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**Behavior patterns concerning plate waste and
possible improving mechanism in buffet restaurants**

Case study of Amica restaurant



Master thesis in Service Management

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Abstract

Background –There has been an internationally growing concern over food waste in recent years as such wasteful behavior negatively jeopardizes the world sustainability in terms of the environment, the economy as well as the society. There are plenty of literatures on food waste concerning the causes and the possible improving strategies. However, the research on buffet restaurants is still underdeveloped. Buffet is well-known for its all-you-can-eat business model. Therefore, the associated phenomenon of overeating and plate waste is common.

Purpose –The purpose of this thesis is two-fold. Firstly, the author seeks to provide an interpretation of the reasons behind the plate waste in buffet restaurant setting. In addition, the author is interested at qualitatively finding out the relationship between lunch discount and customers' perceptions on plate waste reduction.

Method –Semi-structured interviews with ten participants were conducted respectively at Amica restaurant to collect empirical data. The collected data was analyzed and discussed together with the theory.

Conclusion –The likely causes of plate waste including personal taste, overly taking, and mobile phone. There is a positive attitude towards the influence of lunch discount on perceptions of plate waste reduction. As extrinsic reward, lunch discount can increase people's intrinsic motivation of reducing plate waste.

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1 Introduction

The aim of this chapter is to introduce the reader to the topic of plate waste in the context of buffet style restaurants. This chapter will also introduce the problem discussion and purposes of the thesis followed by research questions.

1.1 Background

According to the available statistics, approximately one-third of global food production is either lost or wasted, which is up to roughly 1.3 billion tons annually (Gustavsson et al, 2011). Overall, food loss and food waste are discovered higher in developed countries than those in developing countries, with an average of 280 to 300 kilograms per capita per year of food loss in Europe and North America whilst it is about 120 to 170 kilograms per capita per year food loss in Sub-Saharan Africa and Southeast Asia (Gustavsson et al, 2011). A consumer in Europe and North America discards on average between 95 and 115 kilograms per year (Filho&Kovaleva, 2015, p3). These digits tell us that, clearly, large amount of food is wasted, which indicates that all the resources input along the food supply chain have been in vain. There has been an internationally growing concern over food waste in recent years as such wasteful behavior negatively jeopardizes the world sustainability in terms of the environment, the economy as well as the society (Papargyropoulou, Lozano, Steinberger, Wright &Ujang, 2014).

Environmentally speaking, the consequences associated with food waste are substantial. Food waste decays in the landfill, and due to the anaerobic environment, methane will be generated, which triggers greenhouse effect (Papargyropoulou et al, 2014). In addition, the natural resources that are used to grow food that will not be eaten later on will be depleted such soil, water, and fertilizer (Papargyropoulou et al, 2014). And the environment pollution with regard to distributing and/or refrigerating the food should also be taken into account as the negative outcome (Papargyropoulou et al, 2014). Economically speaking, developed countries suffered great losses which is twice as much as the food loss and food waste than that of developing countries, which is up to USD

680 billion (FAO, 2013). Additionally, the substantial amount of wasted food increases not only operating costs but also waste fees (Lin, 2016). Furthermore, in addition to environmental and economic impacts, food waste also has social implications. Especially, attentions have been paid on the ethical and moral aspects of food waste of the inequality between food surplus and food shortage (Papargyropoulou et al, 2014). Since the world population is expected to increase by 2.3 billion by 2050 and it is expected to be 67 percent urban residents (United Nations, 2011), therefore, the growing population might face the challenge of resource scarcity and food shortage. If one quarter of the food currently wasted could be saved, and this will be sufficient to feed 870 million population in the world that are in need of food (FAO, 2013).

1.2 Problem discussion

There are plenty of literatures on food loss and waste, however, the definitions of these two concepts still remain controversial and have not reached the consensus yet. But in general, among literatures, many researchers applied the definitions from Food and Agricultural Organization (FAO) that food loss refers to the edible material intended for consumption that is unfortunately lost as an unexpected consequence of poor storage facilities, poor infrastructure and transportation, poor market facilities, poor packaging and consumption by pests. Besides the quantitative loss, the quality of the food might encounter deterioration, leading to nutritional and economic value. Whilst food waste refers to food loss resulting from discarded food that still has great value (FAO, 2012). It might include the entire or sealed packets or food left uneaten at all (Filho&Kovaleva, 2015, p6). Although food waste is often related to retailer of food service sector and customer, both food loss and food waste can take place at any point in the food supply chain as a result of inappropriate behavior performed by stakeholders such as producer, retailer, and consumer (FAO, 2012). The author has been aware that some food wastes are unable to avoid such as bones, fruit peels, and fruit cores. Nevertheless, this is not the main focus of this thesis.

As a notable part of the food supply chain, business or institutional activities, the food service sector is responsible for any food prepared and served outside the home. The sector encompasses different types of food service outlets that serve and prepare food such as restaurant, cafeteria, pub, and bistro (Silvennoinen et al, 2015). In this thesis, the food service sector refers to buffet style restaurant.

As mentioned above, although food waste can take place at all steps in the food supply chain, including transportation, manufacturing and processing, ingredient preparation, the most wasteful behavior is discovered at the stage of consumption (William & Walton, 2011). In this thesis, the author focuses on the food waste from customer consumption's perspective in the buffet style restaurant. To be more specific, the food waste is named as plate waste, and it refers to the avoidable food waste from the plates left uneaten by customers.

Earlier studies indicate that plate waste occurs due to the fact that the food providers lack knowledge of consumers' preferences of food items, temperature, flavor and quality (Marlette, Templeton, & Panemangalore, 2005). Williams and Walton (2011) concluded that the nature of the consumer such as low appetite, food consumption under limited time as well as the environmental issues such as noise and smell could also be taken into account as the causes of plate waste. Although the investigations on plate waste have been carried out in many different areas such as university dining hall (Kuo & Shih, 2016), hospital canteen (Williams & Walton, 2011), restaurant (Sirieux, Iala & Kocmanva, 2017), the focus on buffet restaurant setting is yet underdeveloped. Among various dining-out alternatives, all-you-can-eat buffet has been favored by customers due to its high level of food diversity and infinite opportunities to refill the plates with the provided food. In buffet restaurant, the dishes are placed in the public area where customers have free access to the food and can obtain the food directly (Lin, 2016). The nature of this business model has made over-consumption and food waste taken place (Lin, 2016). Despite the fact that Kuo and Shih (2016) proposed the possible reason why plate waste has happened in buffet restaurant setting since no extra cost will occur and consequently, it triggers over-eating incentive among eaters. Nevertheless, this deduction has not been

proved in academic research. Therefore, the author found it interesting to study the likely causes of plate waste in the context of buffet restaurant.

Previous studies have also suggested many strategies on plate waste reduction such as rescheduling the lunch hours, increasing meal diversity, improving food and nutrition education (Guthrie & Buzby, 2002), improving the food quality (Williams & Walton, 2011), reduced portion sizes with food (Williams & Walton, 2011), and the utilization of smaller plate as food container (Wansink & Ittersum, 2013). Moreover, Kuo and Shih (2016) have studied strategies such as customer interaction and coercion, finding out that both strategies have contributed to buffet plate waste reduction whilst the outcome of coercion strategy is more remarkable. In their study, Kuo and Shih (2016) mentioned that although coercion is effective in reducing buffet plate waste, it might in turn affect customer loyalty, therefore, in the long run, it might not be considered as an optimal strategy, which implies that there is room for other less coercive strategies to be generated. Although there are various strategies concerning plate waste reduction, there is a lack of research investigating how motivational techniques can be implemented to affect plate waste reduction.

Motivational techniques have been commonly adopted in working field. Organizations offer employees different rewards in order to strengthen the performance and the effectiveness of rewards in affecting employees' performance is significant as it directly affect the achievement of the goals (Muhammad, Arif & Jin, 2015). Rewards that are associated with extrinsic motivation are called extrinsic rewards (Ryan & Deci, 1985). In the working context, extrinsic rewards include both financial incentives such as bonus and extra pay and non-financial incentives such as verbal praise (Ryan & Deci, 1985). This idea was referred in this thesis and the author would like to explore the impact of extrinsic reward on plate waste reduction. Despite that organizations try to use 'carrot' to enhance the performance, Byron and Khazanchi (2012) said that the effects of performance-contingent rewards will depend on the nature of the rewards and the context in which the rewards are being offered.

In restaurant industry, promotional discounts have been commonly used as marketing tool to attract and retain customers (Taylor, 2001). Amica restaurant was chosen as the

case study for this thesis. Since Amica only offers lunch buffet during the workdays, therefore, lunch discount was chosen as the extrinsic reward. Moreover, the depth of the discount and the conditions on the discount play a major role in relation to re-consumption and the willingness to use the discount (Lin, Yang & Wan, 2015). When the promotional depth increases, it can stimulate customers to consume or purchase (Lin, Yang & Wan, 2015).

Consistent with this, in this thesis, the author used 15 percent off as a discount example and the intention is to qualitatively explore how it would affect customers' perception on plate waste reduction other than quantitatively test the result. Since semi-structured interviews were conducted, interviewees were free to voice their opinions about this discount whether it is applicable or there will be other forms of reward that they would prefer.

Completion-dependent rewards are given for individuals who can be able to accomplish the given task or addressing the problem (Deci & Ryan, 1985). Since lunch discount was considered as extrinsic reward, consequently, there will be requirements for obtaining the reward. In this thesis, the requirement is that customers need to finish the food filled in the serving containers up to five times. The intention of choosing this condition is that in order to achieve the lunch discount, customers firstly need to put efforts into reducing waste and being serious with plate waste problem. Similar to the choice of discount, the choice of five-time is an example and is not considered as a quantitative variable.

1.3 Purpose and Research questions

Therefore, with the focus on the consumer perspective, the purpose of this thesis is two-fold. Firstly, the author seeks to provide an interpretation of the reasons behind the plate waste in buffet restaurant setting. In addition, the author is interested at qualitatively finding out the relationship between lunch discount and customers' perceptions on plate waste reduction. The first research aim intends to portray a general background to understand the root cause of plate waste in buffet restaurant, which enables the author to explore the likelihood of encouraging customers to minimize plate waste via applying

motivational technique. It is hoped that in addition to contributing to the academic research with regard to this area, the outcomes of this thesis can not only provide insights and helpful suggestions of improvement of buffet industry in terms of plate waste related issues but also can be integrated into the development and regulations of food supply chain.

In the light of research purpose, this thesis is going to answer the following research questions:

- 1. What are the likely causes of plate waste in buffet restaurant setting?*
- 2. How does lunch-discount as extrinsic reward will affect customers' perceptions on reducing plate waste in buffet restaurant setting?*

2 Theoretical framework

This chapter will focus on theories related to food consumption volume and motivation. The main focus of this chapter is to collect relevant theories and studies which lays the foundation for answering the research questions.

