school's director agreed that the school could arrange its own catering through a tendering process. The local authority pays the catering service directly from the school lunch budget. The catering business that won the tender is owned and run by a kindergarten level-3 teacher who has been employed by the school for more than ten years. Two other teachers informed me this makes it difficult for them to complain about the quality of the food provided: even though some teachers may not like the food and do not find it suitable for the children, they cannot talk to the teacher who runs the service because she is the most senior kindergarten teacher and is a civil servant under the Ministry of Education, while the other teachers are junior staff hired by the local authority on short-term contracts and are not civil servants.

There are guidelines for the nutrition and preparation of food for children that catering staff can use on a voluntary basis. The guidelines are proposed and publicised by two main agencies: the DoH and the Mahidol University's Institute of Nutrition.⁶⁶ Guidelines for daily nutritional intake and the nutritional content of school lunches suggest that children aged 3-5 should consume 40 per cent of their daily energy and nutrition as lunch, as well as 200ml of plain milk per day (Chittchang, 2012). There are no significant differences between the recommendations proposed by the two organizations. There is no single set of national guidelines that schools and kindergartens are required to comply with. The DoH's daily recommendations for pre-schoolers are simpler than those of the Institution of Nutrition (see Table 7. 2). The DoH recommends average amounts while the Institution of Nutrition proposes minimum amounts of nutrition that pre-schoolers should consume per week (see Table 7. 3). In addition, the Institute of Nutrition has developed guidelines and a computer software programme for school lunch management, including a guide to planning lunch menus and the ingredients to purchase. The DoH distributes its recommendations via its network and on its website. However, the supporting software and guidelines were not used in the three case-study kindergartens.

⁶⁶ The Institute of Nutrition, Mahidol University has also developed computer programme to monitor children's growth, named INMU-Growth that is used in a number of kindergartens and schools. The programme can be accessed via <http://www.inmu.mahidol.ac.th/th/innovations/programmes/isl.php>

Food group and specific nutrients	Amount per day for children aged 3-5	
	Amount per meal (3 meals per day)	Frequency per week
Steamed rice	1.5 ladles	7
Vegetables	0.5 ladles	7
Fruits	0.5 portions	7
Fish	2 tablespoons	2
Other meat	2 tablespoons	2
Egg	1 egg	2
Liver*	0.25 tablespoons	1
Tofu*	2 tablespoons	1
Pig or chicken blood*	No specific amount recommended	
Small whole fish (whose bones can be eaten)*	No specific amount recommended	
Vegetable oil	1 tea spoon	7
Carbohydrates from snack foods	1 ladle	2
Grains and nuts	6 soup spoons	1
Taro, sweet potatoes, potatoes	1 ladle	1
Sugar	3 teaspoons	7
Water	200ml	7
Plain milk	200 ml	5-7

*Categorised as high in specific nutrients (iron, calcium and vitamin A) and it is suggested that schools and kindergartens should provide them; however no specific amount is given.

1 ladle = 6 tablespoons, or 100ml

Table 7. 2 Food consumption guidelines for pre-schoolers developed by the Institute of Nutrition

Food group	Amount per day for children aged 3-5
Steamed rice and grains	4-5 ladles (1 ladle equals ½ cup, or 100ml)
Vegetables	2-3 ladles
Fruits	2-3 portions
Meat	5-6 tablespoons
Egg	1 egg
Vegetable oil	1 teaspoon
Plain milk	400-600 ml

Table 7. 3 Food consumption guidelines for pre-schoolers promoted by DoH

A survey of food and nutrition management in state kindergartens/childcare centres by Jaichuen and Kunpeuk (2013) reports that apart from teachers' knowledge and awareness, the size and location of a kindergarten is statistically significant in determining whether the children are served with food meeting the DoH's nutritional

standards . Small kindergartens in rural areas faced difficulties in serving meat, fruit and vegetables to their children because they are far from markets, making it more difficult for them to purchase small amounts of ingredients at reasonable prices. The study stresses the importance of nutrition and food management training for teachers and catering staff; however, none of the catering staff at all three kindergartens in my study had taken the courses that the DoH and its network organize. Most such training courses are provided on an ad-hoc basis and not included in the long-term policy and budget plan of the MoPH and MoE. Moreover, kindergartens participated in these programmes on a voluntary basis and the programmes are mainly promoted through existing kindergarten networks that the ministries have been working with in the past, which did not include any of the kindergartens in my study.

A survey by FHP in 2013 revealed that 26 per cent of state kindergartens did not use food guidelines or food management interventions, meaning that the choice and preparation of food depended on catering staff's decisions, while the remaining 74 per cent used at least one tool to help them plan their lunches. For those who used guidelines or interventions, 37 per cent employed the DoH guidelines, 66 per cent hired a dietitian to plan the menu, 5 per cent used the Institute of Nutrition's computer programme to plan their menu, 17 per cent used guidelines from other institutes, and 20 per cent used information retrieved from the Internet or magazines. These categories were not mutually exclusive, and some schools/kindergartens employed more than one tool to plan their menus (FHP, 2014c). However, the limitation to this study is that those who responded to the survey were the teachers responsible for record-keeping, and although they may use the school lunch management programme and guidelines to produce food reports, the catering staff who shop for and cook the

food may or may not adhere to their menus and shopping lists. I observed that the Temple Side Kindergarten catering service did not employ any guidelines or tools to plan and arrange school lunches. The teacher who owned the catering service claimed that she listened to what the children said they wanted to eat, although I observed that the children generally did not express their food preferences.

This is linked to the lack of training for teachers and catering staff on nutrition for children. My study revealed that the Temple Side Kindergarten chef had not attended the training and did not know that it was available. A survey by the FHP (2014b) confirmed that 60 per cent of chefs at local authority kindergartens had never participated in training on food management for kindergartens.

The 1999 Decentralisation Act gives local authorities the power to monitor and assess catering service performance and the quality of food that they cook for the children. This is additional to assessment by the Office for National Education Standards and Quality Assessment (ONESQA), an independent agency performing external quality assessment of educational facilities in Thailand. Established in 2000, ONESQA is the key school and kindergarten performance accreditation agency in the country. Some local authorities did have such a monitoring process by committees made up of parents' network and local community representatives; however, this system depends on local authority's policy across Thailand, and Temple Side Kindergarten was not included.

Local authorities pay catering businesses to provide food but do not have a remit to monitor their performance or the quality of the food. At Temple Side Kindergarten

senior teachers who had been working with the local authority for more than 20 years reflected that the children did not receive enough food, and what they did receive was not according to the contract, with the catering team skipping the children's afternoon snack foods. Independently of this, I found that on some days lunch did not meet the standards, with not enough vegetables or meat provided, for example.

Regardless of the quality of the meals the catering staff prepared, another burden was making the children eat the food. At Temple Side kindergarten the teacher to children ratio was 1:15, and teachers did not always have time to take care that individual children ate all the vegetables and meat on their plates. I illustrated the techniques the children used to eat or not eat according to their food preferences in Chapter 4. In addition, the school director's policy was important in clarifying teachers' roles at lunch time: i.e. at Private Land Kindergarten the director said that teachers must make sure that every child finished at least one portion of the vegetables, carbohydrates and meat allocated to them and prepared by the catering team, but this was not the case in the other kindergartens studied.

7.2.2 School Milk Policy

As well as school lunches, 260 cartons of plain milk are allocated to each child throughout the year free of charge through the School Milk Policy. In 1992 the scheme was created by the National Milk Drinking Campaign Board (NMDCB) as a way to save the milk industry from economic crisis and provide nutrition for schoolchildren (Kammungkhun, 2009). The policy is managed by the Dairy Farming Promotion Organization of Thailand (DPO), a state enterprise under the Ministry of Agriculture and Co-operatives (Dairy Farming Promotion Organization of Thailand, 2013), which

manages the school milk programme with a budget of over 13,000 million THB/year, including management expenses (compared to the under 1,000 million THB/year budget for school lunch), which covers the distribution of milk to more than 7 million students aged 3-12 at the state schools and kindergartens participating in this free milk scheme. The distribution of the plain pasteurised milk also depends on agreements between the local authority and the milk scheme manager at each school.

The MoPH has expressed ongoing concern about problems of undernutrition and children's physical and cognitive development. Despite strong links between milk consumption by children and positive health outcomes, well-known milk-promotion campaigns were managed by the NMDCB (Chungsiriwat & Panapol, 2009), rather than the MoPH, although the MoPH's credibility in the eyes of the public as a professional health organisation has been used to support the milk promotion movement. The Ministry of Education has not played an active role in the national campaign but has taken over the policy's implementation (Kammungkhun, 2009). National milestone campaigns include a recent DoH promotion of milk to adults and young people to increase the height of the Thai population (Hodal, 2013). The promotion of milk and the school milk programme continue with high-level government support: the current Prime Minister has stated that 'school milk must be equally available [to all students] and of good quality' (General Prayut Chan-o-cha, declared on 13th June 2014).⁶⁷

⁶⁷ This also implied that the Prime Minister acknowledged the problem of poor-quality milk and milk products caused by corrupt actions that were reported to the previous governments.

Although free milk is only distributed through the school milk programme to state schools and kindergartens and participating private kindergartens/schools, children who attended other private kindergartens such as Private Land Kindergarten also had milk breaks in their schedule. In general, children from these kindergartens either bring milk from home or the kindergarten provides milk, with the cost included in the fee, depending on the kindergarten's policy. The Private Land Kindergarten manager informed me that it had been decided that parents could prepare milk for their children to cover the variety of parents' and children's preferences.

On the one hand the school milk and school lunch schemes help to reduce the number of undernourished children, but on the other the number of overweight or obese children is increasing. These are important policy challenges. Current government policy is to promote plain milk, but sweetened milk has the biggest market share. The aims of promoting health to prevent undernutrition and selling milk products has resulted in overconsumption of milk and sweetened milk, which can result in childhood obesity.

The amount of milk recommended per child under the government's school milk scheme increased from 2 litres per year in 1988 to 23 litres in 2002 (Suwanabol, 2005). The recent Health Examination Survey 2008–9 reported that 56 per cent of children aged 2–5 drank approximately 200 ml of milk a day, and 26 per cent drank sweetened milk every day (National Health Examination Survey Network, 2011).

I observed at the kindergartens that not every child drank their allocated milk. This very much depended on the teachers who managed the milk break. At New Market

Kindergarten some teachers managed to get the children in their classes to drink at least one carton of plain milk provided by the school milk scheme. Others did not encourage their children to drink the allocated plain milk. Teachers did not even encourage children identified as underweight to consume their milk. In the two kindergartens in this study participating in the school milk scheme there was no specific protocol for asking teachers to focus on feeding milk to those who were underweight in accordance with the original aim of the scheme.

The school milk scheme provides only plain milk. However, in the domestic market a more diverse range of milk products is available, including sweetened milk, fortified sweetened milk and sweetened drinking yogurt. In line with the state actors' milk-promotion campaigns the dairy industry also promotes its products to the domestic market. The domestic dairy industry consists of 20 leading businesses (in 2007, small local cooperatives were counted as 'others' with a very small percentage of total market share), including the Dairy Farming Promotion Organization of Thailand (DPO), the biggest producer, with 20 per cent of the market. Apart from joining the government's national campaign to boost milk consumption, the domestic dairy industry also promotes and brings to the market sweetened and other specialised dairy products. It should be noted that as well as producing milk to supply the government's school milk scheme the DPO also produces flavoured milk to sell on the market. Other non-state actors include related businesses such as the milk carton industry and hypermarkets in Thailand, which participate in the milk-promotion campaign (BrandAge-thaicoon, 2014).

Children were allowed to bring their milk or other drinks, such as fruit juice, and their preferred snack foods from home for the kindergartens' afternoon snack time. Data from my study suggest that children drank more milk, usually of the types of milk that they preferred such as sweetened milk and drinking yogurt, at home. The assumption of the school milk programme that without this intervention children would not consume 200ml milk drink per day was not the case, especially for children living in Bangkok Metropolitan area. In addition, parents and teachers did not know the recommended upper limit of energy consumption per day for young children, and that therefore milk consumption might need to be limited.

I observed parents' negative perceptions of the free milk received from the school milk programme during my study. Some schools, including Temple Side Kindergarten, gave the children milk to drink at home; Bright's grandparents fed him his 'free milk' only when they had run out of money to buy expensive fortified milk, while Nan (5-year-old girl attending New Market Kindergarten) told me, smiling, '*My grandfather used my [school] milk for [home] cooking and his coffee*' Corruption was also reported by a few schools and kindergartens, although not those in this study, which resulted in spoilt milk being distributed and put some children off drinking milk altogether (Kammungkhun, 2009).⁶⁸

The school milk and lunch schemes are ongoing interventions among other community-integrated programmes under the country's Poverty Alleviation Plan. The plan is claimed to have contributed to a successful reduction in undernutrition among

⁶⁸ Common cases include bad milk (due to substandard production process) being reported by schools and kindergartens; even though the expiry date had not yet been exceeded the milk had already gone bad when the schools received it.

under-fives from 51 per cent in 1980 to 20 per cent in 1990 and below 10 per cent in 2006 (Chavasit et al., 2013). To date, given the increasing trend of childhood obesity, the two policies and their strategic implementation have never been officially reconsidered. In order to monitor changes in the growth of children of pre-school age and thus the success of the nutrition programmes a further compulsory country-wide policy has been introduced. The national monitoring of Thai pre-schoolers' growth is discussed next.

7.3 Growth-monitoring policy

The Thai growth-monitoring programme was initially implemented to monitor the problem of underweight and undernourished children in the country. Children aged 0-2 received growth-monitoring intervention through General Practitioners at local health facilities of their catchment area (Chotivichien et al., 2005). In addition, growth is monitored at all kindergartens and pre-schools at least every three months in Thailand, in accordance with the DoH's standard, and enforced by the MoE.⁶⁹ Records of children's weight and height are required for the evaluation of kindergartens by the Office for National Education Standards and Quality Assessment (ONESQA). ONESQA assigned 5 out of 100 points for health indicators in the criteria for the assessment. This 5-point indicator states: '*Students have healthy weight and height, are physically competent, and are capable of taking safety precautions*' (ONESQA, 2014). Weight and height records are used to assess this indicator.

⁶⁹ On 1st October 2015 Thailand adopted the WHO's growth standard for its surveillance system to standardize the measuring system in the country.

A routine growth-monitoring system is in place at all kindergartens. Teachers weigh all the children and measure their height every two months. However, when I asked how they managed underweight, overweight and obese children in their kindergartens, staff said that they did not know. They explained that their duty was mainly to send the results to the government agencies that requested them. Many staff struggled with the calculation and interpretation of the growth results.

