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Understanding food choice and its utilities: a case study of the Laurea lunch buffet

Trinh, Minh

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Understanding food choice
and its utilities: a case study of Laurea lunch buffet

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This thesis project is completed in association with the cafeteria at Laurea University of Applied Sciences. The research focuses on understanding the significance of food choice in a university environment, where students can enjoy a healthy and balanced meal. The purpose of this thesis project is to explore the decisive factors and influences that lead to the choice of meal so the cafeteria service will have an opportunity to utilize the knowledge to enhance service quality in the competitive market.

The theoretical framework of the thesis provides an overview of a food choice process model, emotional responses to food choice, food neophobia, and adolescents, young adults and food choice. In order to gain a deeper comprehension of students' eating and drinking behaviors from a psychological and physiological point of view, an online survey of cafeteria customers was employed as a research method. In-depth interviews were also used as a research method in the thesis.

In the research, the total number of participants was 107 from 20 countries. Among them, 19 students had never experienced the service while 88 students had. The group consisted mostly of young adults studying at the Laurea Leppavaara campus. The research started with the most preferred choices such as meat, home cook, home country food and others. Then, the reasons which the students rely on when making the decision whether to eat at Laurea lunch buffet were also asked. The psychological and physiological feelings of before and after having lunch, which can affect the final choices were also analyzed. The information on the menu and the service received positive evaluations from all participants. Based on the results of the analysis, many development ideas were suggested to improve the service and the quality of the food choice as well. The development ideas included adding international choices on the menu, providing more information and channel and payment method and considering additional features to the service.

Keywords: food choice understanding, factors and influences utilization, cafeteria service recommendation and development ideas.

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1. Introduction

There would be no life without food, as famine can reduce the number of the population. As we all perceived that food is a major part in a person's life as well as in overall economy. Nutrients and other substances are vital, so people health and survival condition directly related to food choices. Service providers would gain more benefits if they understand the factors that impact on the people's choice of foods, how much foods will be eaten and the choices between many options. Furthermore, from understanding what influences the consumers' choices and how those choices can affect people, the nutritional status of individuals or of the populations can be improved.

The food consumption is the result of a sophisticated set of behaviors, behavioral sciences including psychological aspects and other related disciplines which are the focus of the research in the thesis. The knowledge and the results from the research can be applied to the food service to make better and more accepted products and services based on the comprehension of eating and drinking behavior.

2. Objective and purpose:

The aim of the thesis is to utilize the Understanding of Food Choice in concepting a catering service.

Research question 1: What are the psychological factors influence the food choice of students?

The purpose of the thesis is to gain a better understanding of the food choice.

In order to answer the main objective, students from different nationalities, ages and backgrounds will participate in a large scale online survey ([Appendix 2](#)). The purpose of the survey is to find out the reasons behind their preferences, liking and decisions; plus, more feedbacks will also expected to be collected.

Research question 2: What are the business insights?

There is an in-depth interview with the restaurant manager Teemu Sirainen to receive the most current information about the service ([Appendix 1](#)). Combining with the analyzed survey result, the Laurea's lunch buffet can utilize the factors into the service

3. A Food Choice Process Model

As can be seen from Figure 1, there are three important components in the construction of food choices: life course, influences and personal food system (Falk et al. 1996; Furst et al, 1996; Connors et al. 2001). In the early research, it is suggested that the past experiences are responsible for later eating patterns, which means “life course” is the key component in the model. Furthermore, when people describe their food choice, there is a variety of factors from the past experiences and the current situations that shape their eating behavior, which is named as influences in the model. The process which an individual developed for choosing foods based on the influences is the personal food system. (Sobal et al. 2006 2)