The theoretical framework mainly consists of two parts. The first part of the theory illustrates the elements that affect humans' food consumption volume. The author applied the model developed by Wansink (2004). This model is composed of four parts including eating environment, food environment, consumption norms and consumption monitoring accuracy. This theory construct paved the way for answering the first research question. The second part of the theory is about motivations. More specifically, the author provided in-depth explanation of the relationship between extrinsic reward and intrinsic motivation. Noticeably, most of the researches regarding motivation were conducted in the context of workplace and school education. The application of this theory in the context of buffet industry is left to be unexplored. Additionally, as the author mentioned earlier in the introduction part that there is a lack of research on extrinsic reward and plate waste

reduction. Therefore, the research result will not only contribute to filling the missing research gap but also expanding the scale of applying the theory into foodservice context.

2.1 Antecedents and mediators of food consumption volume

People can be impressionable when it comes to how much food they can consume. There is a flexible range as for the quantity of the food the one can eat (Berry, Beatty & Klesges, 1985). Food consumption behavior can be influenced by how much one normally consumes, namely, the consumption norms (Wansink & Ittersum, 2013), whereas there are other norms in the environment which happened to affect food consumption (Wansink & Ittersum, 2013). Wansink (2004) explored the impacts of environment factors on food consumption and discovered that it can positively increase food consumption volume more than people might recognize. Wansink (2004) claimed that consumption intake is affected by eating environment, food environment, consumption norms as well as consumption monitoring accuracy, which is illustrated by figure one (Wansink, 2004).

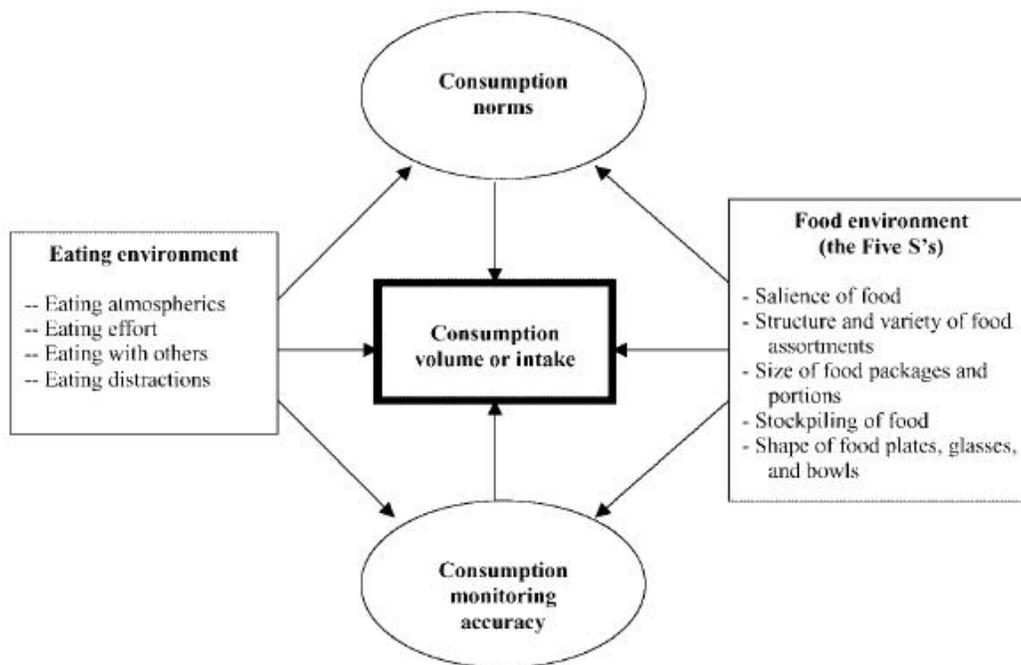


Figure 1 Antecedents and mediators of food consumption volume.

2.1.1 Eating environment

According to Wansink (2004), eating environment is defined as “*the ambient factors associated with the eating of food, but that are independent of food, such as atmospherics, the effort of obtaining food, the social interactions that occur, and the distractions that may be taking place.*” This concept is in accordance with servicescape which was mentioned by Bitner (1992) that the physical environment in which the service is produced and where service providers and customers can communicate with each other, together with tangible goods that contribute to the service.

Eating atmospherics include temperature, lighting, odor and noise (Wansink, 2004). It turned out that people will consume more in cold environment than in hot environment as more energy is needed to keep the body stay warm and adapt to the cold atmosphere (Wansink, 2004). The other three elements can also lead to the increase in consumption if the eating environment is formed in a comfortable and cozy manner such as the utilization of candles, flowers and music (Wansink, 2004). Consistent with this concept, cozy vibe has impact on stimulating people’s appetite, which can be reflected in a way that people are encouraged to fill the plate with food as much as they can without realizing it is already over the usual amount that they can actually consume.

Eating effort is considered as the physical effort involved in the consumption processes such as the ease, access, or convenience with which the food can be reached and consumed (Wansink, 2004). In the context of buffet restaurant, the provided food is found placed on the public-shared table where people can have easy access to and directly obtain the food by themselves (Lin, 2016). Accordingly, it is considered that buffet setting satisfies the requirements where customers find it convenient to have quick access to the food. Thereby, there is less eating effort involved compared to other situations.

Eating with others such as familiar and amicable people leads to an increased amount at meals since the socializing helps make the eating very relaxing and jolly, and it can be a prolonged meal compared to eating meal alone (Wansink, 2004). To some extent, unconsciously, people will lower the ability to monitor the consumption as the attentions

will be paid to the communication with fellows (Wansink, 2004). This can be understood in a way that when people are together with their friends at the buffet table, the communication might stimulate people's appetite and motivation to try different food. As a result, people tend to take more food than they actually can consume. Consequently, the self-monitoring and self-awareness on the quantity of food consumption is relatively low. This can also be partially associated with the concept of eating distractions suggested by Wansink (2004) that the conversation can obscure one's ability to monitor the food consumption.

2.1.2 Food environment

In contrast with eating environment aforementioned, food environment is defined by Wansink (2004) as *“factors that directly relate to the way food is provided or presented, such as its salience, structure, package or portion size, whether it is stockpiled, and how it is served.”*

Out of the basic instinct, simply seeing or smelling a food can arouse unexpected desire for food. The salience of food is seen as a constantly tempting consumption signal (Wansink, 2004). In addition, it has been discovered across a wide range of population that the more diverse the food is, the more amount of the food will be consumed (Wansink, 2004). This is in line with buffet value proposition that customers are provided with various dishes and are motivated to take more (Lin, 2016). Even if the actual variety is not as high as expected, the adjustment of structure may give rise to the increase in the consumption (Wansink, 2004). For example, as for the buffet situation, instead of placing fruits directly on the buffet table, it can be substituted by finely peeled and chopped ones. Or, customers are offered with free access to fetch the beverages by themselves rather than asking the waiters to deliver the drinks. It might seem to be subtle change, however, the new way of organizing and structuring can affect consumption choice.

It is supported that there is a correlated relationship between consumption and the size of portion and package (Wansink, 2004). In other words, the bigger the size is, the more people will consume. Under the circumstance where food is unlimitedly supplied, it gives people freedom to consume beyond the point where they might have stopped with a

limited and smaller portion (Wansink, 2004). Knowing that the food will always be replenished, customers are therefore encouraged to take as much as they want without worrying about the need for food.

Moreover, it is known that the serving containers are thought to create consumption illusions, meaning that the size of e.g. plate can subconsciously influence people's perception and suggest the actual amount of food that one would take or consume even though they decide not to over-consume or under-consume (Wansink, 2004).

2.1.3 Consumption norms & Consumption monitoring accuracy

Apart from the environments, to some extent, our personal consumption norms are partially influencing the decision of how much food we shall take or eat. Consumption norms are performed as a habitually perceptual benchmark, which reminds people of the amount of food that they usually take or eat (Wansink, 2004). Additionally, the other factor which can help restrain overeating is the consumption monitoring (Wansink, 2004). It helps reduce the discrepancy between perceived and actual consumption level if one can deliberately pay attention to food choice and food quantity, even if the physical environment is distracting.

2.2 Theory of motivation

A substantial body of research has been done in both academia and workplace with regard to motivation as one of the crucial driving forces behind any individual engaging in any activity. Motivation is a complicated notion as it not only includes both extrinsic and intrinsic attributes but also is affected by personality and expectations of individuals (Singh, 2016). Generally speaking, extrinsic motivation refers to doing something as it leads to a separable outcome and therefore results in high quality learning and creativity while intrinsic motivation refers to doing something because it is inherently enjoyable (Ryan & Deci, 2000). Kuo and Shih (2016) found out that punitive practice, i.e. coercion has more remarkable impact on motivating people minimizing plate waste than intrinsic motivator, i.e. education. However, there is lack of research on investigating the

relationship between extrinsic reward and plate waste reduction. Apart from school and workplace, the author would like to extend the context of applying the theory into service setting. Consequently, in this thesis, the author would like to explore how extrinsic reward such as lunch discount would affect customers' perceptions on plate waste reduction. The following theoretical construct lays the foundation for the discussion later on.

2.2.1 Intrinsic motivation

Intrinsic motivation is defined by Ryan and Deci (2000) as “the doing of an activity for its inherent satisfactions rather than for some separable consequence.” Intrinsic motivation is affected by the changes in feelings of competence and self-determination. The increase in feelings of competence and self-determination is leading to strengthen the intrinsic motivation and vice versa. (Cameron & Pierce, 1994). There are a few indicators which can be used to measure the level of intrinsic motivation. Free time is the time that subjects spend on the given task during non-rewarded period (Deci & Ryan, 1985). It is thought that the less time spent on the task, the less intrinsically motivated the people may feel. On the other hand, attitudes or perceptions which can reflect people's inner feelings such as satisfaction, enjoyment, interest and willingness can also be applied to as measure for intrinsic motivation (Deci & Ryan, 1985). Deci and Ryan (1985) mentioned that the measures such as satisfaction, enjoyment, attitude, and task interest are more indicative than free time measure as these measures with more emotion involvement can better reflect individuals' inner motivations. Consistent with this claim, the author is going to use perceptions on plate waste reduction as the intrinsic motivation indicator.

Although intrinsic motivation is not the only form of motivation, it is exceedingly crucial. When humans are initiatively active, they are ready to learn and explore and this energy comes all from the inside of them and they do not need extrinsic incentives to do so (Ryan & Deci, 2000). The generation of this natural motivation is a significant factor in cognitive, social and physical development because it sparks people's genuine inherent interest and helps people strengthen knowledge and skills (Ryan & Deci, 2000).