I observed that teachers at all three kindergartens measured the children's weight and height once every two months according to the ONESQA guidelines (twice per semester), and more frequently than the DoH's standard (every three months). The measurement protocol involved making the children line up and then the teachers would measure their weight and height and record the measurement. They used a standard growth chart to categorise them as 'normal weight and height', 'underweight', 'overweight/obese', or of 'short stature'.⁷⁰ I discovered that the charts that teachers used were very small and printed in black and white, which made it difficult for them to identify the children's health status. At New Market Kindergarten a teacher showed me the standard chart that she used to classify the children's growth status for the kindergarten so that the records could be prepared for the ONESQA assessment. The chart was attached to the education performance report of each student, printed in black and white and A7 size. A teacher at Temple Side Kindergarten asked me if I could find one of better quality with clear colours at the Ministry for her, to make her job easier. They knew that I worked at the MoPH. The design of the tools is not user-friendly and was a barrier to the implementation of the growth measurement policy

⁷⁰ Short stature is defined as 'a height more than 2 standard deviations below the corresponding average height for a given age, sex and population, without findings of disease' (Pedicelli, 2009).

and is an area for improvement to make the policy more effective and gain more accurate data from kindergartens.

At the three kindergartens I observed that teachers performed weight and height measurement activities as one of their many administrative tasks. It is possible that they did not see the benefits of the entire process of growth measurement and only performed it according to the assessment guidelines. They even expressed that they had no idea what to do if they found children who were categorised as underweight, overweight/obese or of short stature, apart from telling their parents. Therefore if this occurred their practices of organizing food and milk for the children did not change. This suggests a lack of supportive systems and interventions, such as provision of health interventions from health personnel for children diagnosed with obesity or undernutrition. Examples were shown in other provinces, such as Saraburi province where kindergartens work with their local health centre's health promotion department to implement health promotion programmes in the schools and kindergartens in the catchment area and provide treatment, including brief interventions or consultations, for individual cases.

There are a number of computer software available for classifying the children's weight status. The MoE offers a free school information management programme which includes growth measurement and is available online at no cost. However, when I tried to download and install it on my computer it did not work well and I found it very complicated, as the software incorporates all the school management records, including educational records, into one software. INMU-Thai Growth is an alternative computer software programme that was developed and made available for purchase

at 250 THB by the Institute of Nutrition. The software calculates and classifies children's growth status. Teachers only have to fill in basic data, including the children's gender, weight and height, and the software produces a report on the growth status of each individual child and for the entire kindergarten. This is an optional programme; otherwise teachers can calculate growth status themselves using the growth chart provided by the DoH. In the three case-study kindergartens the teachers used the chart and calculated the results manually; no software was used or mentioned.

7.4 Initiatives to reduce the obesogenic characteristics of the school environment

7.4.1 Health-promoting schools programme

The initiation of this programme was influenced by the concept of health promotion emphasised in 1998 during the Sixth ASEAN Summit (ASEAN, 1998). Before 1990, the Thai healthcare system focused on disease prevention and treatment. The DoH was given the responsibility for implementing the health promotion concept in practice. The country's schools were selected as the platform for health promotion, education and practice. This was also influenced by WHO concept of a health-promoting school as a school 'that constantly strengthens its capacity as a healthy setting for living, learning and working' (World Health Organization, 1998, p.1). The programme was approved in 1998. In 2001 the DoH and OBEC officially signed an MOU on the development of a 'health-promoting schools programme', and in 2002 the DoH developed a set of criteria for assessing health-promoting schools.

The programme urges schools to include health-promoting activities such as monitoring food hygiene and nutrition in school lunch program that meet the national standards and making clean drinking water and toilets available. Nineteen criteria, under ten categories are used to judge the performance of participating schools which, once they pass, are entitled to call themselves a bronze-, silver-, gold- or diamond-level health-promoting school. The ten categories are:

1. the school's health promotion policy and its implementation;
2. the school management system;
3. community projects developed between the school and the community;
4. organization of the school's environment to facilitate healthy children and staff, for example through the provision of clean drinking water and toilets;
5. school health services for the children;
6. health education;
7. nutrition and food safety;
8. physical activities;
9. counselling services and social support;
10. health-promotion programmes for children and staff.

(Bureau of Health Promotion, 2015a).

This programme is currently implemented on a voluntary basis. Both state and private schools can participate by asking a provincial health office for guidelines on implementing the programme in their setting. Once a school has implemented the guidelines and achieved the required standard it can request the local health office to assess it and award it a 'Health-promoting School' certificate (Bureau of Health Promotion, 2015a). According to my observation and interview with the Temple Side

Kindergarten and School's director, this award is an important achievement in a school director's career. Although the programme aims for implementation in schools, it affects pre-schoolers attending kindergartens located within schools such as Temple Side Kindergarten.

The first evaluation of the Health-promoting Schools programme was performed using data from 1998-2001 after the programme had been running for four years. It found that Bangkok had the lowest rate of participation in the programme, at 0.2 per cent compared to 32 per cent in other provinces, of which 10 per cent passed the assessment criteria (Kramomthong et al., 2002). In 2004 approximately 30 per cent of Bangkok schools participated in the programme, while in other provinces of Thailand more than 80 per cent participated. In 2015 overall participation was reported to be 98 per cent (Bureau of Health Promotion, 2015b). This participation rate only includes state kindergartens and schools under OBEC, which runs approximately 160 of the 1,000 kindergartens and schools in Bangkok area.

The criteria that schools must follow to be awarded Health-promoting School status are mostly in line with those they must meet for the assessment by ONESQA, an expanding network of schools have joined the programme, providing an opportunity for the DoH to deliver health-promoting messages and distribute their health education tools.

The adoption of this programme by a primary school directly affects a kindergarten under its roof (as in the case of Temple Side Kindergarten and School) in four specific areas: cleanliness and nutrition in the provision of school food; playground safety;

clean drinking water; and the availability of clean toilets. The school may initiate additional policies such as health education and physical activity classes in response to the Health-promoting Schools policy. During his interview the Temple Side school and kindergarten director presented the health-promoting schools programme that the school had adopted under her administration, explaining that it had helped the school and kindergarten to improve: specifically, the school had renovated the kindergarten playground and toilets to meet the assessment criteria, and exchanged the cheap cutlery used before the assessment for standard small cutlery made from high-quality plastic more suitable for kindergarten children. On the other hand, teachers reflected that this special project consumed a lot of their time and increased their daily workload. For example to prepare for the assessment visit by the Health-promoting Schools Committee all teachers were called to help to decorate the site and arrange the environment to meet the evaluation requirements (interview of a teacher, May 2014). The teachers explained to me that was akin to ‘sprinkling coriander on top of the food’ (*Pak chee roy na*), to make things look good on the surface.

The core content of the Health-promoting Schools programme – adjusting the school environment and providing education for the better health of the children – was only partially understood and implemented by school, kindergarten and even local authority staff, whose lack of awareness about childhood obesity and other health issues I observed. In Chapter 6 I described the special Children’s Day that was organized by the local authority and teachers. On special occasions unhealthy snack foods were used as treats and rewards for the children. This showed that adults, including kindergarten staff, based their decisions on personal values that saw snack foods as a treat for children, which was not congruent with the health-promoting interventions

and policies that they implemented according to their roles. This indicates a gap between the national health promotion campaigns and actions of local authority officers which is directly linked to health behaviours of children.

School meals and snack foods were discussed at the 6th National Health Assembly in 2014. One issue that was considered was the food and snack foods sold around schools and kindergartens: mobile vendors sell their snack foods just in front of many kindergartens. This was found to be a very complicated problem to manage. The strategy of many kindergartens was to ask the community and vendors for their cooperation, and thus the effectiveness of this initiative depended on the relationship between the kindergarten director and the community, and cooperation from kindergartens in not running their own snack stalls.

7.4.2 Carbonated beverage-free school programme

The carbonated beverage-free school programme was initiated by the Sweet Enough Network of dentists, paediatricians, health promoters, academics and media specialists. The network has closely been working with the Bureau of Nutrition, the DoH and local authorities. It established in 2002 to reduce sugar consumption by the Thai population.⁷¹ The programme encourages voluntarily participating schools to remove sweetened carbonated drinks from school snack stalls to reduce young children's consumption of sugar. Examples of the programme's activities are presented in Figure 7. 2. The left picture illustrates the governor of Singburi Province awards the Carbonated Beverage-free School certificate to the school director. The

⁷¹ This policy targeted schools, but since, according to the educational structure, some government-own kindergartens are embedded in schools the policy also affected pre-schoolers attending those kindergartens.

right picture shows an event at a school targeting school children with the message that they should avoid sweetened drinks as part of the Sweet Enough Network campaign.



Figure 7.2 Activities in the carbonated Free School programme⁷²

An evaluation of the management of state kindergartens conducted by Issaranurak and Suthisukon (2007) revealed that 57 per cent of state kindergartens allowed children to bring snack foods from home, and almost all had snack stalls available both just outside and within their grounds. Most such stalls offer unhealthy snack foods and sweetened drinks. A recent case study was shown on the TV programme *Fat Facts*, supported by the Thai Health Promotion Foundation and aiming to raise awareness of obesity among the Thai people. The programme revealed an eight-year contract between a secondary school and a carbonated drinks manufacturer. In return for the contract the company provided two school buses and an annual scholarship worth 10,000 THB (200 GBP), and paid the school's electricity and water bills. It set up four stalls which each earned approximately 10,000 THB per day (FHP, 2014b). Carbonated drink companies' marketing strategies for securing long-term contracts

⁷² Source of image: www.sweetenough.in.th

with schools included offering them a donation and distributing promotional goods to students and teachers. Although I did not discover such cases in my sample, these strategies can affect young children attending kindergartens attached to schools such as Temple Side and New Market Kindergartens because it provides great opportunity for children to access to sweetened drinks.

In response to the Sweet Enough Network, OBEC promoted a carbonated beverage-free policy for all educational facilities under its care. The policy was implemented on a voluntary basis. In 2012 a survey reported that 70 per cent of schools and kindergartens under OBEC had removed all carbonated drinks from their stalls (FHP, 2014b). This programme is schools and kindergartens' most widely-adopted health promotion programme, according to the latest survey by the FHP with support from Thai Health in 2014. However, the findings suggest that a number of schools misunderstood the concept of the programme and replaced carbonated drinks with home-made sweetened drinks. I also observed in my study that two kindergartens that ran snack and food stalls sold homemade sweetened drinks and milk.

7.5 Regulations controlling milk products, snack advertising and product labelling

Chapters 5 and 6 illustrated the strategies that the milk and snacks industry use to sell their products to both children and parents. Examples given were advertisements on TV and promotional events in kindergartens organized by milk companies. These marketing strategies are not comply with the legislation and the control of marketing regulations in Thailand. The FDA is the main agency overseeing food and drug products available on the domestic market. Its relevant mandates included controlling

food production processes, e.g. prohibiting the addition of sugar to infants' formula milk; food labelling to educate consumers, and the control of food marketing messages, including those about milk and snack foods. Furthermore the Broadcasting Business Act 2008 appointed the National Broadcasting and Telecommunications Committee (NBTC) to plan and control broadcasting activities including television advertising. However, the FDA is a policymaking and implementing body, not a law enforcer. The effectiveness of the law also depends on the law enforcement authority.

7.5.1 Laws to control snack foods that are high in calories, sugar and salt

In 1998, the provision of nutritional content labels on food packaging was introduced on a voluntary basis, except for products that claimed nutritional benefits (Chavasit et al., 2013). From then on health promoters has been working on and pushing forward the food-labelling agenda. It was not until 2007 that MoPH Notification (No. 305) 2007 'Re. the labelling of some kinds of ready-to-eat foods' was announced to 'provide nutritional facts for consumers and to support measures to prevent nutritional problems' (MoPH, 2007, p.1). This law mainly obliges producers of certain snack foods to display their nutritional contents on their packaging with the warning message 'Consume small amounts and exercise for good health' as illustrated in Figure 7. 3. The snack foods included in this notification are fried and baked potato chips; fried and baked popcorn; rice crackers and extruded snacks; crackers and biscuits, and filled wafers.

The laws were designed to promote the health of the general population, not just children. The format in which nutritional content was to be displayed was to follow to the Guideline Daily Amount (GDA) format. The GDA states the percentage of the Thai

Recommended Daily Intake (RDI) of nutrition and energy in the pack. Unfortunately the amounts used to calculate these percentages is that for adults, and specifically for a 60-year-old Thai male with a reference daily energy intake of 2,000 calories. The GDA covers the whole Thai population from six years old upwards; however, the RDI for pre-school children is 1,300 kcal (Chittchang, 2012).

Milk products are among the foods that must state their nutritional content, because they are grouped as products that claim nutritional benefits and because some contain high amounts of sugar. From my observation at kindergartens and milk shelves in supermarkets nearby the kindergartens, there are a huge number of milk packages designed to attract young children by making colourful packages with cartoon characters. This is actually not allowed in the FDA's regulation to control marketing of milk products – the regulation prohibits an advertisement of milk products to a specific population group. In addition, the labelling contents taken from a sample of the milk cartons that the pre-schoolers in my study consumed, illustrated the GDA that was based on the adult value of 2,000 kcal/day as shown in Figure 7. 4 which can mislead parents about suitable amount of milk consumption of their pre-school children.



Figure 7.3 Nutritional content displayed on snack food packaging with warning message (original photo)

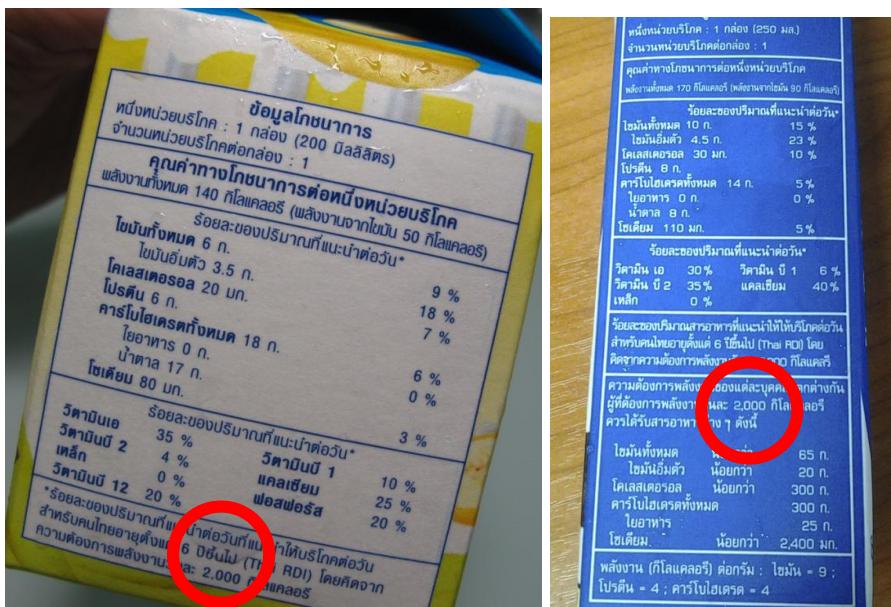


Figure 7. 4 GDAs on milk carton using 2,000 kcal as energy reference (in red circles) (original photo)

Laws in this category do not target the health of pre-schoolers specifically but rather the health of the general population, especially with such a nutritional content labelling.