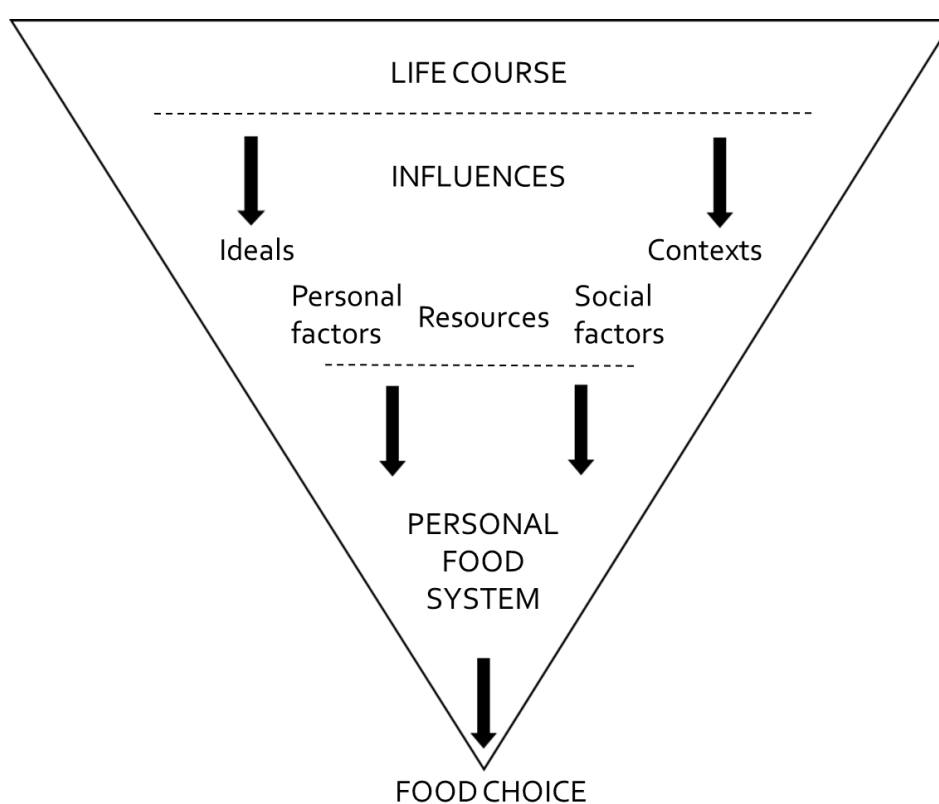


Figure 1: The food choice process model. (Falk et al. 1996; Furst et al. 1996; Connors et al. 2001.)

3.1. Life course

The environments will shape a person development, and construct the life course over time which includes the past and the current food, the consuming experiences and the situations, and the expectations about the future circumstances. Therefore, food choices are believed to be dynamic and gradually mature over time. In the reports of how people construct their food

choices over time, trajectories, transitions, timing and contexts are significant concepts developed in the studies of life course. (Elder, 1985; Devine, 2005)

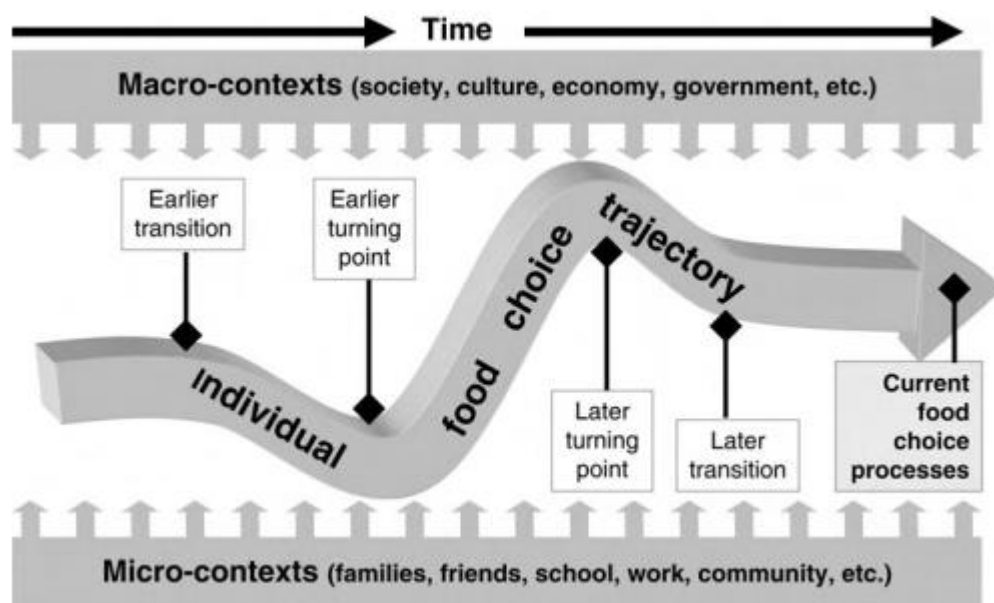


Figure 2: Conceptual model of how food choice is shaped by contexts over time to form a food choice trajectory (Devine et al. 1998).

In life course thinking, *trajectories* are at the center. The food choice trajectories consist of an individual persistent thoughts, feelings, strategies, and actions over life time (Devine et al. 1998). In the early studies, many researchers have been defined the pathways in the eating behavior and viewpoints over the specific life course transitions and over longer periods in life time. Moreover, trajectories which are continual, developed within specific situational and historical contexts. (Devine et al. 1998, 1999b)

The changes or the solidified continual behaviors, included food choices in a person's life are the result of *transitions* (Devine et al. 1998, 1999a). There are significant life events such as attending or leaving school, starting or departing personal relationships, migrating to different area or culture, changing employment, developing an illness and others. All these events might become a turning points in a person's life and have huge impacts on food choices (Devine, 2005). Roles, resources, health or contexts are changed by the transitions and the turning points, as the usual personal food systems are disturbed. This disturbance can lead to small or essential reformation of the food choice patterns. As the result, the formed new personal food systems set up different food choice trajectories. (Sobal et al. 2006 4)

As in Devine et al. (2000) study, *timing* represents a particular transition or turning point occurs in an individual life course, with the specific timing of an event influencing and how it may influence food choices.