2.2.1.1 Cognitive evaluation theory

As one of the popular theories for analyzing intrinsic motivation, cognitive evaluation theory is used to study the changes in intrinsic motivation out of factors in social context such as rewards, communication and feedback, which was presented by Ryan and Deci (1985). There are two processes by which extrinsic rewards are considered to affect intrinsic motivation, which are perceived locus of causality and individual's feelings of competence and self-determination (Deci, Cascio&Krusell, 1975). The perceived locus of causality stays inside of an individual when the individual is intrinsically motivated. Whereas, when extrinsic rewards are involved in the activity, the individual will start to believe that he is undertaking the activity for the rewards. Consequently, the perceived locus of causality shifts from within him to the given extrinsic rewards. Put differently, the intrinsic motivation of the individual has dropped (Deci, Cascio&Krusell, 1975). The theory assumes that when people are intrinsically motivated, they tend to feel competent and self-determining. Thereby, it is said that rewards or feedback can affect intrinsic motivation via influencing feelings of competence and self-determination (Deci, Cascio&Krusell, 1975). In line with this statement, it is said that rewards or feedback that enhance these feelings will reinforce the intrinsic motivation and vice versa. These two stages are invoked at different times depending on the attributes of each reward (Deci, Cascio&Krusell, 1975). A reward can be either controlling or informational. When it is controlling, it invokes the perceived locus of causality process. When it is informational, it sparks the perceptions of competence and self-determination (Deci, Cascio&Krusell, 1975). Deci and Ryan (1985) said that the rewards given to an individual depending on a level of performance are more complex and it can be controlling or informational depending on how well an individual will behave in the activity.

Calder and Staw (1974) made critical comment on cognitive evaluation theory by asking how expected rewards and unexpected rewards would affect intrinsic motivation. Deci, Cascio and Krusell (1975) responded that when a person is offered an extrinsic reward for an activity, the reward will lead to a reassessment of the activity from the person who

does for intrinsic reason to the one that does for the reward. The latter one will be less intrinsically motivated. Whether the reward alone is enough to make a change in perceived locus of causality and therefore leads to a decrease in intrinsic motivation is a question. They guess the offer would not be so manipulative to lead to reevaluation though it could be. If it does, then the decrease would be less than the situation where the person only focuses on the reward.

2.2.2 Extrinsic motivation

Extrinsic motivation is defined by Ryan and Deci (2000, p60) as “a construct that pertains whenever an activity is done in order to attain some separable outcome.” Extrinsic motivated behavior refers to behavior in which an external controlling variable can be identified and the intention of individuals who take part in the event is primarily driven by the aim of earning this external variable (Ryan & Deci, 2000). The main feature of extrinsic motivated behavior is extrinsic motivator, i.e. rewards. Cameron and Pierce (1994) asserted that rewards are stimuli that are assumed to be positive events. The rewards can be presented in different manners such as money, verbal praise, candy (Eisenberger& Cameron, 1996). Rewards offered in an activity, completing a task, or solving a problem is generally termed as task-contingent rewards (Deci & Ryan, 1985). The rewards can also be divided into three categories depending on the relatedness to the activity or the performance. Performance-independent rewards are given to individuals as remuneration for simply taking part in the activity regardless of the quality or the outcome (Deci & Ryan, 1985). Completion-dependent rewards are given for individuals who can be able to accomplish the given task or addressing the problem (Deci & Ryan, 1985). In accordance with this notion, it can be applied to stand for the lunch discount used in this thesis as the lunch discount is earned based on the condition that customers need to empty the edible food in the plates by eating it up. Quality-dependent rewards, literally speaking, are given under the circumstance where individuals not only complete the task but also reach certain standards (Deci & Ryan, 1985).

2.2.3 Extrinsic reward vs. intrinsic motivation

Plenty of researches were conducted in discovering the relationship between extrinsic reward and intrinsic motivation. Whereas, it turned out that so far it has not reached the consensus and findings vary from study to study. Through the examination of literatures, the author found that some researchers concluded that tangible reward are thought to be harmful to intrinsic motivation, especially when rewards are acted in a dominating way to make the action take place (Ryan & Deci, 2000; Bear, Slaughter, Mantz& Ripple, 2017; Rummel& Feinberg, 1988). Through experiment, individuals are found out that they seem to put more efforts and work harder and produce more activity when they are awarded with something in return. Nevertheless, the contribution is of low quality and is lack of creativity compared to non-rewarded subjects as the incentives or pay-for-performance usually makes people less likely to take a risk or be creative, and with minimum risk level people can easily control the situation of winning the provided reward (Eisenberger& Cameron, 1996). Typical experiment is that participants are divided into two groups, i.e. reward-receiving group and non-rewarded group, who are provided with tasks such as solving puzzles, word games, drawing. The extrinsic rewards include money, candy, praise, and gold star. The time spent on the task completion and expressed attitude are considered as intrinsic measures. If reward-receiving group spend less time or show less interest on the task, by default it is considered that extrinsic reward will undermine intrinsic motivation (Eisenberger & Cameron, 1996). Ryan and Deci (1985) examined the impacts of different characteristics of extrinsic rewards on intrinsic motivation. For example, they claimed that there is no sufficient evidence to specify the impacts of quality-dependent rewards on intrinsic motivation since perceptions of competence goes up while simultaneously self-determination level goes down. But in general, they found that task-contingent rewards will lead to a decrease in intrinsic motivation due to the decrease occurred in self-determination especially when the rewards are expected and tangible.

However, consistent with the typical experiment layout mentioned above, in the meta-analysis conducted by Cameron & Pierce (1994), they claimed that overall reward does not decrease intrinsic motivation. Rewarded people are not less willing to work on the

activities nor do they show less interest towards task than non-rewarded subjects. They also conducted in-depth research on how different features of rewards affect intrinsic motivation in terms of reward types, reward expectancy and reward contingency. Under free time measure, it turned out that verbal praise led increase to intrinsic motivation and tangible rewards contributes no effect to intrinsic motivation either the rewards are given unexpectedly or expectedly and contingent on the level of performance. The only small negative impact under free time measure occurred when tangible rewards are given in the performance-independent activity as once the rewards are removed. The rewarded group apparently spent less time on the same given task as non-rewarded subjects did. Under attitude measure, verbal rewards increased intrinsic motivation and tangible rewards did not lead to a decrease in intrinsic motivation under any conditions. Deci (1972) provided us with the explanations that verbal rewards may not be different from the emotions of satisfaction which the individual gets for doing the task as verbal rewards provide extra positive value which becomes part of the task and therefore the individual is more likely to perform the task when there are no extrinsic rewards are offered. Taking the findings into consideration, Cameron and Pierce (1994) perceived that in order to avoid negative impact on motivation, rewards that are given in educational and other settings should be contingent on the level of performance.

In spite of the differences existed in findings among researches, overall, the conclusions were drawn out of the contexts of school education and workplace. (Ryan & Deci, 2000; Bear, Slaughter, Mantz& Ripple, 2017; Eisenberger& Cameron, 1996; Rummel& Feinberg, 1988). The foodservice industry, or to be more specific, the buffet restaurant setting, yet has not been researched. Inspired by the effect of extrinsic reward on intrinsic motivation, therefore, it is author's interest to examine the impact of lunch discount as extrinsic reward over customers' perceptions on plate waste reduction and meanwhile to extend the application of this theory concept into a broader context.

2.3 Declaration

The aim of this thesis is to figure out the likely reasons of plate waste and customers' perceptions on avoiding plate waste by means of promoting lunch discount. To address these issues, the theoretical foundation is required. Wansink (2004) created a food consumption volume model and discovered that food consumption volume can be affected by a series of environmental factors. By applying this model, the author intended to explore whether buffet eaters in Amica restaurant are affected by these environmental factors and whether these factors motivate them to take food. This will help analyze and explain the likely causes of plate waste.

Moreover, punitive practice might seem to be effective in passively restraining customers from saving food in the short run, however, essentially in the long run, it is highly likely that it will negatively affect customers' loyalty towards the service, which indicates that there is room for considering other forms of strategy. Understanding how customers perceive lunch discount as extrinsic reward in relation to plate waste reduction will provide us with opportunities to gain more insights in finding out if it will potentially be a more appropriate and positive means to help customers minimize the plate waste. If there will be a positive relationship, in principle, it could be a better substitute for the current punitive practice as a means for plate waste reduction as it will enhance the individuals' intrinsic interest in positively and initiatively participating in the environmentally-friendly activity. Nonetheless, if there will be negative relationship or unclear one, then other strategies need to be invented to improve plate waste issue.

Through the lens of theoretical framework, the results of this thesis will not only contribute to filling the missing gap in research with regard to the likely causes of plate waste in buffet restaurant as well as the likelihood of promoting motivational technique to test customers' perceptions of plate waste reduction, but also shed light on managerial perspective in buffet industry.

3 Method

The chapter explains the techniques used for data collection, case selection and analysis. The author also discusses the research approach that was adopted as well as the trustworthiness of the research.

3.1 Research approach

3.1.1 Deduction approach

It can be two ways to determine the relationship between theory and research depending on what is the outcome of what (Bryman, 2012, p19). Specifically speaking, if theory is on the premise of empirical investigation, then it is considered as deduction approach. On the other hand, if theory is the consequence of research, then it is said to be induction approach. Deduction approach stands for the commonest view of the nature of the relation between theory and social research (Bryman, 2012, p24). It begins with a theoretical exploration about the domain, followed by raising hypotheses of the research that are going to be subject to be addressed (Bryman, 2012, p24). Through empirical investigation, it leads researchers to draw conclusion with the collected data in order to confirm the hypotheses (Bryman, 2012, p24). Put differently, this approach seeks to see if the general theory can be applied into other settings or not.

In line with this reasoning, this thesis followed the structure of deduction approach as the author started with the broad literature reviewing on plate waste domain and the techniques that can be used to limit the edible food waste. Meanwhile, the author browsed through theoretical background by looking into theories such as how eating environment and food environment can affect food consumption volume and the effects of extrinsic motivational techniques on humans' intrinsic motivation. After gaining insights of what have been studied previously, subsequently, the author narrowed down the research scope by raising specific research questions that are waiting to be answered via practical investigation.

3.1.2 Research philosophy

- Epistemological position

This thesis focused on buffet plate waste reduction from consumer perspective where customers played an important role in voicing their opinions and perceptions. Due to the differences and complexity in responses among individuals, the author considered applying interpretivism to as the foundation for the research. According to Bryman (2012, p30), “...a strategy is required that respects the differences between people and the objects of the natural sciences and therefore requires the social scientist to grasp the subjective meaning of social action.” As the name suggests, interpretivism is about to understand the human action through a subjective examination of that world by its participants. The researchers provide an interpretation of others’ interpretations in order to study the phenomenon and sometimes the outcome may come up in a surprising manner (Bryman, 2012, p30). Therefore, interpretivism was chosen for this thesis.

- Ontological position

Constructivism was the overall framework for how the author looked at the reality. The most crucial point of constructivism is its emphasis on the interpretative and constructive perspectives of the realization that facts are socially built in specific contexts (Silverman, 2013, p107). Especially, when researchers intend to find out answers for questions formed in “what” and “how” manner (Silverman, 2013, p107). Social phenomenon and the associated meanings behind are accomplished by social actors (Bryman, 2012, p33). Also, Silverman (2013, p111) claimed that social institutions are created by social participants. Noticeably, the social phenomenon is at a constant state of revision. Therefore, it implies that there is more than one way to interpret it (Bryman, 2012, p33). Constructivism was adopted in this thesis. The author attempted to analyze and explained what caused the social phenomenon of plate waste in the buffet restaurant by customers as well as how do customers as social participants perceive lunch discount in that specific environment.