This finding suggests further investigation for policy change to include the provision of nutrition labelling that also consider children population.

7.5.2 Control of children's food and snack advertising

Relevant legislation implemented to control advertising includes:

1. The Food Act 1979, which prohibits advertisements containing exaggerated claims for the benefits of products and advertisements intended to mislead consumers about the benefits of the products ("Food Act, B.E. 2522," 1979);
2. The FDA Announcement Re: Criteria for Food Advertisement 2008, which indicates that characters advertising milk products and jelly and gum sweets must be over three years old and speak clearly (FDA, 2008a); and
3. The Broadcasting Business Act 2008, which controls the amount of advertisement broadcasting time on television and radio; section 23 states that this shall not exceed 12 minutes and 30 seconds per hour ("Thai Public Broadcasting Service Act, B.E. 2551," 2008).

A study by Jaichuen (2013) for the Food Watch Project counted the number of advertisements on Thailand's four main free TV channels during children's programming times on Mondays to Fridays 17.00-20.00 and weekends 06.00-10.00 and 17.00-20.00 from 24th March to 7th April 2014. The study reported 224 different advertisements for food and snack foods out of a total of 372 including duplications, of which 210 were for unhealthy snack foods.⁷³ These included direct advertising

⁷³ Food Watch is a research-based program aims to monitor unhealthy food industry and marketing strategies of food and drinks containing high amount of salts, sugar and fat, targeting Thai children's consumption. The program was funded by the Thai Health Promotion Foundation and run by FHP in 2013.

during breaks and indirect advertising within programmes, which exceeded the 12.30-minute limit. The researcher reports that children were the main targets of these advertisements: 30 per cent targeted children; 27 per cent targeted teenagers; 24 per cent targeted adults and 19 per cent targeted all age groups. In addition eight products did not obey the FDA's legislation on advertisements for children's food. This illustrates the limited enforcement and control of the advertising in reality.

The law as it stands and the poor enforcement of existing legislation make it difficult to control advertising for unhealthy foods aimed at children. My study found that events in booths at shopping malls where families spend time and unintentional direct advertising (especially of snack foods that use promotional toys to attract children, as illustrated in Chapter 6) by their peers at kindergarten were also key channels through which products are promoted to children of this age.

7.5.3 Control of production and promotion of milk for children

(1) Production control

Thailand's FDA controls the content of children's milk by implementing a regulation prohibiting producers to add sugar or sweeteners such as honey to infant formula milk. This regulation was declared in the MoPH Announcement forbidding the addition of sugar to young children's formula milk. It has been implemented since 2005 and is under the monitoring and control by FDA (2005).

The MoPH's Notifications No. 286 and 287 B.E. 2547 (2004) Re: Infant Foods and Follow-up Formula Foods for Infants and Young Children (No.3) and Modified Milk for

Infants and Follow-up Formula Modified Milk for Infants and Young Children (No.2)⁷⁴ prohibit the addition of sugar or other sweeteners such as honey to formula milk for infants (aged up to 12 months) and young children (12-36 months) (FDA, 2004a, b).

The MoPH's reason for these notifications was:

To support the prevention of dental caries and obesity in children, for whom consuming sweet foods from infancy can have an effect on health in later life.
(p.1).

Although the amount of sugar and sweetened substances in milk formula for infants and young children is controlled, this does not apply to milk products for consumption by pre-school and school children. Other dairy products, namely flavoured milk and yoghurt are only being monitored for their production process, mainly to prevent the contamination and toxic substances in the products. Therefore these dairy products are freely available in the market without a control on amount of sugar added to the products.

(2) Advertisement control

Advertising milk for infants and young children (including formula milk) is clearly prohibited in a specific section of the FDA's Announcement Re: Criteria for Food Advertising 2008. In addition, product labels must contain the message 'Human breast milk is best for infants because of its full nutritional value'. However, there is no special

⁷⁴ '4.7 Sugars, honey, and any other sweeteners shall not be used, except (a) addition of lactose or addition of carbohydrates other than sugars which have the sweetness equal to or less than lactose. (b) modified milk for infants and follow-up formula modified milk for infants and young children that shall be used for feeding infants or young children with an abnormal digestive system or malabsorption or allergy to certain nutrients as approved by the Food and Drug Administration.'

section of food advertisement legislation that directly controls food, milk and snack foods targeting pre-schoolers. There is one relevant section referring to the control of milk advertising stating:

3. Dairy and dairy products

3.1 Shall not communicate to be meaningful as a product for a specific group because everybody can consume including children older than three years.

3.2 Age of presenters will be older than three years and they will speak with clear pronunciation.

(FDA, 2008b)

The presented regulation leaves room for controversial action such as the use of cartoon characters on milk cartons to attract children, and the organisation of promotional events for milk products in kindergartens (FDA, 1979), and has seen the industry make implicit claims that milk products can make children smarter and able to perform better academically, as discussed in Chapter 5). Data from this study suggest that parents believed the exaggerated health benefits claimed for fortified milk products.

The FDA, with support from non-profit and social organisations, announced in 2007 that it was considering improving the law controlling advertising of snack and milk products for young children (Academic Resource Center: Thai FDA, 2007). This elicited responses from the milk and snack industries, which complained that such action would create huge losses to the Thai economy.⁷⁵ To date the regulation has not

⁷⁵ 'More chaos to be created by government reforms', Ibiz channel (2007), <http://www2.manager.co.th/iBizChannel/ViewNews.aspx?NewsID=9500000099193> (accessed 23rd February 2015).

been amended, although the issue was still under review and being discussed, and has been announced as a national resolution in the 6th National Health Assembly in 2014.

In addition to the gaps in the law and the lack of legal enforcement, the laws reviewed and presented in this section have been enforced with penalties ranging from a fine of 30,000-50,000 THB (600-1,000 GBP) to the withdrawal of product licences (FDA, 1979). The financial penalties are mild compared to the total annual revenue of snack and milk companies, which totals more than a million THB per one product.

7.6 Broader policy and system challenges

I have presented the limitations to policy implementation in previous sections. This section focuses on policy and regulations challenges, drawing on my findings. I employed structuration theory (ST) to guide the analysis in this section to reveal the factors and mechanisms that are involved and influential in policy transfer and implementation in kindergartens and the wider social and environment system. The limitation of ST in exploring these issues is that this analysis can only explain the situation and provide suggestions and possible solutions to problems, rather than assessing the effectiveness of policy implementation.

7.6.1 The external structures: Policy implementation mechanism

At the national level, the coordination between ministries, including the MoPH, MoE and MoI, and their different policy priorities pose difficulties in putting health-promoting agendas such as growth measurement and guidelines for school lunch into policy and practice, especially at the kindergarten/school level. Although the MoPH and other

health-promotion agencies want to implement policies and programs to improve the health of young children, the most important platform for policy implementation is kindergartens and schools, which are managed by MoE and MoI. Within the education area, varied management of schools and kindergartens under the MoE and MoI has been reported (Trakulwong et al., 2007). There is also an issue of coordination where a school and a kindergarten (for example, Temple Side Kindergarten) on the same site are administered by different governmental bodies, namely the MoE's Office of the Basic Education Commission and the local authority, where the management of and cooperation between the two units depends on personal relationships and agreements between the school director, the local authority and the kindergarten's head teacher. This results in different structures for kindergartens and how these kindergartens adopt and implement policy and interventions.

A special character of the Bangkok Metropolitan area has resulted in a huge number of private kindergartens which is managed by a private education department in the MoE, while state kindergartens are under the Office of Basic Education Commission. This different management systems placed different regulations on private and state kindergartens. This therefore leaves gaps in policy implementation as illustrated by the low participation of Bangkok schools and kindergartens (mostly private ones) in the health-promoting school programme initiated by the DoH. Educational facilities in the Bangkok Metropolitan area stand apart from the community with little participation from communities and parents. This affected the management of food and snack sales around the area's kindergartens, which are more difficult to control than the kindergartens' own snack stalls. There is a large number of private kindergartens in the Bangkok Metropolitan area, and no link between them and government agencies

such as the MoPH regarding working together on health promotion programs. However, considering the number of private kindergartens, the level of competition between private kindergartens suggests opportunities for education facilities to improve their services, including health-related services (the provision of clean and nutritional food and physical activities) to attract parents, if these were seen by the kindergartens' owners and parents as their priority area. For example, at all three kindergartens parents mentioned that it was good that the kindergarten had a playground and play area for their children to use before going home, where there is little space to run around in.

7.6.2 Policy communication to individuals

I observed a lack of training and tools to support the implementation of national policy at the kindergartens. One example is the training for catering staff, which is an integral part of the school lunch scheme and was entirely unused in my sample. A core message of the Health-promoting Schools policy, namely the importance of children's health, was not well communicated and was not raising awareness of the problem of childhood obesity and of ways to prevent it. I also noted an absence of reliable equipment and tools to support the measurement and assessment of the children's growth, as reported by the teachers.

My study found that the internal values of individuals such as teachers and parents had more power than policy content in decisions regarding arrangements for the children's consumption of food, milk and snacks. The analysis in Chapters 4, 5 and 6 suggests that micro-level system factors such as individuals' internal values, consumption preferences and perceptions of obesity played an important role in

guiding their actions. These individual preferences are partly shaped by consumer marketing, which draws on and reproduces values concerning identity of being good parents.

The practical implications of this are that policy content and its accompanying tools should be designed to reach important agents involved in the policy process such as chefs and teachers at kindergartens and parents. Meanwhile the implementation of policy to control obesogenic environment such as the carbonated beverage-free school programme, is key to the successful management and control of obesity among children. I found that teachers experienced a conflict between the jobs assigned to them, such as measuring the children's weight and height and providing them with milk and meals, and their own internal values such as that food should not be wasted, and their use of unhealthy snacks as rewards or treats for the children. This also indicates a lack of awareness about child-rearing and children's health from a holistic perspective, which may be related to the growing problem of childhood obesity.

Awareness of childhood obesity has not been recognised nationwide. As illustrated in the case of the School Milk Policy, when two-purposes of the policy (to promote milk drinking to keep the dairy industry and to promote health of the population) were implemented by various actors (government agencies and milk industry), the importance of the policy contents and movements could be directed to a way that created undesirable health behaviour such as the overconsumption of milk and the consumption of sweetened milk, which are matters of concern to health professionals.

7.6.3 The position-practice network: possible channels for change

Structuration theory's concept of the position-practice sees the paediatricians, teachers and parents in previous chapters serving as a link that conveys elements of external structures, such as values or rules, to agents. For example, promotion of the benefits of drinking milk, the School Milk Policy and the value of routinely drinking milk are transmitted via a number of networks of position-practice including paediatricians, teachers and parents, and are internalised by parents and children. Such networks should be investigated and promote as a reliable channel for the promotion of values that may be reproduced, and at the same time to change values and actions that are contrary to healthy eating practices. For instance the main message about the benefits of drinking plain milk could be strengthened, while the value 'any type of milk is acceptable for children' should be nuanced with the information that sweetened milk can lead to the development of obesity and dental problems in children.

7.6.4 Children's agency: a missing link in policy development

Another key area that is rarely taken into account by policymakers and implementers of health promotion intervention is children's agency. My study confirms that children have power to make choices about what they eat in terms both of their reactions to adults' orders and of a real power that is transferred to them via having their own money to buy snacks with. As discussed in Chapter 6, the media, with its limited government monitoring and control, also plays an important role in shaping internal structures including values that children have, including their understanding about eating unhealthy snack foods.

This chapter has presented my macro-level findings, namely on policies and interventions initiated by government agencies aiming to shape individuals' health behaviours and prevent childhood obesity. My findings from the case studies of three kindergartens and sixteen families have highlighted limitations in policy implementation. The use of a qualitative approach, case studies and ST has provided the opportunity for me to understand the relationship between structures and the agency of individuals including teachers, parents and children, as well as their interactions. Some of my findings will be fed back for future research and policy implementation, especially to the Ministry of Health and the Thai Health Promotion Foundation, the main funding agencies for my data collection. In the next chapter I draw conclusions from my empirical findings on the consumption of main meals, milk and snack foods, and relevant policy implementation.

CHAPTER 8: CONCLUSION

This research has sought to understand the actors and factors influencing childhood obesity and food-consumption-related factors, focusing on Bangkok's Metropolitan Area. I use ecological system theory (EST) as a framework and structuration theory (ST) to explore factors influencing childhood obesity at different levels of the social environment and how these influence pre-schoolers eating practices via their caregivers, namely their parents, family members and kindergarten teachers. Pre-schoolers and caregivers and their interactions around food consumption are my focus; however, I also investigate national and institutional policy and interventions that influence childhood obesity.

This chapter is divided into four sections, starting with a general discussion and conclusion of findings of my study, followed by the contributions of this research in terms of research design and methodology, and proposals for future research. I then present some policy implications and make concluding statements.

8.1 Factors and actors influencing childhood obesity

The main research question of this study was 'What actors and factors influence childhood obesity in the Bangkok Metropolitan Area?' To further investigate this question, I proposed a set of sub-questions: 'How do caregivers and other actors and structures influence pre-schoolers' food choices and consumption patterns?' 'How do social, cultural and economic contexts influence the practices of caregivers and pre-schoolers?' and 'What values underpin the actions of caregivers and pre-schoolers in relation to food consumption and related activities?'

I divided my investigation into three food-consumption domains—main meals, milk, and snacks—which emerged as the most prominent concerns from caregivers and policymakers. Physical activity was rarely mentioned by caregivers and is thus not included in the main findings of this thesis. This division facilitated my analysis of factors embedded in the macro-, meso-, and microlevels of EST and enabled me to use ST to explain the links between them in each domain. The benefits of applying EST and ST in my study are discussed in sections 8.3 and 8.4.