3.1.3 Qualitative approach

Contrast with quantitative approach, qualitative approach tends to tell the relationship between the variables through words, which enables the researchers to obtain a deeper understanding of the researched issues that why certain performance took place (Bryman, 2012, p380). The author seeks to comprehensively understand the causes of plate waste in buffet setting and the possibility of utilizing lunch discount to mitigate the wasteful behavior, and the empirical data can be obtained through face-to-face communication, i.e. interview. However, numbers might be difficult to contribute to revealing the deeper meaning of the issue. On condition that the quantitative method had been used, the author might fail to thoroughly understand the phenomenon, which will in turn draw false or invalid conclusion. It is required that the researcher needs to interpret the social world through the eyes of the people being studied, which can be achieved through face-to-face interaction (Bryman, 2012, p399). Qualitative studies often provide detailed account of what goes on in the specific context and these detailed information is crucial to researchers because it mirrors the context where certain behavior takes place and subsequently it helps researchers understand the social behavior (Bryman, 2012, p401). Moreover, it is said that having a flexible structure is supposed to reinforce the chance of genuinely revealing the aspects of the people that are being studied (Bryman, 2012, p403). For example, unstructured or semi-structured interview is consistent with this criterion. Compared to quantitative approach, it is much easier for researchers to readjust the direction in the course of investigation.

Nonetheless, the author realized the downsides associated with qualitative approach. Qualitative research appears to be subjective due to the fact that the researchers are the ones who interpret the social world. Thereby, whatever is observed or heard is the product out of the investigator's preference (Bryman, 2012, p405). Also, the chosen subjects are directly affecting the research outcome. But overall, the author perceived that qualitative approach is more appropriate than quantitative approach in this case, therefore, it had been chosen for this thesis.

3.2 Research design

3.2.1 Case study

Case study was adopted by the author in terms of conducting empirical research three types of case study were defined, which includes intrinsic case study, instrumental case study as well as collective case study (Silverman, 2013, p143). Intrinsic case study is about studying the case itself due to the feature of its particularity and therefore, no attempt is made to generalization. Whilst, collective case study is the situation where multiple cases are studied in order to find some patterns and generalize the phenomenon (Silverman, 2013, p143). Lastly, instrumental case study is similar to collective case study in a way that the intention is to look for common patterns and the likelihood of generalizing things but with the focus on in-depth exploration of single case (Silverman, 2013, p143), and this matches the author's intention of choosing Amica buffet restaurant as the subject to study. The author hoped through the study of Amica, it can help us gain some insights and understanding of what made plate waste take place in buffet setting and the possibility of improving it by means of using 'carrot'.

3.2.1.1 Case selection

Amica restaurant was opted as the case study for this thesis. As part of Fazer Food Services, Amica restaurant aims to deliver best and healthiest food to its customers. Besides cooking and offering freshly scrumptious delicacy at its own restaurant, Amica also positions itself as catering company and supports business, schools, hospitals and elderly group with catering services (Amica.se). The choice of the studied case can either be a conscious and deliberate decision or a self-evident one (May, 2011, p228). The chosen case is thought to extend the comprehension of the relationships between variables and the conclusion can be seen as representative for wider context (May, 2011, p228).

First of all, the context of this thesis is based on buffet restaurant, and for this reason Amica was chosen as it offers buffet style lunch during weekdays like many other buffet restaurants. The restaurant offers various fresh salads, vegetables, red and white meat, special vegetarian dish as well as coffee and tea and beverages. Secondly, the research theme is focused on plate waste and this is another reason why Amica was chosen as with no exception, plate waste can also be found there and this was witnessed by the author since the author goes to the restaurant for buffet from time to time. Plate waste is thought as a common phenomenon among buffet industry, which only damages the natural resources but also the environment in which humans are living. To find a solution to the wasteful behavior, it is therefore useful to firstly figure out the causes of plate waste. Additionally, information with regard to food waste and waste reduction can be found in Amica restaurant, indicating that the restaurant has been concerned about this severe issue already. Apart from supplying customers with best quality food, Fazer food group has been contributing to improving its responsibility vision. As one of the five strategic areas of Fazer food group's corporate responsibility program, waste perspective within 'Part of the environment' has always been one of the focuses (Fazergroup.com). Taking these into consideration, choosing Amica as case study is conscious and self-evident.

However, to some extent, single case study is perceived not as generalizable as collective case study due to the smaller scale of studied subjects, the main emphasis is on the interpretation of personal perspective and different individuals may attach different meanings to the events or act differently, sometimes it is less likely to go beyond the case itself (May, 2011, p221). But the original point is to contribute to the sum of total knowledge. Single case has value in its own right. It is author's wish that through the in-depth investigation of case study, the findings of this thesis can at least shed some light on human knowledge, experience in buffet industry and therefore contributes to social research and learning. All in all, the author found it appropriate to have Amica as the case for analyzing and understanding the research questions. And hopefully the result can be meaningful and suggestive for other buffet restaurants.

3.3 Data collection

Interview helps obtain insights of people's opinions, attitudes and feelings (May, 2011, p131). To better thoroughly understand the causes of plate waste as well as customers' perceptions on waste reduction under the influence of extrinsic reward, interview is thought to be a more useful and appropriate approach. More specifically, semi-structured interviews were chosen and conducted in order to collect empirical data. This approach characterizes in a way that the interviewer is free to go beyond the standardized form of questions, which enables the interviewer to have more latitude to probe beyond the answers (May, 2011, p134).

All interviews were conducted at Amica restaurant during the lunch time and in face-to-face form. To facilitate the data analysis and keep the authenticity of the data, voice recorder was used during the interviews. The questions were mainly focused on the open-ended type and, since it was semi-structured interview, the author asked a few more questions spontaneously so as to make interviewees elaborate more on the suggested questions, which in turn helped the author achieve clarification and elaboration on the answers given. The pilot interview was undertaken to test the effectiveness and validity of questions. Afterwards, some adjustments were made and edited version of questions was tested again. The final version consists of three parts with which two parts are in relation to the research questions and the final part is the basic questions concerning the frequency and time of the interviewees have lunch at Amica and this is also the added part after the pilot interview. The author realized that regular customers and non-regular customers reacted differently about lunch discount. Therefore, to better understand the effect of discount on customers' perceptions on plate waste reduction, the author decided to include questions concerning frequency in the interview. The first section aims to give a general background of understanding and examining the relationship between buffet restaurant environment and plate waste whether it is the primary cause which leads to the plate waste, which was necessary to provide information for analyzing the first research question and provide the support for exploring the second research question. After knowing the causes of buffet plate waste, it is time to speculate on the potential means of mitigating the situation. Therefore, the second part of the interview questions aims to find the relationship between lunch discount and customers' perception on plate waste

reduction through the insights of the theoretical lens of extrinsic reward and intrinsic motivation.

All the interviews were conducted in English between 24th and 28th of April and lasted for approximately 45 minutes each. The detailed interview questions can be retrieved in the appendix.

3.3.1 Sampling in qualitative research

The selection of sample units is crucial as this is where empirical data comes from, which lays the foundation for the further research question discussion. The sample units need to meet the conditions that they have experience in buffet style restaurant and they experienced plate waste in buffet restaurant. In line with this criterion, purposive sampling is considered as the appropriate sampling method. According to Bryman (2012, p418), purposive sampling is a non-probability sampling. Different from convenience sampling where researchers choose the sample units on the random basis based on the ease of accessibility, purposive sampling is about to sample the cases or participants in a strategic way in order to assure that the sampled units are the most relevant to the research topic.

The sampling and interview venue were at Amica restaurant during the lunch time. The reason of choosing the restaurant as the place for collecting empirical data is because the research theme is related to buffet setting and the author expected the participants to act more naturally and casually in the eating environment so that the answers would be more genuine. Since Amica is located at a point close to university campus and workplace, therefore, the primary customers are students, school staff and employees.

After reaching a customer, the following questions will be asked firstly: *Have you ever eaten lunch buffet in Amica restaurant? And have you ever experienced plate waste?* If the respondent said yes to both questions, then he or she would be chosen as the participants if he or she would also be willing to participate in the interview. Due to time

limitation and finite abilities, eventually ten participants were chosen as the sampling units.

3.4 Approach to data analysis

A series of approaches can be used to analyze the qualitative data such as grounded analysis, discourse analysis, thematic analysis, and qualitative content analysis. In this thesis, the author chose thematic analysis for data analysis. A common strategy is to build up a framework, which is the process of ordering and synthesizing the empirical data and helps detect the pattern or central themes and subthemes (Bryman, 2012, p579). Bryman (2012, p579) said that the themes and subthemes are the product of the in-depth reading and rereading of the transcripts and field notes. The generation of framework stands for the procedures of digesting the data and getting to understand the situation and certain behavior. Along with themes searching, researchers are also recommended to draw on theory associated material or social scientific concepts as the template for achieving themes. In addition, researchers can look for repetitions among the conversation with the participants in order to develop the common view. Moreover, researchers should pay attentions to the linguistic connectors like the use of words such as ‘because’ or ‘since’ this is because these terms indicates the fact that there will be causal relations to be told (Bryman, 2012, p580). When insert contents into framework cells, the researchers need to bear in mind with four points. Firstly, indicate the source of the fragment, which can be represented by question number. Secondly, keep the language of participant as much as it can so that the most original data can be protected and displayed. Thirdly, since it is cell, therefore it is not recommended to quote plenty of the materials. Lastly, abbreviations can be helpful so that the cells will not be too full (Bryman, 2012, p579-580).

Based on the suggestions and procedures mentioned above, by taking advantage of voice recorder, the author firstly transcribed all the interview conversations and through repeatedly reading and familiarization, the author selectively chose the parts that were thought to be useful and more relevant for answering the research questions. Subsequently, the aim was to develop the frameworks. The first framework was created

to reflect the central theme that is in relation to the likely causes of plate waste. Ten participants were listed horizontally and the subthemes, i.e. the discovered likely causes, were displayed vertically. The detailed framework contents can be found in appendix. The second framework was produced to find the theme with regard to customers' perception on lunch discount. On the horizontal level, interviewees were categorized into two categories, namely regular and non-regular customer. As the author mentioned earlier, during pilot interview, the frequency of having lunch buffet affected customer's perception on lunch discount, therefore to be able to fully understand the difference, the author decided to analyze the data by labeling participants into two groups. On the vertical level, the author used 'before lunch discount', 'while lunch discount' and 'after lunch discount'. Firstly, by using category of 'before lunch discount', it can show a connection with the first research question by stating the reasons of plate waste and the attitude towards plate waste. Secondly, by using 'while lunch discount' and 'after lunch discount' these two categories, it helps understand how lunch discount functioned and affected people's perception on plate waste reduction. The analysis of the processes will help address the second research question. The detailed framework contents can be found in appendix.