8.1.1 How do caregivers, other actors and structures influence pre-schoolers' food choices and consumption patterns?

The main actors who were directly involved with and could influence pre-schoolers' eating practices in this study included their parents, grandparents and teachers. Another group of actors who indirectly influenced the children's eating practices are their siblings, peers, others' parents, local authority officers (as owners of state kindergartens), kindergarten owners and directors, paediatricians, and local shopkeepers. These actors, especially parents and peers, have been identified in other studies of eating practices conducted in developed settings (Cullen et al., 2001; Patrick et al., 2005), while the influence of grandparents and relatives on pre-schoolers' eating is reported in studies of extended families in China (Flurry & Veeck, 2009; Jingxiong et al., 2007). Although Chan et al. (2010a) reveal that mothers of pre-schoolers in Hong Kong had lost their supportive social networks once they moved from the context of extended families to a nuclear family in this metropolis, the mothers in their study had admitted to adopted values and practices about child-rearing from parent groups which are mainly moving towards values of academic skills development among pre-schoolers. My investigation also supports the findings of

other studies and added that the media is a strong influence on eating practices as it acts as a channel for the business sector to communicate with consumers, namely children, caregivers and other actors surrounding children. In order to understand how these actors influence pre-schoolers' eating practices I used Stones (2005)'s ST concept of networks of position-practice relations. For example, I used it to understand an individual child's statement that she wanted to drink milk and eat a lot at mealtimes because this would make her grow big and strong. This message was actually transmitted by her teachers at kindergarten and parents at home, as illustrated in the case of Pine described in Chapter 4.

Parents take multiple factors into account when preparing food for their children, which makes such a food preparing task even harder than the kindergartens'. These factors include their identity as good parents (i.e. their internal structure) and their children's preferences. Mothers feel under particular pressure in relation to social expectations of their role, as I demonstrated in Chapter 4. Working conditions rarely allow adults and children to eat together, and this both deprives children of good role models and means that the food they are given is determined by their preferences and the limited choice of foods available in the local area. The case of Tutor's mother (see Chapter 4), who absorbed the value of providing healthy meals for her son from a paediatrician, illustrated a link between external and internal structures where a mother put a paediatrician's advice into action by feeding her child with the suggested nutritional food as much as possible, reflecting how parents choose to adopt a practice that is responsive to their own child-rearing values, and in this specific case illustrates the action resulting in practice that promotes overconsumption and childhood obesity.

Kindergarten teachers form a network of position-practice relations that not only link solid structures such as government policy with individuals' internal structures, e.g. through organizing school lunches, milk and snacks according to the policy, but are also part of a mechanism that reproduces values and social practices that are internalised by caregivers and children. For example, teachers treated snacking in two different ways. First, snacks were attached to routine milk or lunch breaks, with less-sweet fruits offered twice a week according to government guidelines. However, almost all of the teachers used sweets and unhealthy snacks such as crisps and extruded potato snacks to reward children in class or as a treat on special occasions. The teachers' internal structures were influenced by both from the kindergarten's rules and routines and their own experiences; this resulted in their having two different snacking practices for children, the latter promoting the development of childhood obesity.

Concerning the structure of kindergartens, my findings suggest that government policy and guidelines have little influence relative to kindergarten-level factors, including chefs'/kitchen managers' experience and knowledge, which directly affects the children's willingness to eat the food they provide. Chefs neither attend training nor used the guidelines for school lunch standards and management endorsed by the DoH in their food preparation, and the problem is not just that the training does not reach the target group but the palatability of the messages put forward in training designed for them. The data that I obtained from the interviews with and observation of chefs at the three kindergartens suggests that all of them use (and believe in) their knowledge and experience to guide the preparation of food for pre-schoolers. In private kindergartens the taste of food (to encourage children to eat a lot and to eat

vegetables) and the budget are the top criteria. Meanwhile, a catering team at the state kindergarten takes a contract approved by the local authority and the budget as their criteria for school lunch preparation. One factor in this is the extent to which kindergartens need to please the parents, who like to see their children eating food and drinking milk enthusiastically. This need to please parents rather than differences in the quantity and nutrition of the food provided is the key difference between the kindergartens used by parents of different socio-economic status. Food provision at kindergartens is accompanied by the teaching of values to children, such as the value of rice, and rules about meals such as the importance of finishing what you have on your plate. The availability of snack stalls in the kindergarten environment also shapes pre-schoolers' eating and snacking practices. Government policy aiming to prevent and control such obesogenic environments were found not to be effective, because they were affected by caregivers' values regarding rearing and feeding children, by the children's characteristics and agency, expressed through negotiating their choice of food with adults, and by the macro-level factors discussed earlier.

8.1.2 How do the economic, social, and cultural contexts influence caregivers and pre-schoolers' eating practices?

In this section I highlight macrosystem factors, focusing on obesogenic environments and the working and living conditions of families with pre-schoolers residing in Bangkok (values and social structures are discussed in the next section). While the lifestyles of employed parents and the obesogenic environment of the metropolitan area contributed to adults' decisions about their children's food, socio-economic status was a minor influence in relation to meals, milk and snacks. This contrasts with an ethnographic study of Latino families in Brooklyn, New York by Kaufman and Karpati

(2007), who found that economic status and food insecurity were important drivers of childhood obesity. My findings confirm those of Chan et al. (2010a) in the rapidly-changing context of modern Hong Kong, which is similar to Bangkok, where other factors, including caregivers' internal structures and conflicting messages about the behaviour expected of children received from various networks of position-practice, increased the likelihood of Hong Kong becoming an obesogenic environment. However, my sample did not cover families of very low socio-economic status, and therefore food insecurity was not an issue.

8.1.3 What values underpin the actions of caregivers and pre-schoolers in relation to food consumption and related activities?

In my study I identified values underpinning caregivers' actions in three domains of eating practice, including meals, milk and snack consumption. Examples of these values included 'eating meal makes children grow, and the good parent makes them eat', 'fortified milk makes children smart', and 'snacks are a treat and a reward for children', and these values affected how caregivers prepared food for children. Feeding practices are influenced by values around good parenting, and particularly mothering. Carole A. Bisogni et al. (2002) propose the use of the identity concept in researching eating practices because it offer a lens through which to understand people's multiple meanings of eating (see Chapter 1). My study confirms that the inclusion of individuals' identity concepts in relation to eating practices helps to explain why individuals – for example mothers – chose to adopt certain feeding practices with their children. Caregivers are particularly important actors who convey their values and structures to children, including the healthy-eating values and practices that the family

holds and reproduces (Skafida, 2013). These underlying values and patterns play an important role in shaping eating and feeding practices.

Values sometimes conflict, for example encouraging children to eat a lot by feeding them things they like versus giving them a nutritious diet. ST illustrates how these values are internalised and reproduced by children to become what it characterises as outcomes. The case of Liz, whose father admitted that he did not want to create stress between himself and his daughter over eating practices, even though he knows that the food option his daughter chose to eat does not provide standard nutrition according to his knowledge about food groups, is an example illustrating that the transmission of values through knowledge that parents have about nutrition, and an acknowledgement that adults do not insist on food practices that conflict with children's preferences.

8.1.4 Children's responses to influences from actors and structures at kindergarten and household levels

My investigation has focused on the eating practices of pre-school children, who largely depend on their caregivers; however, children also exercise power in negotiations with caregivers. They learn to use tactics to negotiate for what they prefer. They also learn that they have power that they can exercise, especially within their households. Studies have shown a relationship between children's temperament and their weight, mediated by the style of parenting. The power of negotiation over pre-schoolers' food consumption is not entirely on the adults' side. Specifically, children put their effort into negotiating for snacks rather than avoiding drinking milk and eating meals. Children's agency and their desire for their preferred snacks were shaped and

influenced by surrounding factors including the example of their peers and snack industry advertising.

In Chapter 5 and 6 I have highlighted a number of marketing and advertising strategies that snack and milk companies use to target young customers such as attaching promotional toys to snacks. The snack industry communicates with and markets directly to children, especially via advertising on free TV channels that are accessible to populations of all ages and socio-economic status (FHP, 2014a). Pre-schoolers are exposed to direct and indirect advertising on public or free TV, YouTube, Facebook and in digital cartoons produced by the food industry available in forms of CDs and DVDs. My study found that the children had positive perceptions of unhealthy snacking. Given the ongoing promotion of snacks and values that adults and children in this study have, for example ‘snack is a reward’, the government should control mechanisms aiming to create additional positive value to snacks, including promotions such as lucky draws and promotional toys, to stop the reproduction of positive values regarding unhealthy snacks and sweetened drinks.

8.2 Policy implications

Chapter 7 emphasises the importance of macro-level factors such as government policy, programmes and legislation. It uses findings from the field sites to show how the implementation of these policies and programmes at the kindergarten level affects their effectiveness.

I observed a lack of training and of tools to support the implementation of national policy in kindergartens. For example none of the staff in my sample had attended the

catering training that is an integral part of the School Lunch Policy. Further studies may be needed to understand the different contexts of private and state kindergartens to best promote the use of already-available supporting tools such as software for school lunch management and the improvement of training for catering staff, including experienced chefs who use their long-term experience to guide food preparation. In relation to this, a core message of the health-promoting school policy, namely ensuring the good health of children, was not well communicated, reducing the ability of the policy to address childhood obesity. Furthermore the health-promoting issue has been overtaken by the concerns that parents and kindergarten teachers have about children's cognitive (academic) skills development.

During my investigation of milk consumption I discovered that this is a critical time for reflecting on the implications of the development of milk consumption patterns in the country, bearing in mind that government agencies continually promote milk. Their aim is to increase domestic consumption in the near future by using the milk consumption figures of other countries, including European and other Asian countries, as a comparative standard for Thailand (The Information and Public Relations Office, 2014). The evidence from this and other studies (Aekplakorn & Mo-suwan, 2009; Elliott, 2014; Food Intelligence Center, 2012; Harris et al., 2004; Malik et al., 2006) suggests that the MoPH may reduce its promotion of the benefits of all forms of milk consumption and shift to an emphasis on types of milk (i.e. plain milk) in recommended quantities. Meanwhile, knowledge about the selection of values and messages concerning milk consumption as well as the role of the network of position-practice as a channel that link values from external and internal structures, provide useful information for future changes in policy and practice. For example, I observed a lack

of awareness about the appropriate daily amount of milk for pre-schoolers and the drawbacks of drinking sweetened milk.

There were insignificant differences in sweetened and fortified milk consumption between children from families with high, middle and low economic status, showing its popularity across families of different educational and wealth levels and suggesting a need for better public education about pre-schoolers' milk consumption targeting parents and other adult carers. With regard to this change, evidence from my investigation also highlighted other factors that are relevant to parents' decision-making concerning the selection of milk drinks for their children. However, the power to create such changes does not come solely from individual volition but also requires the control of promotional materials at the national level. For example, a widely presented message about dental health to promote good sweet-consumption practice—that eating sweets creates dental caries—is likely to yield good results by urging parents not to provide sweets to their children, as showed in my study. However, when it comes to consumption of 'milk' compared to other sweets, the decisions that parents have to make are more complicated, given all the values presented. Furthermore, control is needed for the continuous promotions by milk companies employing various marketing strategies targeting not only adults but also children, also an increase in the enforcement of existing controls of milk promotion in the Thai market. Importantly, this should include serious checks by the MoPH including FDA and DoH of the claims made for fortified milks, and health warnings about the consumption of sweetened milk.

My research found an absence of legal monitoring and enforcement (the responsibility of Thailand's FDA) concerning the marketing strategies used by milk and snacks companies, especially direct-to-(young)-consumer marketing such as organising events at kindergartens and advertisements on the mass media with content and design aimed at young consumers. This is an urgent problem because such marketing strategies prove the potential of channels via which the industry can create and send a strong message to customers and shape pre-schoolers' eating practice. In addition, the current design of nutritional content labelling uses 2,000 calories as the guideline daily amount (GDA) for the whole Thai population over six years of age, even though the recommended daily intake (RDI) for pre-school-aged children is 1,300 kcal (Chittchang, 2012), meaning that parents do not receive the right information to enable them to make informed decisions about feeding their children.

Another key area that is absent from consumption policy and intervention development and implementation is understanding children's agency, even though children are the main focus of such policy and interventions. My study confirms that children have power, in terms of both their reactions to adults' orders and real power that is transferred to them when they are given snack money so they can make their own choices about what they eat. The media, currently with limited government monitoring and control, also plays an important role in shaping children's internal structure, including their perceptions around eating unhealthy snacks. Further investigation is suggested to explore how the media can work as a tool to effectively communicate government agencies' health-promoting messages.

The teacher-child ratio in Thai kindergartens and schools is determined by the national standard which is 10 students per one teacher (Ministry of Education, 2010) which is in line with those of OECD countries (8-13 children per one teacher) (OECD, 2011). However, in some kindergartens, the ratio went up to 20 children per one teacher. In addition, my findings suggest that the pre-schoolers to teacher ratio affects both the meal and milk consumption of children. The fewer children per teacher, the more likely the children were to finish the food and milk portion that was served at kindergarten.

8.3 Contributions of this study and recommendations for future research

The use of an inductive qualitative approach in this study has allowed me to explore emerging factors of childhood obesity, especially social factors, and relationships between factors. For example, knowledge derived from a systematic review (Chapter 1), showed a list of specific factors such as the provision of big meal portions and the consumption of sweetened drinks contributing to the development of childhood obesity. My findings further explain the reasons behind parents' and kindergarten teachers' food provision practices. My observations both at kindergartens and in households provided opportunities for me to see the different actions and interactions of children in different environments and with different adult actors. In addition, my data collection methods fit well with the nested case study, which focused on the two important environment settings that pre-school children spent most of their time in—their kindergartens and their homes. The use of EST and ST in the analysis have provided both breadth (EST), by encouraging me to look at different levels of the ecological system and their interactions, and depth (ST) through the focus on specific networks of position practice, increasing my understanding of the observed situations. The two lenses complemented one another.

The application of EST as a framework was useful in guiding my data collection and analysis. The concept of organizing influential factors into different layers of social systems helped to identify emerging factors as well as links between factors within and among layers of social (ecological) systems. Meanwhile ST offers theoretical concepts to explain the link between factors identified in different layers of the ecological system, as well as the transfer of values between generations. I propose that some influential factors identified by this study, for example values regarding food, might be transferable and should be tested in other areas in Thailand.