3.5 Trustworthiness in qualitative research

According to Guba and Lincoln (1994), as reliability and validity used for assessing the quality of quantitative research, trustworthiness provides an alternative to assess the quality of qualitative research. Trustworthiness consists of four perspectives, including credibility, transferability, dependability and confirmability (Guba & Lincoln, 1994).

To ensure the credibility of the research, triangulation method is recommended to be used (Bryman, 2012, p390). Triangulation means using more than one method or source of data in the study of social phenomena (Bryman, 2012, p392). Literature review helped understand the background of research theme and develop research questions. Also, semi-structured interviews enabled the author to ask interviewees to elaborate more on

the given question and to ask extra questions relevant to the research and to gain deeper understanding of the research questions.

As qualitative research goes with depth than width compared to quantitative study, therefore, qualitative researchers are encouraged to generate thick description which entails rich accounts of the details in the studied subject (Bryman, 2012, p392). Through the in-depth description, the outcome of the interpretation will suggest the possible transferability to other contexts (Bryman, 2012, p392). In author's point of view, transferability is similar to the level of generalization. Through analyzing and comparing the collected empirical data by replaying voice recorder and reviewing the field notes, the author reflected upon all the interviews and gave rich explanations on the identified similarities and differences on plate waste reasons and interviewees' perceptions on lunch discount towards plate waste reduction. Details can be found in the next chapter.

To achieve the dependability this criterion of trustworthiness, researcher needs to keep the whole records of the research processes, which involves the development of research questions, case selection, interview transcripts, field notes, and so on (Bryman, 2012, p392). The intention is to have access to the original data and the consistency of the research work. During the interview, voice recorder was used to in order to get access to the original data. Together, filed notes were made by the author to record some key points and helped the author to reflect on the given answers. After data collection, the author replayed the voice recorder and wrote down the interview conversations into text form.

Lastly, confirmability is concerned with the researcher has not overly attach personal values to affect the objectivity of the research (Bryman, 2012, p392). The researcher can be shown to have acted in a good faith (Bryman, 2012, p392). To achieve this, the interpretation is carried out by analyzing the answers given by interviewees. Additionally, the interpretation is also combined with the help of theoretical framework.

4 Empirical findings

This chapter is divided into two parts. Firstly, the findings from the interviews will be presented, followed by the analysis of empirical data by applying the theories developed in the theoretical framework.

4.1 Findings regarding RQ1

Through the interviews, the author noticed that all the interviewees gave similar comments on the atmospherics of Amica that either they feel it is ordinary or there is nothing special about it. For example, interviewee B said *“hmm not really. I don’t pay attention to it so much because it doesn’t seem like there is anything special about it. It’s functional and just go there to eat when I’m at school coz the food is better than school canteen.”*(Personal communication, 27 April, 2017). Interviewee C mentioned *“jaa you know, when it comes to lunch restaurant and connected to school, I would say I wouldn’t. no. coz normally it’s kind of the thing where you go and eat and then you leave. I wouldn’t say the servicescape of the restaurant would make much difference to me. With Amica, I noticed it’s bright and quite spacious, I like it.”*(Personal communication, 28 April, 2017). Two of the interviewees even mentioned that they feel less cozy when having lunch at Amica. Interviewee I said *“yeah, you can say that. I don’t like the chairs here. It’s very hard to sit on.”* (Personal communication, 25 April, 2017). Interviewee J said *“well, in general, I don’t think it’s cozy environment. It’s bright and clean. It’s an ok environment to eat, but not very cozy. And when it’s rush hour, it gets crowded and very loud.”*(Personal communication, 28 April, 2017).

All the interviewees mentioned that they like the free access to food which is fast and convenient and are allowed to freely take the food. They think that this type of structure functions well especially when there is large flow of customers during lunch rush hour.

All the interviewees experienced having meal together with companions. They admitted that it is more enjoyable and socializing to have lunch together with someone and the lunch time will be prolonged. When asked how it affects them if their companion starts to take more food, interviewees reacted differently. Interviewee B said *“oh yeah it usually does. Sometimes when they take something that I didn’t notice before, and then I’m curious, so I will also go and take some to try. And sometimes, if I’m done with the food while others are still eating, I would feel awkward if I’m just sitting there. So I would take some more food to company them.”* (Personal communication, 27 April, 2017). Interviewee D said *“oh yeah, I will get inspired. I will also go and get some more. Because it’s possible to get some more. It’s buffet”* (personal communication, 27 April, 2017). Interviewee A said *“yes it will, especially when my friend comes back with some new food that looks tasty already and I haven’t tried yet.”* (Personal communication, 24 April, 2017). These people behaved in a way that they are easily influenced by the companions’ behavior and would like to take more food and the main reason lies in the curiosity for food that they have not tried yet. On the other hand, others said that it would raise the thought of getting more food, but eventually, it will depend on how full they actually feel. Therefore, in this sense, they are more self-conscious and self-controlled. For instance, interviewee C said *“I would say that would raise the thought should I get more or not. But in reality, I will listen to my stomach.most of the case, I would listen to my body if I can eat more or not.”*(Personal communication, 28 April, 2017). Interviewee F said *“no. I will listen to my own body. Also, it depends on the taste of the food. Why would I follow?”* (Personal communication, 27 April, 2017). Similarly, interviewee I said *“um yeah...I will feel the need to take more for some reason...but it depends on how full I am and if the food I like will still be there or not.”*(Personal communication, 25 April, 2017).

In general, the author happily found out that all the interviewees are food-saving-minded and they try not to create food waste at the first place. *“I think I learnt how to take food at Amica. I will always look around and find out what I like. So I won’t end up with so much.”* (Interviewee D, personal communication, 27 April, 2017). *“I will always try not to create waste.”* (Interviewee E, personal communication, 25 April, 2017). *“Every time when I am about to take the food, I always think how it tastes. So I will never take too*

much and later on throw it away. It will be a big waste. I will be careful with the food” (interviewee F, personal communication, 27 April, 2017). Additionally, personal reason is another factor that stop people taking too much than they actually need. For example, both interviewee E and J said that they have started to maintain a healthier diet pattern and to lose weight. Interviewee H mentioned *“I don’t like to stuff myself with too much food. I don’t feel good after.”* (Personal communication, 26 April, 2017). Interviewee C said that *“I try not to overeat as I don’t want to be less effective for the rest of the day.”* (Personal communication, 28 April, 2017). On top of that, she is also very picky with food due to the fact that she is allergic to certain types of food. The interviewees are concerned about the behavior of throwing away the fine food and did show a guilty attitude towards the behavior. *“I was too full and not able to finish the salad. So I threw it away. I felt bad.”* (Interviewee D, personal communication, 27 April, 2017). However, sometimes the waste is still inevitably happened.

Personal taste is the most common answer that interviewees referred to as the reason why they throw away the food. Nine interviewees had experience of throwing away the food that they did not like after trying. The author has been told that the food at Amica is cooked with less spice. Therefore, it tastes relatively light (interviewee E & J, personal communication, April, 2017). When asked how they decided to take the food that they have never tried before, the common answer was that ‘it looks tasty to me’.

Besides, overly taking is the second most common answer of throwing away the food. In total, seven interviewees had experience with having problem to finish the food as it is too much to eat. Among these seven interviewees, overestimating the capacity of finishing the food is one of the main reasons. For example, *“But sometimes when I’m too hungry, I tend to take a bit more. And then it happens that I actually cannot finish the food.”* (Interviewee A, personal communication, 24 April, 2017). *“I try to take the amount that I can finish. But sometimes, it’s not the case. You just take too much and you have to throw it away later on.”* (Interviewee B, personal communication, 27 April, 2017). *“When I started eating, I always started with the warm food first, and later on I was too full and not able to finish the salad.”* (Interviewee D, personal communication, 27 April, 2017).

In the mean time, the large variety of food option is another main reason that contributes to overly taking. Interviewee A described *“It’s always tempting. You always want to try a bit of everything. They really have very fine quality of food. I try to be rational with the quantity I can finish, but sometimes I just take too much.”* (Personal communication, 24 April, 2017). Interviewee D said *“I always put so much different salads on the plate. They all look good and taste good.”* (Personal communication, 27 April, 2017). Interviewee E said *“that’s the imperative you get. [...] it always ends up very much anyway. [...] whatever they have, it is always possible for me to fill up one and half plates. And I’m not always able to finish it.”* (Personal communication, 25 April, 2017).

Having the mentality of fully taking advantage of the paid price can lead to overly taking, which was embodied by interviewee G that *“because I want to maximize the benefits. That’s why with the food I like, I tend to take a lot.”* (Personal communication, 28 April, 2017). The influence on encouraging each other taking more food also suggests the likely cause of overly taking. Interviewee D said she used to be encouraged and take more food whilst she failed to finish it afterwards.

Apart from the reasons mentioned above, the author found out that mobile phone can also lead to plate waste. When interviewee A eats lunch alone at Amica, she tends to use mobile phone while eating, *“I always use my phone when I eat alone. Sometimes I feel I lost appetite while using phone maybe because I focus too much on the phone.”* (personal communication, 24 April, 2017). Moreover, interviewee G expressed *“a sudden call from work will make me lose appetite, then I will have problem to finish the food.”* (personal communication, 28 April, 2017). Through these two examples, it clearly shows how external distraction can negatively affect people’s appetite and cause plate waste. Perhaps the waste issue could have been avoided if they are not disturbed by phone call or phone using.

Furthermore, there is an interesting discovery through the interview. A few years ago, Amica used to offer a type of small plate specifically for salad. However, this was cancelled later on as the restaurant realized that there were too many salad wastes going on because people tend to eat warm food first, and then they will not be able to finish the salad. In order to prevent too many salads from being wasted, Amica decided to offer

only one type of plate that is used to contain both salad and main courses. And then customers will have to limit the quantity of salad at once (interviewee D, personal communication, 27 April, 2017).

4.2 Findings regarding frequency

As mentioned before in the method part, after pilot interview, the author realized that the frequency of having lunch will influence customers' attitude towards lunch discount offer, therefore the author asked each of the interviewee to tell how often he or she has lunch at Amica as well as each individual's own opinion on defining whether he or she is regular customer or non-regular customer. During the interviews, the author realized that those who considered themselves as regular customers tend to use week as the frequency base, whilst those who considered themselves as non-regular customers tend to use month as the frequency base. Besides, when asked about how often they come to have lunch, those who perceive themselves as regular customer tended to give me the answer more spontaneously without thinking too much, whereas those who perceive themselves as non-regular customers tended to recall and thought for a few seconds and then gave me a rough answer. For example, interviewee A mentioned: "*at least once a week. Sometimes I just come for take-away salad.*" (personal communication, 24 April, 2017). Interviewee D said: "*um one to three times a week.*" (personal communication, 27 April, 2017). Interviewee G said: "*two to three times a week. Quite regular.*" (personal communication, 28 April, 2017). Compared to interviewee A, D, E, and G, interviewee J's visit is slightly less, she said "*um 2 to 3 times a month. Could be more.*" (personal communication, 28 April, 2017), but she still considers herself as a regular customer in general.