Understanding of factors and their links that promote childhood obesity represents a gap that research of this area needs to fill, most likely by using qualitative research approaches. For example, my study illustrates how the use of a qualitative approach helps in understanding the mechanisms and links between influential factors affecting obesity. Knowledge of social practices in relation to food practices that involve the context and identities of people in a community and occur in both public and private spaces is still missing from the study of childhood obesity in Thailand, as illustrated in Chapter 1. I concur with Delormier et al. (2009)'s proposal that eating should be considered a social practice rather than the act of an isolated agent. This approach necessitates engagement with the social context as well as with individual choice when analysing diet and eating patterns.

My close observation of and interviews with children provided in-depth data from them. Children are actually the main target of interventions aiming at tackling childhood obesity. They can best reflect their own world and experiences themselves; in this study I tried to understand how pre-schoolers think and interact with the factors and

actors around them that can influence obesity. Data from discussions with and observation of children concerning their ideas about eating, their preferences, the strategies that they used to obtain their preferred foods and the negotiation process between children and adults are among the main strengths of this thesis. This knowledge is a new area of the study of agents involved in childhood obesity in Thailand. It can also contribute to the development of policy and interventions tackling the problem, starting with understanding the people who are directly involved in it.

While acknowledging that the main problem with household observation were difficulties of gaining access to people's homes, I still encourage researchers to consider this method for qualitative studies of pre-schoolers' eating behaviour, especially when they are with their caregivers. This is because the method provides understanding of the conditions of the main caregivers' and children's agency in a context where they feel comfortable. However, observations must be planned to balance the privacy of the research participants with the rigour of the methodology. I suggest a smaller sample to allow the researcher to spend more time with the sample and to explore and gain in-depth understanding of parents', teachers', pre-schoolers' and other actors' values and how individuals internalise those values.

The use of an inductive approach with a set of open-ended questions about pre-schoolers' eating practices and activities revealed the importance of parents and teachers in meal, milk, and snack consumption issues. Physical activity was infrequently mentioned by my participants. Pearl's mother believed that her daughter has always climbed up onto the table and run around the house, and that this should be enough exercise for young children like her daughter. A few other parents

mentioned that they believed their children had spent enough time in the kindergarten playground at playtime (approximately 30-40 minutes), and there was no space at home for them to exercise. The Department of Health's guidelines for pre-schoolers' physical activity, adopted from the National Association for Sport and Physical Education (NASPE) (2002), suggest that pre-school-aged children should accumulate a minimum of 60 minutes of structured physical activity on a daily basis. Parents and teachers in my sample did not acknowledge this information, and paid little attention when I tried to ask about physical activity, unlike when the topic was eating. I recommend a study designed to investigate physical activity among pre-schoolers in different contexts to explore why this issue is neglected.

Even though the design of the data collection, covering two semesters over the one-year observation, allowed me to follow changes in the weight and height status of the children in my study, there were no significant changes. Experts with a health background attending my consultation meeting wanted to know about such changes. However, my study offers comprehensive data about children's eating behaviours and the influencing factors and actors around them. Communication with health-sector policymakers and health promoters should be framed in such a way that they can see the benefits of learning the entire set of findings and linking them to policy. I chose to dedicate one chapter to policy implementation using my observation data, which indicate the area of the problem as well as government agencies responsible for the matters.

Adopting EST and ST posed a big challenge regarding how to balance the breadth and depth of the investigation of factors involving childhood obesity in the Thai context.

EST supports a great breadth of influential factors across the social environment's macrosystem, mesosystem and microsystem. Meanwhile ST facilitates understanding issues in depth by offering a theoretical lens on how an agent adopts external structures through a network of position-practices, internalises them and acts accordingly. I decided to balance this by trading the inclusion of all the interesting factors that could have been identified using EST for a selection of important issues to investigate using ST to provide deeper understanding, for example of how parents value fortified milk, and their thinking behind providing pre-schoolers with snack money. There remains a gap in our knowledge for future investigation on issues such as understanding how much a single factor or group of factors influence agents.

8.4 Concluding remarks

I have presented elements of the obesogenic environment at all levels of EST, although mainly the factors at the macrosystem, that influence pre-schoolers' eating practices. These include Thai people's positive values regarding food (thus it should not be wasted); changes in the consumption patterns of Bangkok's population from cooking at home to purchasing ready-to-eat food; marketing strategies employed by fast food companies to attract customers of all ages, and their increasing sales volume and expanding outlets in Bangkok and Thailand; the characteristics of families living in Bangkok with limited networks to support parents' child-rearing and working conditions, which shape their child-rearing practices; and easy access to unhealthy food choices for people across all socio-economic levels (Chapter 3).

I have identified other actors that can influence children's eating practices besides parents, grandparents, other family members, teachers and non-relative caregivers in

this study. These are siblings, peers, kindergarten directors and local authority officers, catering staff and local shopkeepers. The pre-school children's eating practices had distinct characteristics, and strongly involved their caregivers and the social and economic environment in which the children and their families resided. Meanwhile the media, a key channel that transmits values and information regarding food consumption, is a macro-level factor that both children and their caregivers are exposed to. Chapters 4, 5, and 6 have illustrated how individual caregivers and children interact with and react to macro-level factors. These include the food marketing strategies of the food industry, including their use of the media to promote unhealthy food; Thai government policy; the structure of food provision at kindergartens; and the local food environment in the residential area where the children lived with their families. Findings from these chapters revealed how the government's School Lunch Policy and School Milk Policy are implemented at kindergartens, and how private and state kindergartens prepared meals and milk for children according to different drivers, i.e. in response to parents' requests or according to policy and orders. Caregivers' values regarding consumption in each domain strongly influenced their actions. Values and actions were also transmitted to and reproduced by children. Children's agency is another key element of my findings. At kindergarten and in the household, teachers and parents had to deal with children's responses to the food that they were provided with.

Examples of factors at the macro-system level (external structures) that I have identified include the way in which the social and economic environment contributes to the obesogenic environment. This includes marketing strategies that the business sector (both big companies and small local retailers) employs to promote the

consumption of unhealthy products, the working and living conditions of families with pre-schoolers in the Bangkok area, and Thai people's values regarding certain foods (including main meals, milk, and snacks in this study), which the business sector is quick to exploit.

One of the original contributions of my study is that throughout my analysis of main meal, milk, and snack consumption I have presented the children's eating practices as well as the caregivers' feeding practices that were likely to lead to the development of childhood obesity. Under main meals, I explored the reasons behind practices such as feeding children large portions, encouraging them to consume as much as possible, and choosing to present them with high-energy meals without vegetables. Practices such as drinking sweetened milk and giving children money to buy their choice of unhealthy snack that my study found addressed the need to explore and understand whether and how macrosystem factors, e.g. government campaigns and industry advertising and sociocultural factors (e.g. values) influence these practices. I argue that such practices are supported by underlying adult values such as '*eating meals makes children grow and good parents make them eat*', buying expensive fortified milk because '*milk is good for children*', or '*a snack is a treat, let the child choose*'. These values are shaped by government and private-sector policies and campaigns. As I highlighted above, children's agency is another important consideration in the process of meal, milk, and snack consumption. Children of pre-school age can negotiate to achieve the result that they want: eating their preferred dish in their preferred environment. In addition, the children's negotiations are supported by values that are embedded in their parents' child-rearing practices.

One of key benefits of using ST in my analysis has been its concept of a network of position-practice relations which connects external structures with internal structures, as shown in the case of parents internalising the value of milk consumption through the position-practices of teachers, parents and paediatricians. Grouping the findings into these three domains of meals, milk, and snack consumption, and adding a chapter focusing on relevant policy implementation facilitated the discussion of policy implications and the development of recommendations to practitioners and agencies working on relevant issues in Thailand.⁷⁶ For example, the control of snack, sweetened drink and milk advertising is the responsibility of the Thai FDA, while School Lunch Policy is overseen by the Ministry of Education and local authorities. The three domains presented in my study are also the focus of Thai government policies to address undernutrition and control sugar and salt consumption in the Thai population.

Findings about sociocultural factors promoting childhood obesity—values are a significant part of my findings and confirmed that study of sociocultural factors are as important as economic factors and are equally needed for understanding of childhood obesity problem. This increasing problem is complex, involves a number of influential factors which are context-specific and requires in-depth understanding of the root of the problem to guide development of policy and intervention that can best tackle it. I encourage an application of studies aiming to understand the problem rooted in various contexts, especially those settings from the global South where the problem is expanding but with limited evidence to support the design of intervention to tackle the problem.

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List of references

- Academic Resource Center: Thai FDA. (2007). FDA to control the use of public figures in children's food advertisement (in Thai).
- Aekplakorn, W., & Mo-suwan, L. (2009). Prevalence of obesity in Thailand. *Obesity Reviews*, 10, 589-592.
- Allison, J., & Prout, A. (1990). *Constructing and Reconstructing Childhood*. London: Falmer Press.
- ASEAN. (1998). Sixth ASEAN Summit. Ha Noi.
- Ball, K., & Crawford, D. (2006). Socio-economic factors in obesity: a case of slim chance in a fat world? *Asia Pacific journal of clinical nutrition*, 15 Suppl, 15-20.
- Bangkok Metropolitan Administration. (2007). Green space in Bangkok (in Thai).
- Bava, C.M., Jaeger, S.R., & Park, J. (2008). Constraints upon food provisioning practices in 'busy' women's lives: Trade-offs which demand convenience. *Appetite*, 50, 486-498.
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, 13, 544-559.
- Benton, D. (2004). Role of parents in the determination of the food preferences of children and the development of obesity. *International Journal of Obesity*, 28, 858-869.
- Bergmeier, H., Skouteris, H., Horwood, S., Hooley, M., & Richardson, B. (2014). Associations between child temperament, maternal feeding practices and child body mass index during the preschool years: A systematic review of the literature. *Obesity Reviews*, 15, 9-18.
- Birch, L.L. (1999). Development of food preferences. *Annu Rev Nutr*, 19, 41-62.
- Birch, L.L., & Davison, K.K. (2001). Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatric clinics of North America*, 48, 893-907.
- Birch, L.L., Zimmerman, S.I., & Hind, H. (1980). The Influence of Social-Affective Context on the Formation of Children's Food Preferences. *Child development*, 51, 856-861.
- Bisogni, C.A., Connors, M., Devine, C.M., & Sobal, J. (2002). Who We Are and How We Eat: A Qualitative Study of Identities in Food Choice. *Journal of Nutrition Education and Behavior*, 34, 128-139.
- Bisogni, C.A., Jastran, M., Seligson, M., & Thompson, A. (2012). How people interpret healthy eating: contributions of qualitative research. *J Nutr Educ Behav*, 44, 282-301.

- Blanck, H.M., Allen, D., Bashir, Z., Gordon, N., Goodman, A., Merriam, D., et al. (2012). Let's go to the park today: the role of parks in obesity prevention and improving the public's health. *Child Obes*, 8, 423-428.
- BrandAge-thaicoon. (2010). KFC-McDonald-Pizza Hut are changing their standards of fast food (in Thai). (p. 4). Thailand.
- BrandAge-thaicoon. (2014). Big-C and Dutch Mill promote campaign "Drink milk...good for us, good for the world" #2 (in Thai).
- Bronfenbrenner, U. (1974). Developmental Research, Public Policy, and the Ecology of Childhood. *Child development*, 45, 1-5.
- Brown, J.E., Broom, D.H., Nicholson, J.M., & Bittman, M. (2010). Do working mothers raise couch potato kids? Maternal employment and children's lifestyle behaviours and weight in early childhood. *Social Science & Medicine*, 70, 1816-1824.
- Bureau of Health Promotion. (2015a). Guidelines for the implementation of health-promoting school program. In M.o.P.H. Department of Health (Ed.). Nonthaburi, Thailand: Bureau of Health Promotion.
- Bureau of Health Promotion. (2015b). Reports of schools' participation in health-promoting school program.
- Bureau of Information, M.o.P.H. (2015). MoPH encourages Thai people to consume maximum of 4 grams of sugar per day. Ministry of Public Health,.
- Bureau of Labour Standard Development, M.o.L. (2008). LABOUR PROTECTON ACT (NO. 2) B.E. 2551. In Royal Thai Government (Ed.).
- Burgi, F., Meyer, U., Niederer, I., Ebenegger, V., Marques-Vidal, P., Granacher, U., et al. (2010). Socio-cultural determinants of adiposity and physical activity in preschool children: a cross-sectional study. *BMC Public Health*, 10, 733.
- Caballero, B. (2007). The Global Epidemic of Obesity: An Overview. *Epidemiologic Reviews*, 29, 1-5.
- Chan, C., Deave, T., & Greenhalgh, T. (2010a). Childhood obesity in transition zones: an analysis using structuration theory. *Sociology of health & illness*, 32, 711-729.
- Chan, C., Deave, T., & Greenhalgh, T. (2010b). Obesity in Hong Kong Chinese Preschool Children: Where Are All the Nurses? *J Pediatr Nurs*, 25, 264-273.
- Charmaz, K. (2014). *Constructing grounded theory*: Sage.
- Charoen Pokphand Foods PCL. (2011). Annual Report.
- Chavasit, V., Kasemsup, V., & Tontisirin, K. (2013). Thailand conquered under-nutrition very successfully but has not slowed obesity. *Obes Rev*, 14 Suppl 2, 96-105.