On the other hand, interviewee B said "*not so often, perhaps once a month.*" (personal communication, 27 April, 2017). Interviewee C said "*and I'm not a regular customers, probably once a month or something.*" (personal communication, 28 April, 2017). Interviewee F said "*not very often, once a month perhaps when I will have lunch meeting*

with somebody. Or if my friend would insist...personally I don't really like the food here." (personal communication, 27 April, 2017).

Consequently, in accordance with the frequency and people's own perception, five interviewees are seen as regular customers, they are interviewee A, D, E, G, and J. The remaining five are regarded as non-regular customers, which involves interviewee B, C, F, H and I.

4.3 Findings regarding RQ2

After having interviewees categorized into two categories and repeatedly reading the interview transcriptions, the author found the similarities and differences with regard to their reaction towards lunch discount among these two groups.

For regular customer group, all of them immediately showed interest in accepting the lunch discount offer. Not only for the discount itself, but also for the willingness to take the responsibility of not creating plate waste. *"ah interesting technique. I'm up for it. It's a good way to prevent me from wasting food. Without this, I probably will just let go the food when I cannot finish it. But now I will control myself and finish the food."*(interviewee A, personal communication, 24 April, 2017). *"ah-ha. I think I will. [...] I already try not to waste food. With this lunch discount, it kind of strengthening my determination."*(interviewee D, personal communication, 27 April, 2017). *"yeah, that's a good idea I think. I get a reminder that I shouldn't create the waste. Also, take the initiative to contribute to the restaurant. [...] I don't want to spend too much money on lunch. Even its 10 or 15 kr less, it's still something."*(interviewee J, personal communication, 28 April, 2017).

For non-regular customer group, all of them showed their interest to the lunch discount, nonetheless, they were hesitated to accept it. One reason is that they think it takes too much time till they can actually use the discount. Therefore, having lunch discount realized sooner would be more acceptable and ideal for them. *"well, as a non-regular*

customer, I'm not very sure if I will follow it? Maybe for regular customer it's more worthwhile coz they can have the discount already much earlier. But for me, I won't have it in probably 4 or 5 months...it doesn't sound so tempting anymore for me. If I can get the discount more quickly for doing it, then I would be more interested at following it.” (interviewee B, personal communication, 27 April, 2017). *“um, to have it realized sooner I think. I like this idea better than that 5 times. It will encourage me to come back sooner as well.”* (interviewee C, personal communication, 28 April, 2017). *“hmm maybe if I can get this discount sooner. Maybe it will also increase my visit.”* (interviewee H, personal communication, 26 April, 2017).

The other reason is that the perceived lunch discount is not attractive enough for the non-regular customers. Therefore, they prefer either there will be an offer which is bigger than 15% off or another form of rewarding. Interviewee F said that *“hmm if the discount will be higher, like 50% off, I think it will be more tempting for me.”*(personal communication, 27 April, 2017). Besides, she also mentioned that she would prefer to have the discount used sooner rather than waiting for a longer time period. Interviewee I said that *“[...] I'm non-regular customer, I don't come here often, to get the discount will probably take me a couple of months...haha, I don't see it tempting at all to me. Only 15%off after 5 times, it's too little. hmm I would prefer empty plate for 9 times then you get one lunch meal for free. Think it can also increase my visit as well.”*(personal communication, 25 April, 2017).

When asked how it will affect them if lunch discount will be removed some day, all the interviewees from both groups responded that they will continue to be mindful with not wasting food. And all of them held a positive view towards the influence of lunch discount on plate waste reduction.

Four interviewees from regular customer group (including A, D, G and J) and two interviewees from non-regular customer group (including B and C) said that they considered the function of lunch discount as the process of creating habit of reducing plate waste. For example, *“I think the discount itself works as a sign and to tell people to make a difference. Maybe you used to take a lot and throw away a lot, but then during this lunch discount time period, you will learn how to smartly choose the food, so it will*

work in some way.” (interviewee D, personal communication, 27 April, 2017). *“I think it would be good to have it implemented for a couple of months. So then it will create a routine for people of not wasting food.”*(interviewee J, personal communication, 28 April, 2017). *“hmm... I think so coz it will become a habit and it will continue motivating me not to waste food.”* (interviewee B, personal communication, 27 April, 2017).

The remaining interviewees (including E, F, H and I) from both groups perceived lunch discount acts as enhancer and reminder on encouraging customers to reduce plate waste. As they already created the habit of not wasting food on their own, therefore, lunch discount helps strengthen their determination and behavior. Interviewee H said that *“regardless of this discount thing, I will always bear in mind of not wasting food. With the discount is better, but without it, I can also try not to waste food.”* (personal communication, 26 April, 2017). Both Interviewee E and I said that when lunch discount will be removed, they will not be as careful as they do when they know they can get discount as a reward on empty plate. If they take the food that they do not like, they might throw it away. But they will always try not to create plate waste at the first place. In addition, interviewee E said that he thinks when inner ambition combined with external influence, it will function the most on making people reduce plate waste. *“I think it’s the combination thing. The external together works with sort of inner ambition. From your own perspective, you need to have the awareness or the strength to limit your diet. And be responsible for the environment. Be sustainable.”*(personal communication, 25 April, 2017).

5 Data analysis and discussion

As mentioned earlier in the method chapter, thematic analysis will be used as the qualitative data analysis approach in this thesis. The author created three thematic frameworks regarding the research questions (see appendix framework one to three). The first framework is related with the first research question. The second and the third

frameworks are linked to the second research question. The following analysis and discussion are based on the empirical findings above. Firstly, the author strived to explain what are the likely reasons of plate waste at Amica by boiling down into three aspects, namely, ‘personal taste’, ‘simply taking too much’ as well as ‘mobile phone distraction’ and gave the explanations of why these three aspects became the likely causes of plate waste respectively. Secondly, the author attempted to interpret the impact of lunch discount as extrinsic reward on customers’ perceptions on plate waste reduction. To facilitate the analysis, the customers are categorized into two groups, i.e. regular customers and non-regular customers. After analysis, the author presented discussion of the data analysis.

5.1 Analysis of findings concerning RQ.1

- Personal taste

Taste, flavor and texture are perceived during chewing and will contribute to the perception of the given food. Not only the senses of taste and smell play a significant role in choosing the food, but also the visual information of a food is essential in the choice and acceptance (Pereira & Bilt, 2016). Amica offers different salads and main courses from Monday to Friday. And the food is very international. There will be Nordic style, Mediterranean style, Asian style, Italian style, etc. There will always be something new for the customers. The majority of the participants said that they had experience with the fact that they did not like the selected food after tasting. Some said they did not like the taste whilst others said they did not like the texture. When it comes to the food that they have not tasted before, they firstly judge the food via visualization. If the food looks tasty to them, then they will take a little bit portions to try. After trying, if the actual taste did not live up to their expectations, the rest of that specific food would be thrown away. This is one of the common reasons referred by interviewees as plate waste when having buffet at Amica. In their article, Marlette, Templeton, and Panemangalore (2005) said if the service providers lack knowledge of consumers’ preference food items, temperature, flavor and quality, it can create plate waste. As consumers, we both have similar and different preference of tastes. It is tough for buffet restaurants to assure that all the

customers will like all the tastes of food they offer. Therefore, the author thinks that personal taste is one of the most difficult aspects to control the plate waste. Like other restaurants, personal taste is a likely cause of plate waste at Amica.

- Simply taking too much

Our stomach has limited room for food. At the certain point after eating food, our brain will send out the signal to our stomach that we are full. When having meal at buffet restaurants, if we take more food than our body can accept, then some of the food will become waste afterwards as we are not able to consume all of it. According to the interview respondents, it happened to them that it is too much to finish everything they took on their plates. Thereby, they had to throw away the food. The following discussion is the further analysis of what made the interview participants take too much food when eating buffet at Amica.

All-you-can-eat buffet has been favored by customers due to its high level of food diversity and infinite opportunities to refill the plates with the provided food. In buffet restaurant, the dishes are placed in the public area where customers can take the initiative and have direct free access to the food and can obtain the food directly (Lin, 2016). The difference between buffet restaurant and normal restaurant is that customers pay a standard price. Subsequently, they can help themselves with the food they would like to eat and the quantity that they prefer to take. This attribute has therefore left room for plate waste.

Food is always the major part of the restaurants. The interview respondents said that when they see so many food options to choose, they always want to try a bit of everything. It is easy to have a plate full of food. Whether it is the food that looks scrumptious or it is the food that people know they will certainly like, as Wansink (2004) asserted that the presence of food can be a constantly tempting signal for consumption. Simply seeing or smelling a food can stimulate unplanned consumption (Wansink, 2004). Consequently, the author thinks the various food selections are likely to make customers prone to overly take food when having buffet.

In Amica, customers have free access to get the food on their own after payment. Although customers queue during rush hour to get food, in general, the interview participants said that they think it is easy and convenient with the structure. Wansink (2004) referred the ease, access or convenience with which a food can be consumed to eating effort. And it is one of the strongest influences on consumption as it indicates what food people prefer and how much they will eat. In this case, the author thinks that the feature of unlimited times of accessing the food is a supportive condition for overly food taking.

The interview participants perceived that it is more enjoyable to have lunch together with some others than eating alone. They tend to have longer meal time and get the chance to socialize with others. This is in line with Wansink's (2004) statement that socializing can influence meal duration especially when eating with familiar people. On the other hand, the presence of other people can have direct influence how one's consumption norms. Interviewee B and D both admitted that they tended to take more food when they see their companions are still having food to eat or they get more food that attracts their attentions even though sometimes they already feel full. Eating with others is a socializing process and people can mutually affect each other. Everyone has his or her own consumption norms. Consumption norms refer to the usual amount that one consumes (Wansink, 2004). It is likely that consumptions norms will be affected when having meal with others as their consumption monitoring will decrease. Wansink (2004) said that viewing the behavior of others has been proven to have implicit impact on consumption, meaning that one's consumption norms can be affected by the people around them. Accordingly, the author thinks that companion's influence can likely lead to overly taking behavior via affecting one's consumption norms.

The aforementioned reasons are from external perspectives. In addition, there are some reasons that are internally triggered. People tend to subjectively overestimate their capacity of consumption when having buffet at Amica. Interviewees mentioned that they tend to take a big portion of food when they feel starved or when they see their favored food is offered. However, they did not always manage to finish everything on the plates. Therefore, some of the food became waste. The author thinks the reason behind this

phenomenon is because people's consumption monitoring level is low, which increases the consumption discrepancies, meaning that their perceived consumption amount is bigger than the actual consumption amount (Wansink, 2004). Hence, low consumption monitoring can likely contribute to overly taking behavior and plate waste. On top of that, interviewee G said when he goes to Amica, he wants to maximize his benefits of eating lunch there because of the paid price. This kind of mentality of getting more than what you actually paid for can directly lower the consumption monitoring ability and make people conduct overly taking behavior and is likely to create plate waste.