- Chen, A.Y., & Escarce, J.J. (2010). Family structure and childhood obesity, early childhood longitudinal study-kindergarten cohort. *Prev Chronic Dis*, 7, A50.
- Chittchang, U. (2012). Guidelines for school food standard and management for Thai children. Institute of Nutrition, Mahidol University,.
- Choiejit, R., & Teungfung, R. (2005). Urban growth and commuting patterns of the poor in Bangkok. Third Urban Research Symposium on Land Development, Urban Policy and Poverty Reduction. World Bank Institute of Applied Economic Research. Brasilia, DF, Brazil.
- Chotivichien, S., Tharmaphornpilas, P., & Sinawat, S. (2005). Evaluation of growth monitoring and promotion (GMP) surveillance system Thailand 2002. *Asia-Pacific journal of public health/Asia-Pacific Academic Consortium for Public Health*, 18, 42-45.
- Christensen, P., & James, A. (2000). Introduction. Researching children and childhood: Cultures of communication. In C.P.a.J. A (Ed.), *Research with Children: Perspectives and Practices*. London and New York: Falmer Press.
- Chungsiriwat, P., & Panapol, V. (2009). Thailand: An industry shaped by government support. In FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, & REGIONAL OFFICE FOR ASIA AND THE PACIFIC (Eds.), *Smallholder dairy development: Lessons learned in Asia*. Bangkok: ANIMAL PRODUCTION AND HEALTH COMMISSION FOR ASIA AND THE PACIFIC,.
- Clark, A. (2010). Young Children as Protagonists and the Role of Participatory, Visual Methods in Engaging Multiple Perspectives. *American journal of community psychology*, 46, 115-123.
- Clark, A., & Statham, J. (2005). Listening to Young Children: Experts in Their Own Lives. *Adoption & Fostering*, 29, 45-56.
- Clark, H.R., Goyder, E., Bissell, P., Blank, L., & Peters, J. (2007). How do parents' child-feeding behaviours influence child weight? Implications for childhood obesity policy. *Journal of Public Health*, 29, 132-141.
- Counihan, C., & Van Esterik, P. (2012). *Food and culture: A reader*. Routledge.
- Critical Appraisal Skills Programme. (2013). CASP Qualitative Research Checklist. CASP.
- Cullen, K.W., Baranowski, T., Rittenberry, L., Cosart, C., Hebert, D., & de Moor, C. (2001). Child-reported family and peer influences on fruit, juice and vegetable consumption: reliability and validity of measures. *Health Education Research*, 16, 187-200.
- Cummins, S.C.J., McKay, L., & MacIntyre, S. (2005). McDonald's Restaurants and Neighborhood Deprivation in Scotland and England. *Am J Prev Med*, 29, 308-310.
- Dairy Farming Promotion Organization of Thailand. (2013). School Milk Management.

- Daniel, P., & Gustafsson, U. (2010). School lunches: children's services or children's spaces? *Children's Geographies*, 8, 265-274.
- Danyliw, A.D., Vatanparast, H., Nikpartow, N., & Whiting, S.J. (2012). Beverage patterns among Canadian children and relationship to overweight and obesity. *Applied Physiology, Nutrition, and Metabolism*, 37, 900-906.
- Davison, K.K., & Birch, L.L. (2001). Childhood overweight: a contextual model and recommendations for future research. *Obesity reviews : an official journal of the International Association for the Study of Obesity*, 2, 159-171.
- Davison, K.K., Blake, C.E., Blaine, R.E., Younginer, N.A., Orloski, A., Hamtil, H.A., et al. (2015). Parenting around child snacking: development of a theoretically-guided, empirically informed conceptual model. *International Journal of Behavioral Nutrition and Physical Activity*, 12, 1.
- de Onis, M., Blossner, M., & Borghi, E. (2010). Global prevalence and trends of overweight and obesity among preschool children. *The American journal of clinical nutrition*, 92, 1257-1264.
- Delormier, T., Frohlich, K.L., & Potvin, L. (2009). Food and eating as social practice – understanding eating patterns as social phenomena and implications for public health. *Sociology of health & illness*, 31, 215-228.
- Dey, I. (1993). *Qualitative data analysis: A user-friendly guide for social scientists*. London: Routledge.
- Dietz, W. (1991). Factors associated with childhood obesity. *Nutrition (Burbank, Calif.)*, 7, 290-291.
- Dietz, W.H. (2006). Sugar-sweetened beverages, milk intake, and obesity in children and adolescents. *The Journal of pediatrics*, 148, 152-154.
- Dinsa, G.D., Goryakin, Y., Fumagalli, E., & Suhrcke, M. (2012). Obesity and socioeconomic status in developing countries: a systematic review. *Obesity Reviews*, 13, 1067-1079.
- Drewnowski, A., Mennella, J.A., Johnson, S.L., & Bellisle, F. (2012). Sweetness and food preference. *The Journal of nutrition*, 142, 1142S-1148S.
- Ebbeling, C.B., Pawlak, D.B., & Ludwig, D.S. (2002). Childhood obesity: public-health crisis, common sense cure. *The Lancet*, 360, 473-482.
- Eide, B.J., & Winger, N. (2005). From the children's point of view: methodological and ethical challenges. In A. Clark, A.T. Kjørholt, & P. Moss (Eds.), *Beyond Listening: Children's perspectives on early childhood services*. Bristol: The Policy Press, University of Bristol.
- Elliott, C. (2014). Food as people: Teenagers' perspectives on food personalities and implications for healthy eating. *Social Science & Medicine*, 121, 85-90.
- Euromonitor International. (2012). Sweet and Savoury Snacks in Thailand

- Euromonitor International. (2015). Drinking Milk Products in Thailand.
- Fayet-Moore, F. (2016). Effect of flavored milk vs plain milk on total milk intake and nutrient provision in children. *Nutrition Reviews*, 74, 1-17.
- FDA. (1979). Food Act.
- FDA. (2004a). Notification No. 286 B.E. 2547 Re: Infant Foods and Follow-up Formula Foods for Infants and Young Children (No.3)
- FDA. (2004b). Notification No. 287 B.E. 2547 Re: Modified Milk for Infants and Follow-up Formula Modified Milk for Infants and Young Children (No.2).
- FDA. (2005). Announcement Re: forbidding the addition of sugar to young children's formula milk B.E. 2548.
- FDA. (2008a). Announcement of the Food and Drug Administration Re: Criteria for Food Advertisement B.E.2551.
- FDA. (2008b). Announcement Re: Criteria for Food Advertising.
- FHP. (2014a). Food and beverage advertisement during children's TV program.
- FHP. (2014b). School food: reasons behind the marketing.
- FHP. (2014c). Survey of lunch management in state kindergartens. Nonthaburi: IHPP.
- Firestone, R., Punpuing, S., Peterson, K.E., Acevedo-Garcia, D., & Gortmaker, S.L. (2011). Child overweight and undernutrition in Thailand: Is there an urban effect? *Social Science & Medicine*, 72, 1420-1428.
- Flurry, L.A., & Veeck, A. (2009). Children's relative influence in family decision making in urban China. *Journal of Macromarketing*, 29, 145-159.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12, 219-245.
- Food Act, B.E. 2522. (1979).
- Food and Drug Administration. (2008). Criteria for Food Advertisement (B.E.2551). In Royal Thai Government (Ed.).
- Food Intelligence Center. (2012). Situation of domestic milk market (in Thai). National Food Institute.
- Ford, C., Ward, D., & White, M. (2012). Television viewing associated with adverse dietary outcomes in children ages 2–6. *Obesity Reviews*, 13, 1139-1147.
- Foundation for Consumer. (2005). Survey of Caffeine in Green Tea.
- Giddens, A. (1981). Agency, institution, and time-space analysis. *Advances in social theory and methodology. Toward an integration of micro-and macro-sociologies*, 161-174.

- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Blackwell Publishing.
- Gomm, R., & Hammersley, M. (2009). Case Study Method Introduction. In R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case Study Method* pp. 1-14). London: SAGE Publications.
- Green, L.W., Richard, L., & Potvin, L. (1996). Ecological Foundations of Health Promotion. *American Journal of Health Promotion*, 10, 270-281.
- Grube, J.W., Mayton, D.M., & Ball-Rokeach, S.J. (1994). Inducing Change in Values, Attitudes, and Behaviors: Belief System Theory and the Method of Value Self-Confrontation. *Journal of Social Issues*, 50, 153-173.
- Grzywacz, J.G., & Fuqua, J. (2000). The Social Ecology of Health: Leverage Points and Linkages. *Behavioral Medicine*, 26, 101-115.
- Guba, E.G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*, 29, 75-91.
- Han, J.C., Lawlor, D.A., & Kimm, S.Y. (2010). Childhood obesity. *Lancet*, 375, 1737-1748.
- Hanks, L.M. (1962). Merit and power in the Thai social order. *American Anthropologist*, 64, 1247-1261.
- Harris, R., Nicoll, A.D., Adair, P.M., & Pine, C.M. (2004). Risk factors for dental caries in young children: a systematic review of the literature. *Community Dent Health*, 21, 71-85.
- Harrison, K., Bost, K.K., McBride, B.A., Donovan, S.M., Grigsby-Toussaint, D.S., Kim, J., et al. (2011). Toward a Developmental Conceptualization of Contributors to Overweight and Obesity in Childhood: The Six-Cs Model. *Child Development Perspectives*, 5, 50-58.
- Hayter, A.K., Draper, A.K., Ohly, H.R., Rees, G.A., Pettinger, C., McGlone, P., et al. (2015). A qualitative study exploring parental accounts of feeding pre-school children in two low-income populations in the UK. *Matern Child Nutr*, 11, 371-384.
- Health Focus. (2014). Increase in sugar consumption among Thai people (in Thai).
- Hesse-Swain, C. (2006). Programming beauty and the absence of Na Lao: popular Thai TV and identity formation among youth in Northeast Thailand. *GeoJournal*, 66, 257-272.
- Hodal, K. (2013). Thais told to drink milk to boost height. *the Guardian*.
- Howard, K.M. (2009). "When meeting Khun teacher, each time we should pay respect": Standardizing respect in a Northern Thai classroom. *Linguistics and Education*, 20, 254-272.

- Hunsberger, M., Lanfer, A., Reeske, A., Veidebaum, T., Russo, P., Hadjigeorgiou, C., et al. (2013). Infant feeding practices and prevalence of obesity in eight European countries—the IDEFICS study. *Public Health Nutrition*, 16, 219-227.
- Institute for Population and Social Research. (2014). Thai Health Report 2014 (in Thai). Nakonprathom: Institute for Population and Social Research, Mahidol University.
- Issaranurak, S., & Suthisukon, P. (2007). Child rearing (in Thai). *Journal of Public Health and Development*, 5, 105-118.
- Jaichuen, N. (2013). Advertising Regulations Related to Food and Drinks with High Sugar, Fat and Sodium in Thailand and Foreign countries. IHPP.
- Jaichuen, N., & Kunpeuk, W. (2013). Revealing marketing strategies of top three high calorie-food business: tricking adults, trapping children (in Thai). In T. Thamarangsri, & S. Pulkerd (Eds.). Nonthaburi: International Health Policy Program (IHPP).
- Jingxiong, J., Rosenqvist, U., Huishan, W., Greiner, T., Guangli, L., & Sarkadi, A. (2007). Influence of grandparents on eating behaviors of young children in Chinese three-generation families. *Appetite*, 48, 377-383.
- Johnson, S.L., McPhee, L., & Birch, L.L. (1991). Conditioned preferences: Young children prefer flavors associated with high dietary fat. *Physiology & Behavior*, 50, 1245-1251.
- Jordan, A. (2004). The role of media in children's development: An ecological perspective. *Journal of Developmental & Behavioral Pediatrics*, 25, 196-206.
- Kachondham, Y., Winichagoon, P., & Tontisirin, K. (1992). Nutrition and Health in Thailand: Trends and action Institute of Nutrition, Mahidol University.
- Kail, R.V. (2010). Family relationship. Children and their development. New Jersey: Pearson Prentice Hall.
- Kammungkhun, S. (2009). School Milk Project. Hot Issue: National Assembly Library, The Parliament of Thailand.
- Kaufman, L., & Karpati, A. (2007). Understanding the sociocultural roots of childhood obesity: Food practices among Latino families of Bushwick, Brooklyn. *Social Science & Medicine*, 64, 2177-2188.
- Keenan, J., & Stapleton, H. (2009). 'It depends on what you mean by "feeding on demand" ': Mothers' accounts of babies' agency in infant-feeding relationships. In A. James, A.-T. Kjørholt, & V. Tingstad (Eds.), Children, Food and Identity in Everyday Life: Palgrave Macmillan.
- Kelly, B., Halford, J.C., Boyland, E.J., Chapman, K., Bautista-Castano, I., Berg, C., et al. (2010). Television food advertising to children: a global perspective. *Am J Public Health*, 100, 1730-1736.

- Kern, D.L., McPhee, L., Fisher, J., Johnson, S., & Birch, L.L. (1993). The postigestive consequences of fat condition preferences for flavors associated with high dietary fat. *Physiology & Behavior*, 54, 71-76.
- Keyes, C. (1984). Mother or Mistress but Never a Monk: Buddhist Notions of Female Gender in Rural Thailand. *American Ethnologist*, 11, 223_241.
- Khader, Y., Irshaidat, O., Khasawneh, M., Amarin, Z., Alomari, M., & Batieha, A. (2009). Overweight and obesity among school children in Jordan: prevalence and associated factors. *Maternal and Child Health Journal*, 13, 424-431.
- Kleiser, C., Schaffrath Rosario, A., Mensink, G.B., Prinz-Langenohl, R., & Kurth, B.M. (2009). Potential determinants of obesity among children and adolescents in Germany: results from the cross-sectional KiGGS Study. *BMC Public Health*, 9, 46.
- Korwanich, K., Sheiham, A., Srisuphan, W., & Srisilapanan, P. (2007). Opinions of parents, teachers and school board members regarding healthy eating: A qualitative investigation of lay Thai people's perspectives. *Journal of the Medical Association of Thailand*, 90, 1014-1020.
- Kotnongbua B. (2011). The direction of sugar consumption among Thai people (in Thai). Bank of Thailand.
- Kramomthong, P., Palitakul, N., & Surakiat, S. (2002). The Evaluation of Health Promoting School Project (1998-2001). Nonthaburi: Department of Health.
- Kristjansson, E.A., Robinson, V., Petticrew, M., MacDonald, B., Krasevec, J., Janzen, L., et al. (2007). School feeding for improving the physical and psychosocial health of disadvantaged elementary school children. *Cochrane Database Syst Rev*, CD004676.
- Krølner, R., Rasmussen, M., Brug, J., Klepp, K.-I., Wind, M., & Due, P. (2011). Determinants of fruit and vegetable consumption among children and adolescents: a review of the literature. Part II: qualitative studies. *International Journal of Behavioral Nutrition and Physical Activity*, 8, 1.
- Krongkaew, M. (1995). The urbanization of Bangkok: Its prominence, problems, and prospects. In F.-c. Lo, & Y.-m. Yeung (Eds.), *Emerging World Cities in Pacific Asia*: United Nations University Press.
- Kumanyika, S.K. (2008). Environmental influences on childhood obesity: Ethnic and cultural influences in context. *Physiology & Behavior*, 94, 61-70.
- Lake, A., & Townshend, T. (2006). Obesogenic environments: exploring the built and food environments. *J R Soc Promot Health*, 126, 262-267.
- Larson, N.I., Story, M.T., & Nelson, M.C. (2009). Neighborhood Environments: Disparities in Access to Healthy Foods in the U.S. *Am J Prev Med*, 36, 74-81.e10.

- Lee, A., Mhurchu, C.N., Sacks, G., Swinburn, B., Snowdon, W., Vandevijvere, S., et al. (2013). Monitoring the price and affordability of foods and diets globally. *Obesity Reviews*, 14, 82-95.
- Lee, G., & Kim, H.-R. (2013). Mothers' working hours and children's obesity: Data from the Korean National Health and Nutrition Examination Survey, 2008–2010. *Annals of occupational and environmental medicine*, 25, 1.
- Lee, H., Lee, S., & Park, E. (2015). Do family meals affect childhood overweight or obesity?: nationwide survey 2008–2012. *Pediatric Obesity*.
- Liu, E., Hsiao, C., Matsumoto, T., & Chou, S. (2009). Maternal full-time employment and overweight children: Parametric, semi-parametric, and non-parametric assessment. *Journal of Econometrics*, 152, 61-69.
- Ludwig, D.S., Peterson, K.E., & Gortmaker, S.L. (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *The Lancet*, 357, 505-508.
- Macdonald, L., Cummins, S., & Macintyre, S. (2007). Neighbourhood fast food environment and area deprivation—substitution or concentration? *Appetite*, 49, 251-254.
- Macintyre, S., McKay, L., Cummins, S., & Burns, C. (2005). Out-of-home food outlets and area deprivation: case study in Glasgow, UK. *The international journal of behavioral nutrition and physical activity*, 2, 16-16.
- Malik, V.S., Schulze, M.B., & Hu, F.B. (2006). Intake of sugar-sweetened beverages and weight gain: a systematic review. *The American journal of clinical nutrition*, 84, 274-288.
- Manager Online. (2015a). The expansion of children's milk market: F&N to invest in new plant.
- Manager Online. (2015b). UHT Milk Market Booming.
- Markström, A.M., & Halldén, G. (2009). Children's strategies for agency in preschool. *Children & Society*, 23, 112-122.
- Mauthner, M. (1997). Methodological aspects of collecting data from children: lessons from three research projects. *Children & Society*, 11, 16-28.
- Maziak, W., Ward, K.D., & Stockton, M.B. (2008). Childhood obesity: are we missing the big picture? *Obesity Reviews*, 9, 35-42.
- McKechnie, L. (2000). Ethnographic Observation of Preschool Children. *Library & Information Science Research*, 22, 61-76.
- McThai. (2013). McDonald's Restaurant Location in Thailand.
- Millei, Z. (2012). Thinking differently about guidance: Power, children's autonomy and democratic environments. *Journal of Early Childhood Research*, 10, 88-99.

Ministry of Education. (1999). Education Act (B.E. 2542). In Royal Thai Government (Ed.).

Ministry of Education. (2002). Ninth National Education Plan (2002-2014).

Ministry of Education. (2010). National educational standard for preschool level.

Ministry of Foreign Affairs. (2014). Thailand: Kitchen of the World.

Miyahara, J., & Meyers, C. (2008). Early Learning and Development Standards in East Asia and the Pacific: Experiences from eight countries. *International Journal of Early Childhood*, 40, 17-31.

Mo-Suwan, L., Isranurug, S., Ruengdaraganond, N., Nantamongkonchai, S., Sa-nga, P., Nitiruengchars, K., et al. (2004). Holistic development of Thai children: its association with family factors and child rearing. Bangkok: Thailand Research Fund.

Monasta, L., Batty, G.D., Cattaneo, A., Lutje, V., Ronfani, L., Van Lenthe, F.J., et al. (2010). Early-life determinants of overweight and obesity: a review of systematic reviews. *Obesity Reviews*, 11, 695-708.

Monteiro, C.A., Moura, E.C., Conde, W.L., & Popkin, B.M. (2004). Socioeconomic status and obesity in adult populations of developing countries: a review. *Bulletin of the World Health Organization*, 82, 940-946.

Montreuil, M., & Carnevale, F.A. (2016). A concept analysis of children's agency within the health literature. *Journal of Child Health Care*, 20, 503-511.

MoPH. (2007). MoPH Notification (No. 305) Re. the labelling of some kinds of ready-to-eat foods. In M.o.P. Health (Ed.), 305. Bangkok.

Moreno, L.A., Tomas, C., Gonzalez-Gross, M., Bueno, G., Perez-Gonzalez, J.M., & Bueno, M. (2004). Micro-environmental and socio-demographic determinants of childhood obesity. *Int J Obes Relat Metab Disord*, 28, S16-S20.

Namtien, F., & Jaroenkul, N. (2014). Factors affecting parents' decision; sending their children to private kindergartens in Bangkok. *Online Journal Of Education*, 9.

Nanthamongkolchai, S., Munsawaengsub, C., & Nanthamongkolchai, C. (2009). Influence of child rearing by grandparent on the development of children aged six to twelve years. *Journal of the Medical Association of Thailand = Chotmaihet thangphaet*, 92, 430-434.

National Broadcasting and Telecommunications Commission. (2008). Thai Public Broadcasting Service Act, B.E. 2551. In Royal Thai Government (Ed.).

National Economic and Social Development Board. (2007). Summary of the Tenth National Economic and Social Development Plan (2007-2011). Bangkok.

- National Health Examination Survey Network. (1997). The Second National Health Examination Survey of Thailand, 1996-1997. Bangkok: National Health Examination Survey Office.
- National Health Examination Survey Network. (2010). The Fourth National Health Examination Survey of Thailand, 2008-2009. Bangkok: National Health Examination Survey Office.
- National Health Examination Survey Network. (2011). Food consumption of Thai population, 2008-2009. Bangkok: National Health Examination Survey Office.
- National Statistical Office. (2007). A Survey of Children Situation in Thailand, December 2005-February 2006.
- National Statistical Office. (2010). Population and Housing Census. Bangkok.
- National Statistical Office. (2013a). The 2013 Household Socio-Economic Survey (Whole Kingdom). Bangkok.
- National Statistical Office. (2013b). A Survey of Women and Children Situation in Thailand 2012. Thailand: National Statistical Office, UNICEF, MOPH, NHSO, THPF, IHPP.
- Neter, J.E., Schokker, D.F., de Jong, E., Renders, C.M., Seidell, J.C., & Visscher, T.L. (2011). The prevalence of overweight and obesity and its determinants in children with and without disabilities. *The Journal of pediatrics*, 158, 735-739.
- Nicklaus, S., Boggio, V., Chabanet, C., & Issanchou, S. (2005). A prospective study of food variety seeking in childhood, adolescence and early adult life. *Appetite*, 44, 289-297.
- Office of Basic Education Commission. Management of School Lunch Budget of the School Lunch Policy.
- ONESQA. (2014). Guidelines for external quality assessment of educational facilities for preschool children 2011-2015.
- Patrick, H., & Nicklas, T.A. (2005). A Review of Family and Social Determinants of Children's Eating Patterns and Diet Quality. *Journal of the American College of Nutrition*, 24, 83-92.
- Patrick, H., Nicklas, T.A., Hughes, S.O., & Morales, M. (2005). The benefits of authoritative feeding style: caregiver feeding styles and children's food consumption patterns. *Appetite*, 44, 243-249.
- Pearce, J., Blakely, T., Witten, K., & Bartie, P. (2007). Neighborhood Deprivation and Access to Fast-Food Retailing: A National Study. *Am J Prev Med*, 32, 375-382.
- Peungposop, N., Wongboonsin, K., & Kost, G.J. (2011). National policies and obstacles for overnutrition control among school children in Thailand (in Thai). *Journal of Public Health and Development*, 9, 55-71.

- Phipps, S.A., Lethbridge, L., & Burton, P. (2006). Long-run consequences of parental paid work hours for child overweight status in Canada. *Social Science & Medicine*, 62, 977-986.
- Pitayatienanan, P., Butchon, R., Yothasamut, J., Aekplakorn, W., Teerawattananon, Y., Suksomboon, N., et al. (2011). Impact of overweight and obesity on health care cost in Thailand. Nonthaburi: Health Intervention and Technology Assessment Program.
- Popkin, B.M., Duffey, K., & Gordon-Larsen, P. (2005). Environmental influences on food choice, physical activity and energy balance. *Physiol Behav*, 86, 603-613.
- Powell, L.M., Slater, S., Mirtcheva, D., Bao, Y., & Chaloupka, F.J. (2007). Food store availability and neighborhood characteristics in the United States. *Prev Med*, 44, 189-195.
- Prasertsom, P. (2007). Sugar and sweeteners in children's beverages and milk products. Bureau of Dental Health,.
- Procter, K.L., Clarke, G.P., Ransley, J.K., & Cade, J. (2008). Micro-level analysis of childhood obesity, diet, physical activity, residential socioeconomic and social capital variables: where are the obesogenic environments in Leeds? *Area*, 40, 323-340.
- Punitha, V., Amudhan, A., Sivaprakasam, P., & Rathnraprabhu, V. (2014). Pocket Money: Influence on Body Mass Index and Dental Caries among Urban Adolescents. *Journal of clinical and diagnostic research: JCDR*, 8, JC10.
- Qvortrup, J., Corsaro, W.A., & Honig, M.-S. (2009). *The Palgrave Handbook of Childhood Studies*. New York: Palgrave Macmillan.
- Rachapaetayakom, J. (1988). Changing roles of women: reproduction to production. *Popul Manag*, 2, 18-27.
- Rennie, K.L., Johnson, L., & Jebb, S.A. (2005). Behavioural determinants of obesity. *Best practice & research. Clinical endocrinology & metabolism*, 19, 343-358.
- Reynaert, D., Bouverne-de-Bie, M., & Vandevelde, S. (2009). A Review of Children's Rights Literature Since the Adoption of the United Nations Convention on the Rights of the Child. *Childhood*, 16, 518-534.
- Rhee, K. (2008). Childhood Overweight and the Relationship between Parent Behaviors, Parenting Style, and Family Functioning. *The ANNALS of the American Academy of Political and Social Science*, 615, 11-37.
- Rice, P., & Gunstone, R. (1986). Health and sickness causation and the influence of Thai culture among Thai schoolchildren. *Research in Science Education*, 16, 63-72.
- Richter, K., & Podhisita, C. (1992). Thai Family Demography: A Review and Research Prospects. *Journal of Population and Social Studies*, 3, 1-19.

- Richter, K., Podhisita, C., Soonthorndhada, K., & Chamratrithirong, A. (1992). Child care in urban Thailand: choice and constraints in a changing society. Nakhonpathom: Institute for Population and Social Research, Mahidol University.
- Robinson, A., Denney-Wilson, E., Laws, R., & Harris, M. (2013). Child obesity prevention in primary health care: Investigating practice nurse roles, attitudes and current practices. *Journal of paediatrics and child health*, 49, E294-E299.
- Rollins, B.Y., Loken, E., Savage, J.S., & Birch, L.L. (2014). Effects of restriction on children's intake differ by child temperament, food reinforcement, and parent's chronic use of restriction. *Appetite*, 73, 31-39.
- Sallis, J.F., Floyd, M.F., Rodríguez, D.A., & Saelens, B.E. (2012). Role of Built Environments in Physical Activity, Obesity, and Cardiovascular Disease. *Circulation*, 125, 729-737.
- Savage, J.S., Fisher, J.O., & Birch, L.L. (2007). Parental influence on eating behavior: conception to adolescence. *The Journal of Law, Medicine & Ethics*, 35, 22-34.
- Scaglioni, S., Arrizza, C., Vecchi, F., & Tedeschi, S. (2011). Determinants of children's eating behavior. *The American journal of clinical nutrition*, 94, 2006S-2011S.
- Schmelzer, L., & Krishnagiri, S. (2014). Exploring the Complexities of Promoting Health in Families in an Obesogenic Environment. *OTJR: Occupation, Participation and Health*, 34, 61-71.
- Sharma, M., & Ickes, M.J. (2008). Psychosocial Determinants of Childhood and Adolescent Obesity. *Journal of Social, Behavioral, and Health Sciences*, 2, 33-49.
- Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, 22, 63-75.
- Shrewsbury, V., & Wardle, J. (2008). Socioeconomic Status and Adiposity in Childhood: A Systematic Review of Cross-sectional Studies 1990–2005. *Obesity*, 16, 275-284.
- Sirichakkrawal, P., & Sutatworawut, U. (2012). Food-Based Dietary Guidelines: Review and Analysis. In M.o.P.H. Department of Health (Ed.).
- Sirikulchayanonta, C., Ratanopas, W., Temcharoen, P., & Srisorrachatr, S. (2011). Self discipline and obesity in Bangkok school children. *BMC Public Health*, 11, 158.
- Skafida, V. (2013). The family meal panacea: exploring how different aspects of family meal occurrence, meal habits and meal enjoyment relate to young children's diets. *Sociology of health & illness*.
- Slater, J., Sevenhuijsen, G., Edginton, B., & O'Neil, J. (2012). 'Trying to make it all come together': structuration and employed mothers' experience of family food provisioning in Canada. *Health Promotion International*, 27, 405-415.

- Sleddens, E.F.C., Gerards, S.M.P.L., Thijs, C., de Vries, N.K., & Kremers, S.P.J. (2011). General parenting, childhood overweight and obesity-inducing behaviors: A review. *International Journal of Pediatric Obesity*, 6, e12-e27.
- Smitasiri, S., & Chotiboriboon, S. (2003). Experience with Programs to Increase Animal Source Food Intake in Thailand. *The Journal of nutrition*, 4000-4005s.
- Sowattanangoon, N., Kotchabhakdi, N., & Petrie, K.J. (2009). The influence of Thai culture on diabetes perceptions and management. *Diabetes research and clinical practice*, 84, 245-251.
- Spradley, J.P. (1980). *Participant Observation*. Wadsworth: Cengage Learning.
- Stamatakis, E., Wardle, J., & Cole, T.J. (2010). Childhood obesity and overweight prevalence trends in England: evidence for growing socioeconomic disparities. *International Journal of Obesity*, 34, 41-47.
- Stones, R. (2005). *Structuration Theory*. Basingstoke: Palgrave-Macmillan.
- Sawanabol, I. (2005). School Milk Programme in Thailand. The 3rd International School Milk Conference. Kunming. China FAO.
- Swanson, P.G. (2010). *Case Study Research What, Why and How?* London: SAGE Publications Ltd.
- Swinburn, B., Egger, G., & Raza, F. (1999). Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Prev Med*, 29, 563-570.
- Tabacchi, G., Giannanco, S., La Guardia, M., & Giannanco, M. (2007). A review of the literature and a new classification of the early determinants of childhood obesity: from pregnancy to the first years of life. *Nutrition Research*, 27, 587-604.
- Taha, A., & Marawan, H. (2015). Socio-behavioral Determinants of Overweight and Obesity in Egyptian Primary School Children. *J Child Adolesc Behav*, 3, 2.
- Tapanya, S. (2011). Attributions and Attitudes of Mothers and Fathers in Thailand. *Parenting, science and practice*, 11, 190-198.
- Thai Public Broadcasting Service Act, B.E. 2551. (2008).
- The Information and Public Relations Office. (2014). MoPH revealed Thais' low average height and IQ due to low milk consumption of 14ltr per person per year - 4-7 times lower than other Asian countries and the world. Ministry of Public Health.
- the National Association for Sport and Physical Education (NASPE). (2002). Active Start: A Statement of Physical Activity Guidelines for Children Birth to Five Years.