In author's point of view, overly food taking behavior is affected by several factors simultaneously, which involves low consumption monitoring ability, salience of food, and free access to food. These factors are interconnected and collectively work together that led participants to perform overly food taking behavior and thus generate plate waste afterwards.

- Phone distraction

Wansink (2004) said that external distractions can initiate, obscuring, and extend consumption. In his paper, Wansink explained how external distractions can lead people to overeat such as eating popcorn while watching movie or TV. But in this thesis, it is discovered that mobile phone can actually make people lose appetite when too many attentions are paid to the phone or work-related phone calls. As a consequence, the food will be thrown away. It is clear that external distractions have two-side effects on consumption. Depending on what location and what mood people will have, different situations lead to different outcomes. In the case of Amica, phone distraction is likely to cause plate waste.

Furthermore, as it has been discovered that there is a common pattern among interviewees that they think the atmospherics of Amica is quite bright and spacious. However, they do not find the atmospherics at Amica attractive or special in terms of lighting, odor, and temperature, and flowers. And they do not pay many attentions to it either. A few of the interviewees even stated that they feel less cozy when having lunch at Amica such as the loud noise in the surroundings and the hard chairs to sit on. But in

general, it is a fine place to have lunch as there are many food choices and. Different from other buffet restaurants, Amica only offers lunch buffet during workdays from eleven o'clock to two o'clock. And it is located at school and working area, so the main customers are students, school staff and company employees. During lunch time, customers tend to put focus more on choosing and eating the food other than the atmospherics. It is more about eating the food and going back to study or work instead of relaxing and enjoying meal. Therefore, as lunch buffet restaurant, apart from the fine quality food, the atmospherics of Amica is relatively simple and basic. Wansink (2004) mentioned that atmospherics has influence on eating duration and food consumption volume. More food will be consumed when the atmosphere is with music, dimmed light, and cold physical feeling. The author agrees with this statement but in the case of Amica, it is not prominent to judge whether it has direct connection to plate waste generation. It does not mean that the atmospherics at Amica has no impact on customers' consumption pattern, but rather it is unclear to see the relation. Nevertheless, the author believes that it might have different impact on the consumption behavior when having dinner buffet where the atmosphere of the restaurants is more comfortable such as with soft music and dimmed light. Interviewee C said that it is likely for her to have plate waste when she is in a cozier and more relaxing atmosphere.

5.2 Analysis of findings concerning RQ2.

- Regular customers vs. Non-regular customers

First of all, regular customers and non-regular customers reacted differently towards the suggested lunch discount 15 percent off based on the condition of empty plate for every five times. Regular customers immediately showed interest in accepting the offer not only for the discount itself but also for the willingness to take the responsibility of not having food wasted. Non-regular customers did show interest towards the idea of using lunch discount as a reward on empty plate. However, they would prefer an offer with either bigger lunch discount or to use the discount sooner. In this case, it is likely that the discount can in turn increase the time of having lunch at Amica. As non-regular customers, the proposed lunch discount offer is not tempting enough to have them

involved in the empty-plate-activity. Hence, in terms of lunch discount in general as extrinsic reward, both regular and non-regular customers are extrinsically motivated. But with the suggested 15 percent off on empty plate for every five times, non-regular customers are less extrinsically motivated than regular customers.

Secondly, in general, there is a positive attitude towards the influence of lunch discount on plate waste reduction from both groups. Some people think it plays a role in helping develop a habit of not wasting food. They believe that it can also help people re-find the limit of food consumption and properly make estimation of the right amount to consume so that they can reduce the plate waste. Other people see it as enhancer and reminder of not wasting food. They tend not to create plate waste at first place regardless of lunch discount. With discount, they feel the determination can be more motivated and the behavior of not wasting food can be strengthened. Deci, Cascio and Krusell (1975) stated that when extrinsic rewards are involved in the activity, the individual will start to believe that he is undertaking the activity only for the rewards. Consequently, the perceived locus of causality shifts from within him to the given extrinsic rewards, meaning that the intrinsic motivation of the individual will be decreased. Originally, all the interviewees are food-saving minded and they try not to create plate waste at first place, meaning that the perceived locus of causality stays within them and they are intrinsically motivated. When lunch discount is involved, firstly, the extrinsic motivation is increased and people admitted that this is part of the reason why they would like to accept the lunch discount for the sake of economic perspective, which implies that part of the perceived locus of causality has shifted to lunch discount. But this does not mean that intrinsic motivation is dropped. Since lunch discount will not be given unless customer fulfill the requirements of empty plate for every five time, meaning that customers have to make effort in finishing all the food on the plate, which reinforces their competence and self-determination. Besides, part of the perceived locus of causality still stays within them. Therefore, in sum, the intrinsic motivation is increased. This outcome is also in line with what Cameron and Pierce (1994) claimed that in order to avoid negative impact on motivation, rewards that are given should be contingent on the level of performance.

5.3 Discussion

Earlier studies indicate that plate waste occurs due to the fact that the food providers lack knowledge of consumers' preferences of food items, temperature, flavor and quality (Marlette et al, 2005). Williams and Walton (2011) concluded that the nature of the consumer such as low appetite, food consumption under limited time as well as the environmental issues such as noise and smell could also be taken into account as the causes of plate waste. The author agrees with these researchers. Additionally, consumers' preferences of food have also been referred by the interview participants as one of the reasons for plate waste. But taking buffet into account, the behavior of overly taking is therefore more unique for causing plate waste. As customers, we cannot control the actual taste of the food. However, we can fully control the quantity that we take in buffet restaurants. If we are more mindful and responsible with our behavior, plate waste can be improved.

Concerning the impacts of extrinsic reward on people's intrinsic motivation, it is controversial. Some researchers concluded that extrinsic reward are thought to be harmful to intrinsic motivation, especially when rewards are acted in a dominating way to make the action take place (Ryan & Deci, 2000; Bear, Slaughter, Mantz& Ripple, 2017; Rummel& Feinberg, 1988). Others asserted that neither reward can decrease nor it can increase intrinsic motivation (Cameron & Pierce, 1994). Ryan and Deci (1985) examined the impacts of different characteristics of extrinsic rewards on intrinsic motivation. They found that task-contingent rewards will lead to a decrease in intrinsic motivation due to the decrease occurred in self-determination especially when the rewards are expected and tangible.

In this thesis, according to the author's own investigations and explorations, it is clear that extrinsic reward can increase the intrinsic motivation. There are a few points that

support this statement. During empirical investigations, the author discovered that even though the interview participants had different opinions on the suggested lunch discount offer, they did show their deep understanding of the intention of implementing lunch discount as reward for people who can empty plate. The discount helped them understand the restaurant is asking for their cooperation to reducing plate waste. Additionally, they have also been personally aware of the importance and responsibility of not wasting food resources. The author believes that person attaching his or her own empathy of doing something is a crucial and essential base for generating their basic intrinsic motivation. Intrinsic motivation comes from the inside of someone, and having right insights and vision is helpful to build up the inner values and inner ambitions with regard to the things they are engaged to. On top of that, extrinsic reward should contribute to the intrinsic motivation developing other than acting in a dominating way to force the action take place. When these requirements are met, our intrinsic motivation can be increased by extrinsic reward. To large extent, this explains why in this case, lunch discount has strengthened people's perceptions on plate waste reduction.

Hence, contrary to previous researches, it turned out that there is a possibility that extrinsic reward can increase intrinsic motivation. No matter it is education context, working setting, foodservice industry or any other environments, the crucial point is that people need to be self-motivated first by knowing the meaning and purpose of the performance. Extrinsic reward should not be as an inducement for people to engage in a behavior in which they might not otherwise engage. Rather, it is something that makes people more determined with their behavior. Intrinsic motivation is a significant factor in cognitive, social and physical development because it sparks people's genuine inherent interest and helps people strengthen knowledge and skills (Ryan & Deci, 2000).

Whether it is the process of developing a habit or works as an enhancer, looking at the responses from the interviewees, lunch discount has clearly shown its possibility of achieving the effect of reducing plate waste in the case of Amica restaurant. People can understand the meaning and intention behind and take the initiative to control the diet and not to overestimate the capacity of consumption. The author believes especially for those who tend to take more than they can eat, lunch discount can help them re-find the limit

and reduce the plate waste. None plate waste is an ideal situation, however in reality, plate waste still inevitably exists. For example, out of personal taste or external distraction. By taking advantage of discount as extrinsic reward, the point is to positively arouse the attention of taking the initiative not to overly take food, and do not overestimate the capacity of consumption in buffet restaurants, and thus reduce the plate waste in the long run.

6 Conclusion

In this chapter, the author will restate the aim of the thesis and provide the answers for the proposed research questions and contributions to the research.

The purpose of this thesis is two-fold. Firstly, the author intends to examine and understand the likely reasons behind the plate waste in buffet restaurant setting. Secondly, the author seeks to qualitatively find out the relationship between lunch discount and customers' perceptions on plate waste reduction. By answering the research questions, the author has fulfilled the purpose of this study.

RQ1. What are the likely causes of plate waste in buffet restaurant setting?

The results from empirical findings have suggested the likely causes of plate waste including personal taste, overly taking, and mobile phone.

Plate waste caused by personal taste means the actual taste of the food does not live up to one's expectations and does not taste as tasty as it looks. Therefore, it becomes the waste afterwards. And this is one of the most common reasons mentioned by interviewees when having buffet at Amica. They said the food at Amica tastes relatively light compared to

some other restaurants and there is not enough spice contained. Therefore, person taste can likely cause plate waste in buffet restaurants.

The second most common reason of plate waste is caused by overly taking. Literally, it means taking too much of something and fail to finish it and eventually becomes the waste. Overly food taking can be triggered by three external factors and two internal factors. These factors are mutually connected and jointly work together that leads to the behavior of taking more food than our body can accept. As a result, the food becomes the waste. The external factors include and various food options, free access to food and companions' influence. The internal factors include low consumption monitoring abilities and the mentality of maximizing the benefits of the paid price. Various food selections can acts as a signal or reminder for continuously tempting consumption. Besides, in buffet restaurant, the dishes are placed in the public area where customers have free access to the food as many times as they want and can obtain the food directly. This easy and convenient way of reaching food with low effort facilitates the consumption and explained why the phenomenon of overly taking food can take place. Moreover, when having meal together with companions, visually seeing his or her consumption behavior can affect one's normal consumption norms. In conjunction with the aforementioned three supportive perspectives of overly taking behavior, when people have higher level of perceived consumption level than actual consumption level, and tend to fully take advantage of the paid price by getting as much food as possible, it can also contribute to overly food taking.

Moreover, mobile phone can act as external distraction such as a sudden phone call from work or reading from mobile phone while eating, which distracts people's attentions from eating and makes people lose appetite. Consequently, it can likely lead to plate waste.

RQ2. How does lunch-discount as extrinsic reward will affect customers' perceptions on reducing plate waste in buffet restaurant setting?