- Tinanoff, N., & Palmer, C.A. (2000). Dietary Determinants of Dental Caries and Dietary Recommendations for Preschool Children. *Journal of Public Health Dentistry*, 60, 197-206.
- Trakulwong, P., Damme, D., Tasi, P., & Inpaibul, S. (2007). Development of Services in Center for Child Development under the Local Authorities (in Thai). In S. Issaranurak (Ed.). Bangkok: ASEAN Institute for Health Development, Mahidol University.
- Tulananda, O., & Roopnarine, J.L. (2001). Mothers' and fathers' interactions with preschoolers in the home in northern Thailand: Relationships to teachers' assessments of children's social skills. *Journal of family psychology : JFP : journal of the Division of Family Psychology of the American Psychological Association*, 15, 676-687.
- Vaida, N. (2013). Prevalence Of Obesity Among Children Studying In Government And Private Schools In District Anantnag Age Group (6-12 Years). *Prevalence*, 3, 04-11.
- Van Esterik, P. (1997). Women and nurture in industrial societies. *Proceedings of the Nutrition Society*, 56, 335-343.
- Van Esterik, P. (2000). *Materializing Thailand*. Oxford: Berg.
- Vandenbroeck, M., & Bie, M.B.-D. (2006). Children's Agency and Educational Norms: A tensed negotiation. *Childhood*, 13, 127-143.
- Ventura, A.K., & Birch, L.L. (2008). Does parenting affect children's eating and weight status? *The international journal of behavioral nutrition and physical activity*, 5, 15.
- Ventura, A.K., & Mennella, J.A. (2011). Innate and learned preferences for sweet taste during childhood. *Current Opinion in Clinical Nutrition & Metabolic Care*, 14, 379-384.
- Walker, M. (1996). A Survey of Food Consumption in Thailand. (p. 18). Victoria, BC: Faculty of Human & Social Development, University of Victoria.
- Wang, Y., & Beydoun, M.A. (2007). The obesity epidemic in the United States—gender, age, socioeconomic, racial/ethnic, and geographic characteristics: a systematic review and meta-regression analysis. *Epidemiologic Reviews*, 29, 6-28.
- Wang, Y., Li, J., & Caballero, B. (2009). Resemblance in dietary intakes between urban low-income African-American adolescents and their mothers: the healthy eating and active lifestyles from school to home for kids study. *Journal of the American Dietetic Association*, 109, 52-63.
- Wang, Y., Liang, H., Tussing, L., Braunschweig, C., Caballero, B., & Flay, B. (2007). Obesity and related risk factors among low socio-economic status minority students in Chicago. *Public Health Nutrition*, 10, 927-938.

- Warin, M., Turner, K., Moore, V., & Davies, M. (2008). Bodies, mothers and identities: rethinking obesity and the BMI. *Sociology of health & illness*, 30, 97-111.
- Warming, H. (2011). Getting under their skins? Accessing young children's perspectives through ethnographic fieldwork. *Childhood*, 18, 39-53.
- Waters, E., Swinburn, B., Seidell, J., & Uauy, R. (2010). *Preventing Childhood Obesity: Evidence Policy and Practice*: Wiley.
- Wilkinson, R.G., & Marmot, M. (2003). *Social determinants of health: the solid facts*: World Health Organization.
- Williams, J., Scarborough, P., Matthews, A., Cowburn, G., Foster, C., Roberts, N., et al. (2014). A systematic review of the influence of the retail food environment around schools on obesity-related outcomes. *Obesity Reviews*, 15, 359-374.
- Wills, W., Backett-Milburn, K., Roberts, M.-L., & Lawton, J. (2011). The framing of social class distinctions through family food and eating practices. *The Sociological Review*, 59, 725-740.
- Wongboonsin, K. (1991). Women's Work and the Need for Child Care Among Prekindergarten Children in Bangkok Metropolitan Area (in Thai) Bangkok: College of Population Studies, Chulalongkorn University.
- Working Group on Food Based Dietary Guideline for Thai. (1998). Food Based Dietary Guideline for Thai. Bangkok: Institute of Nutrition, Mahidol University, and the Nutrition Division, Department of Health, Ministry of Public Health.
- World Health Organization. (1998). Health Promotion Glossary. Geneva: World Health Organization.
- World Health Organization. (2005). Preventing chronic diseases: A vital investment. Geneva: World Health Organization.
- World Health Organization. (2012). Global Plan of Action on Social Determinants of Health.
- Yasmeen, G. (2000). Not 'From Scratch': Thai food systems and 'public eating'. *Journal of Intercultural Studies*, 21, 341-352.
- Yin, R.K. (2013). *Case study research: Design and methods*: Sage publications.

Appendix

Appendix 1: Data of children

School code	Household code	Name in report	Code	Weight/Height Status
Temple Side Kindergarten (S1)	Household 1 (H1)	Bright	S1H1	Overweight
	Household 2 (H2)	Jan	S1H2	Average weight for height
	Household 3 (H3)	Tam	S1H3	Borderline obese
	Household 3 (H3)	Nid	S1H4 (2)	Average weight for height
	Household 4 (H4)	Pond	S1H5	Average weight for height
	Household 5 (H5)	Jew	S1H6	Average weight for height
New Market Kindergarten (S2)	Household 1 (H1)	Sand	S2H1	Average weight for height
	Household 2 (H2)	Ice	S2H2	Underweight
	Household 3 (H3)	Tuinui	S2H3	Overweight
	Household 4 (H4)	Aim	S2H4	Obese
	Household 5 (H5)	Kao	S2H5	Borderline obese
	Household 5 (H5)	April	S2H5 (2)	Average weight for height
Private Land Kindergarten (S3)	Household 1 (H1)	Neutron	S3H1	Average weight for height
	Household 2 (H2)	Liz	S3H2	Average weight for height
	Household 3 (H3)	Tutor	S3H3	Borderline obese
	Household 4 (H4)	Pearl	S3H5	Borderline obese
	Household 5 (H5)	Tintin	S3H6	Underweight
	Household 6 (H6)	Minnie	S3H7	Borderline obese

Interpretation

Obese	(>+3 SD.)
Borderline obese	(>+2 SD. to +3 SD.)
Overweight	(>+1.5 SD. to +2 SD.)
Average weight for height	(-1.5 SD. to +1.5 SD.)
Borderline underweight	(<-1.5 SD. to -2 SD.)
Underweight	(<-2 SD.)

Appendix 2: Households and food consumption information

Name	Family characteristic	Main caregivers	Characteristics defined by teachers and parents	Milk per day (cartons)	Type s of milk
Bright	Nuclear family (living with grandparents)	Grandparents	Easy eater (eat only easy dishes), big portion	2	P/F
Jan	Extended family (single mother)	Mother	Difficult child, picky eater	1	N
Tam	Extended family	Grandmother	Easy eater (eat only easy dishes), big portion	4	P
Nid	Extended family	Grandmother	Easy eater (eat everything)	2	P
Pond	Extended family	Grandmother	Easy eater (eat everything)	2	S/F
Jew	Extended family	Mother	Easy child, easy eater (eat everything)	2	P
Sand	Nuclear family	Father+Mother	Easy eater (eat everything)	2	P
Ice	Nuclear family	Mother	Easy eater (eat only easy dishes)	1	N
Tuinui	Extended family	Mother	Easy eater (eat everything), big portion	4	S
Aim	Extended family	Mother	Easy eater (eat only easy dishes), big portion	5	P/S
Kao	Nuclear Family	Father+Mother	Easy eater (eat only easy dishes), big portion	6	P
April	Nuclear Family	Father+Mother	Easy eater (eat only easy dishes)	6	P
Neutron	Extended family	Mother	Easy eater (eat only easy dishes)	3	S/A
Liz	Nuclear Family	Father+Mother	Difficult eater (eat few types of food)	2	S
Tutor	Nuclear Family	Mother	Easy eater (eat everything), big portion	3	F
Pearl	Nuclear Family	Father+Mother	Easy eater (eat everything), big portion	1	A/S
Tintin	Nuclear Family (single mother)	Mother	Difficult eater (barely eat)	2	S
Minnie	Nuclear Family	Father+Mother	Easy eater (eat everything), big portion	8	P

P=Plain milk

F=Fortified milk

S=Sweetened milk

A=Alternative milk drinks, e.g. soya milk

N=Not drink

Appendix 3: Details of times and places of observation and list of interviewees

Kindergarten/ Children	Times and places of observation	Interviewees
Temple Side Kindergarten	February–April 2014 (plus ad hoc visits)	Teacher 1 Teacher 2 Teacher 3 School director Local authority officer Chef
New Market Kindergarten	November 2013– January 2014 (plus ad hoc visits)	Teacher 1 Teacher 2 Teacher 3 School director Chef
Private Land Kindergarten	May–July 2014 (plus ad hoc visits)	Teacher 1 Teacher 2 Teacher 3 Kindergarten director Kindergarten owner Chef
Bright	4 (home, community playground, grocery shop)	Grandfather Grandmother
Jan	4 (home, community playground, grocery shop)	Mother Grandfather
Tam Nid	4 (home, grocery shop)	Grandmother Aunt
Pond	2 (home)	Grandmother
Jew	2 (kindergarten's play area, home)	Mother
Sand	4 (home, playground)	Father Mother
Ice	2 (home)	Mother
Tuinui	2 (swimming pool, home)	Mother
Aim	3 (home, kindergarten's play area)	Mother
Kao April	3 (home, kindergarten's play area)	Father Mother
Neutron	4 (home)	Mother Aunt Housemaid
Liz	4 (home)	Father Mother Grandmother
Tutor	2 (home)	Mother Father

Kindergarten/ Children	Times and places of observation	Interviewees
Pearl	2 (home)	Mother
		Father
Tintin	2 (home)	Mother
Minnie	2 (home)	Mother
		Father

Appendix 4: Summary of influential factors identified from this study

	<p><u>Government-driven factors</u></p> <ul style="list-style-type: none"> • School lunch scheme • Guidelines and tools to support the scheme • Growth monitoring policy • School milk policy • National campaigns, e.g. World Milk Day • Control of snacks advertisement • Health Promotion School (fizzy-drink free school) 	<p><u>Industry-driven factors</u></p> <ul style="list-style-type: none"> • Food environment (accessibility) • Food, milk and snacks marketing strategies 	<p><u>Values</u></p> <ul style="list-style-type: none"> • Eating main meal makes children grow; milk makes children tall and smart • Roles of parents in providing care: good parents provide milk to children • Food including milk is valuable; do not throw away • Children's food is easy and non-vegetables food • Let children choose and responsible for their choice (food) • Fortified milk makes children smart • Provision of snacks to children is a common practice • Snack is a daily treat and for special occasions • Children may not have enough food when out of parents' care
Macro system	Kindergarten	Community	Household
Meso and micro system	<ul style="list-style-type: none"> • Kindergarten's policy on main meal, milk and snacks provision • Routine meal, milk, and snacks consumption • Rules for milk drinking—not wasting milk • Policy on running snacks stall within kindergartens 	<ul style="list-style-type: none"> • Easy accessibility to food and snacks at community level • Milk packages that attract children • Taste of milk that children prefer • Variety of channels that children can access to snacks 	<ul style="list-style-type: none"> • Socio-economic conditions of families • Family structure • Child-rearing principles in the family • Experiences, knowledge and information of parents e.g. consultation with pediatrician versus get information from personal experiences • Provision of snack money; children can choose snacks they like • Provision of snacks to children, with limited budget
Practices leading to imbalanced consumption	<p><u>Main meal</u></p> <ul style="list-style-type: none"> • Big meal portion at home • Eat in front of TV/iPad • Eat non-vegetable dishes • Eat energy-dense food 	<p><u>Milk</u></p> <ul style="list-style-type: none"> • Overconsumption of milk • Consumption of sweetened milk • Seeking for fortified milk 	<p><u>Snacks</u></p> <ul style="list-style-type: none"> • Having unhealthy snacks (Adults rewarding/giving unhealthy snacks as a treat) • Substitute main meal with snacks
A child	Children's agency		
	<ul style="list-style-type: none"> • Learn to negotiate for preferred options in each domain • Adopt messages from adults, e.g. milk can make children grow and tall • Children perceive snacking is their routine (eligible to have one) • Preferences towards snacks are driven by marketing strategies, personal preferences, parents, peers or siblings influences • Children use snack for socialization with peers 		

Appendix 5: Ethic approval form



REVIEW REPORT AND DECISION - PART B

UNIVERSITY OF EAST ANGLIA
INTERNATIONAL DEVELOPMENT RESEARCH ETHICS COMMITTEE

To be completed by the applicant

Forename	Jomkwan
Surname	Yothasamut
Student ID number (if applicable)	3000044
UG, PGT or PGR (if applicable)	PGR
Supervisor (if applicable)	Dr Laura Camfield Dr Michael Pfeil
Project Title	Understanding of factors and actors which influence obesity among pre-schoolers in urban Thailand

REVIEWERS RECOMMENDATION ()

To be completed by the Ethics Committee

Accept	✓
Request modifications	
Reject	

REVIEWERS' CHECKLIST

Delete as appropriate

Risks and inconvenience to participants are minimised and not unreasonable given the research question/ project purpose.	✓	
All relevant ethical issues are acknowledged and understood by the researcher.	✓	
Procedures for informed consent are sufficient and appropriate	✓	

REVIEWERS' COMMENTS

The comments made in the 25th May review have been addressed. Do ensure that the translated text is sensitively worded, but it does make sense to mention eating habits so participants are not surprised by the nature of the questions you ask.

COMMITTEE'S RECOMMENDATION

Ethical approval granted

SIGNATURE (CHAIR OF THE INTERNATIONAL DEVELOPMENT ETHICS COMMITTEE)

Signature	Date
	28 th May 2013