Customers held different views towards the suggested lunch discount 15 percent off based on the condition of empty plate for every five times. Regular customers immediately showed interest in accepting the offer not only for the discount itself but also

for the willingness to take the responsibility of not having food wasted. Non-regular customers did show interest towards the idea of using lunch discount as a reward on empty plate. However, they would prefer an offer with either bigger lunch discount or to use the discount sooner. It can not only have them involved in the empty-plate-activity but also can increase the time of having lunch. Hence, in terms of lunch discount as extrinsic reward, both regular and non-regular customers are extrinsically motivated. But non-regular customers are less extrinsically motivated than regular customers.

Moreover, there is a positive attitude towards the influence of lunch discount on perceptions of plate waste reduction. Some people think it plays a role in helping develop a habit of not wasting food during the process of empty plate activity. They believe that it can also help people re-find the limit of food consumption and properly make estimation of the right amount to consume so that they can reduce the plate waste. Other people see it as enhancer and reminder of not wasting food. Without discount, they are still trying not to waste food since they are food-saving minded. With discount, they feel the determination can be more motivated and the behavior of not wasting food can be strengthened. As extrinsic reward, lunch discount can increase people's intrinsic motivation of reducing plate waste.

7 Contributions and managerial implications

Plate waste related researches have been broadly studied in various settings by researchers when it comes to causes and strategies. Nevertheless, the focus on buffet restaurant setting is still underdeveloped. After understanding the behavior patterns on plate waste and the possible improving mechanism in the case of Amica restaurant, this thesis has made contributions to both academic field and foodservice field. For academic field, this thesis extended the scale of motivation theory into the foodservice context to explore how extrinsic reward affects people's intrinsic motivation. The findings suggest that extrinsic reward has the possibility to increase intrinsic motivation. For foodservice field, this thesis is the first one to investigate the likely causes of plate waste in buffet restaurants, and is the first one to combine motivational technique and marketing

promotion technique together to explore its effect on people's perceptions on plate waste reduction.

Fining customers for plate waste may cause customer dissatisfaction, and the switch to other restaurants. In the end, it might negatively affect the business from both reputation and economic perspective. And essentially, it might be counterproductive and customers may take it as offense and fail to understand the intention behind. The findings of this thesis are important as service providers can better understand what led to plate waste and how customers perceive the idea of rewarding for empty plate. For buffet service providers, taking advantage of discount as extrinsic reward to help customers take the initiative not to waste food can be a win-win solution.

8 Limitations and future research

The author has realized this thesis has a few limitations. Firstly, the chosen case Amica only offers lunch buffet during weekdays. And the eating environment is basic and simple. Therefore, the author thinks dinner buffet restaurants with cozier eating environment such as with soft background music and dimmed light might have carried out different research outcomes in terms of the likely causes of the plate waste.

Another limitation in this thesis is that since Amica is located in the school and workplace area, so the majority of the customers are campus students, school staff and company employees. Young kids and elderly people are rarely seen having lunch at Amica. To achieve a thorough understanding of the research questions, the author thinks that these groups should also have been included.

Hence, taking the limitations into consideration, the author suggests to continuing the current research in dinner buffet restaurants where young-aged group and old-aged group can be included, and making comparison between the results. The author sees it as a good direction for future research as it can contribute to a more complete research understanding.

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10 Appendix

Theme: likely causes of plate waste (Framework 1)

Interviewee #	Personal taste	Simply taking too much	Phone distraction
A	“oh yeah, it happened. I will have to throw it away.”	<p>“It’s always tempting. You always want to try a bit of everything. They really have very fine quality of food. I try to be rational with the quantity I can finish, but sometimes I just take too much.”</p> <p>“But sometimes when I’m too hungry, I tend to take a bit more. And then it happens that I actually cannot finish the food.”</p>	“yes, I always use my phone when I eat alone. Sometimes I feel I lost appetite while using phone maybe because I focus too much on the phone. I will still try to eat it but if I cannot manage to finish it, I will throw it away”
B	“I try something that looks tasty for me, but after I tried it, I don’t really like it and then I throw it away.” Compared to overly taking, this happens less.	“I try to take the amount that I can finish. But sometimes, it’s not the case. You just take too much and you have to throw it away later on.”	Did not experience this
C	“I would say in amica the reason I left food uneaten is because the food doesn’t taste good to me.”	Did not experience this	Did not experience this
D	Did not experience this	“it used to happen a lot[....]I always put	Did not experience this

		<p>so much different salads on the plate. They all look good and taste good. Then when I started eating, I always started with the warm food first, and later on I was too full and not able to finish the salad. So I threw it away.”</p> <p>Companion’s influence is another reason of her plate waste.</p>	
E	<p>“Sometimes it also happened that I don’t really like the food I take, so then I will throw it away too.”</p> <p>“withamica, sometimes the food tastes very light and doesn’t have a lot spice in it.”</p>	<p>“yes, that’s the imperative you get. That’s the first thing, you take lots of salad. It always ends up very much anyway. Then you come to the main courses.[...]whatever they have, it is always possible for me to fill up one and half plates. And im not always able to finish it.”</p>	Did not experience this
F	<p>“But if I take something that I don’t like and don’t feel like having the second bite. Then I will throw it away.”</p>	Did not experience this	Did not experience this
G	<p>With the food he dislikes, he will throw it away.</p>	<p>He tends to take a lot when it comes to the food he likes the most. Sometimes he is not able to finish it.</p> <p>“becauseI want to maximize the</p>	Lost appetite due to a sudden call from work, which leads to plate waste.

		benefits. That's why with the food I like, I tend to take a lot."	
H	"I wouldn't force myself to finish it. So I threw it away."	Did not experience this	Did not experience this
I	"I will always try, but if it really tastes bad or tasteless. I won't force myself to finish it. Then I throw it away."	"I like to eat finish. So, I remember once or twice that I threw away some fish coz I couldn't eat it anymore." Compared to personal taste, it happens much less.	Did not experience this
J	"yeah, it happened a few times. I didn't finish it. It's buffet so you can get something tastier otherwise." "I think amica doesn't have enough spice in the food, so it always tastes a bit too light to me."	She used to experience plate waste out of taking too much as "it's very easy to take too much."	Did not experience this

Theme: frequency of having lunch at Amica (Framework 2)

Interviewee #	Frequency
A	"at least once a week. Sometimes I just come for take-away salad."
B	"Not so often, perhaps once a month."
C	"And I'm not a regular customer, probably once a month or something."
D	"um one to three times a week."
E	"once a week I think."
F	"no very often, once a

	month perhaps when I will have lunch meeting with somebody. Or if my friend would insist..personallyI don't really like the food here.”
G	“ 2 to 3 times a week. Quite regular.”
H	“ehh once every 3 or 4 weeks. But sometimes I come here for takeaway salad.”
I	“a bit rare, probably once every month.”
J	“um 2 to 3 times a month. Could be more.”

Theme: attitudes towards lunch discount and perceptions on plate waste reduction

(Framework 3)

	Before dis.	While dis.	After dis.
Regular cus. A,D,E,G,J	All of them are food-saving-minded. All of them experienced plate waste by personal taste and overly taking. A and G experienced plate waste by external distraction such as mobile phone.	As regular customers, all of them immediately showed interest in accepting the lunch discount offer. A: “ah interesting technique. I’m up for it. It’s a good way to prevent me from wasting food.” A: “Without this, I probably will just let go the food when I cannot finish it. But now I will control myself and finish the food.” D: “ah-ha. I think I will. [...] I already	Firstly, all the interviewees reacted that they will still try their best not to waste food. Secondly, A, D, G and J said they see the function of lunch discount as the process of creating habit of not wasting food. E said that he will try his best not to waste food with or without discount, but he might not be as careful as he did when he knew there is lunch discount on

		<p>try not to waste food. With this lunch discount, it kind of strengthening my determination.”</p> <p>E has the same answer as D.</p> <p>J: “yeah, that’s a good idea I think. I get a reminder that I shouldn’t create the waste. Also, take the initiative to contribute to the restaurant.”</p> <p>J: “yes, I don’t want to spend too much money on lunch. Even its 10 or 15 kr less, its still something.”</p>	<p>empty plate.</p> <p>Besides, he said in terms of plate waste reduction, apart from the inner ambition of oneself, external influence is equally important.</p>
<p>Non-regular cus. B,C,F,H,I</p>	<p>All of them are food-saving conscious.</p> <p>All of them experienced plate waste by personal taste. B and I experienced plate waste from overly taking.</p>	<p>They all showed interest to the offer. But are hesitated to accept it due to:</p> <p>1) it takes too long to enjoy the discount (B,C,& H)</p> <p>2)the discount is not tempting enough (F & I)</p> <p>Instead, they would like to either have the discount realized sooner with smaller discount or increase the discount amount.</p> <p>C, H and I even said the discount has the function of increasing their visit.</p>	<p>All the interviewees reacted they will still be food-saving conscious.</p> <p>B and C perceived discount as the process of developing habit of reducing plate waste.</p> <p>F, H and I considered discount as enhancer and reminder for reducing plate waste.</p>

Interview Questions

Q1. What are the likely causes of plate waste in buffet restaurant setting?

Questions related to Q1:

1. *Do you ever pay attentions to the restaurant decoration while you are having lunch at amica? How do you like the decorations in the restaurant? For instance the flowers on the table and the brightness of the restaurant. and the aroma of the food?* *[eating environment-eating atmosphere]*
2. *How do you like the free access to food? How does queuing affect your food take?* *[eating environment-eating effort]*
3. *Whom do you usually come here with?*
If with ppl that are familiar with, do you feel your appetite is strengthened than eating alone? How does that affect you when your companions go for more food? If eating alone, do you use phone while eating? *[eating environment-eating with others & distractions]*
4. *When you see so many different types of food displayed in front of you, are you stimulated to take food?* *[food environment-salience of food]* *Amica have the same food cooked in different ways, for example potato salad and cooked potato or vegetables in the same way. Do you take both coz the tastes are different?*
5. *Do you easily take more food than you actually can eat just because it is buffet?* *[food environment-size of food portions & packages]*
6. *What do you like to use as food container plate or bowl? Why? How many plates/bowls do you place on the tray? Do you fill them till they are full?* *[food environment-size of food container]*
7. *Do you take more than you can eat when it comes to the food you really like? And when the provided food is new to you, are you willing to try? If you realize that you do not like the taste the food, how will you deal with it?*

Q2. How does lunch-discount as extrinsic reward will affect customers' perceptions on reducing plate waste in buffet restaurant setting?

Questions related to Q2:

1. *If the restaurant offers lunch discount (like 15% off) for customers who can finish the food on the plates/bowls for every 5 times, will you follow the idea? If so, then what motivates you to do? The lunch discount or the responsibility of saving food?* *[Extrinsic reward vs. intrinsic motivation]*

2. *If lunch discount is not offered any more, will you be trying not to waste food?*

***Extra questions:**

- *When do you normally come to have lunch buffet? 11-12 12-13 13-14*
- *How often do you come to Amica for lunch?*