The *contexts* mean the environments within that life course changes happen. It consists of economic, conditions, historical eras and the changing physical environment, social structure. (Devine, 2005). People growing in earlier historical era like the 20th century not only developed different food choice trajectories from those of their grandchildren growing up today, but they also concern more about food waste (Falk et al. 1996)

In brief, temporal individual and historical precursors and contexts for current food choices are brought by a person's life course. A person's life course is added with new food choice experience and subsequent food choices are shaped. For considering many individual and contextual influences on food choices, a life course perspective can provide the framework. (Sobal et al. 2006 5)

3.2. Influences:

Particular food choices are shaped by many influences. As can be seen from the food choice process model (Figure 1), there are five influences: ideals, personal food system, resources, social factors and contexts. Sobal et al. (2006 5) stated that when people engage in a specific eating habit, each of these influences placed within and fluctuate over the life course, connects with all other influences and are used in personal food system.

When people choose what to eat, they use the standards known as *ideals* that they learn through socialization and through adjustment to culture. Ideals stand for the indicators about what and how a person should eat. Culturally speaking, people learn about these ideals which reflect the plans and expectations for food, through families and other institutions. In food selection, people consider the ideals like acceptable and preferable foods found in cultural and sub-cultural standards among larger cultures and ethnic groups within cultures (Sobal, 1998; Devine et al. 1999b) . It is showed in early research that ideals about proper meals, appropriate manners, and health are among the significance for many people's food choices. (Sobal et al. 2006 6)

In Bove et al. (2003), the characteristics of a person are defined as *personal factors* that influence the food choices. There are several personal factors such as physiological factors consist of genetic, sensory, endocrinological, etc., psychological or emotional characteristics included: personalities, preferences, phobias, moods, etc., and relational factors like identities, self-concept, etc. they evolve and are gained over time for each person. Moreover, they provide the ground for the exclusive and personalized construction of food choice. Dietary individualism is where people choose their food differently from others based on the preference of personal factors over other influences.

The available assets for people to make food choice are known as *resources* such as not only the tangible physical capital such as money, equipment, space and transportation but also the intangible human capital like time, skills and knowledge; and the intangible social capital consist of help from others, advice and even emotional support. The individual food choice is built up, when people are conscious of the resources they can use and check the options for food by excluding the resources that are not existing. In setting up food choices, a great number of people recognize some types of food choices as “out of bounds” due to the lack of money, time, facilities or cooking skills to choose them (Radimer et al. 1992).

People’s relationships, *social factors*, can also influence the food choices. Chances and obligation for building eating and relationships and food choice are provided by roles, families, groups, communities, networks, organizations and other social units. It is found that eating results in commensal groups, where people need to mutually discuss and manage their own food choices with the foods selected by others (Sobal & Nelson 2003). Sobal (2000) stated that the essential and regularly discussed part of the food choice process is managing such eating relationships with whom someone eats, often decides where, when, how and what they eat.

The bigger environments in which people make food choice are the *contexts*. They are the physical surroundings and behavior settings, seasonal and temporal climate, social institutions and policies. The food and nutrition system constructed in an important environment which decides not only which foods are available for people to choose from, how and where they are prepared, served and eaten, but also the social meanings and functions that they are ingrained with (Sobal et al. 1998). Two basic contexts where people choose their foods are home and workplace with interactive showing between those surroundings (Devine et al. 2003). The particular structural elements and social processes contexts that influencing food options become more complex because people consume food in a more broader range of environments. People’s food choice reconstruction is the result of most contexts change like the availability of seasonal food, advertising and programming as a context for food information, or the historical development of mass media marketing. (Avery et al. 1997)

The external factors, however, are not the only influences. In humanity biological evolution, selecting and eating food are as important as other activity because nutrients from food are essential to human development. The moment of choosing the food is just a step in a sequence of behaviors arranged for the search for food, in which hunger is the biological motive. It is believed that human is one of the food generalist species and the problem for such species is to find nutritional foods, avoid toxins and imbalances. (Nemeroff & Rozin, 1989)

The leading outcome is that human must learn what is good to eat and what is not, and even further, what food combinations are good and not. However, there are some predispositions that help the generalist such as human, to decide which foods should be consumed in the world of thousands of potential foods and poisons. It is clearly seen in taste favoritism: human ingrained tendency to prefer sweet tastes for example when it is related to fruit and avoid bitter taste as it is usually toxins. Also, there seem to be dislikes to strong taste like salt or sour. (Steiner, 1979)

To sum up, the influences on food choice consist of a large scale outlook of biological, behavioral, psychological, economic, social, historical, geographical, cultural, political, environmental, and other influences that repeatedly considered and reconsidered both simultaneously and sequentially in making food choice decision in conscious and subconscious ways. The important of specific factors may change over the life course and fluctuate for particular situations. Input for the personal system which people cultivate of use in cognitively creating particular food choice is provided by influences. (Sobal et al. 2006 7)

3.3. Personal food system:

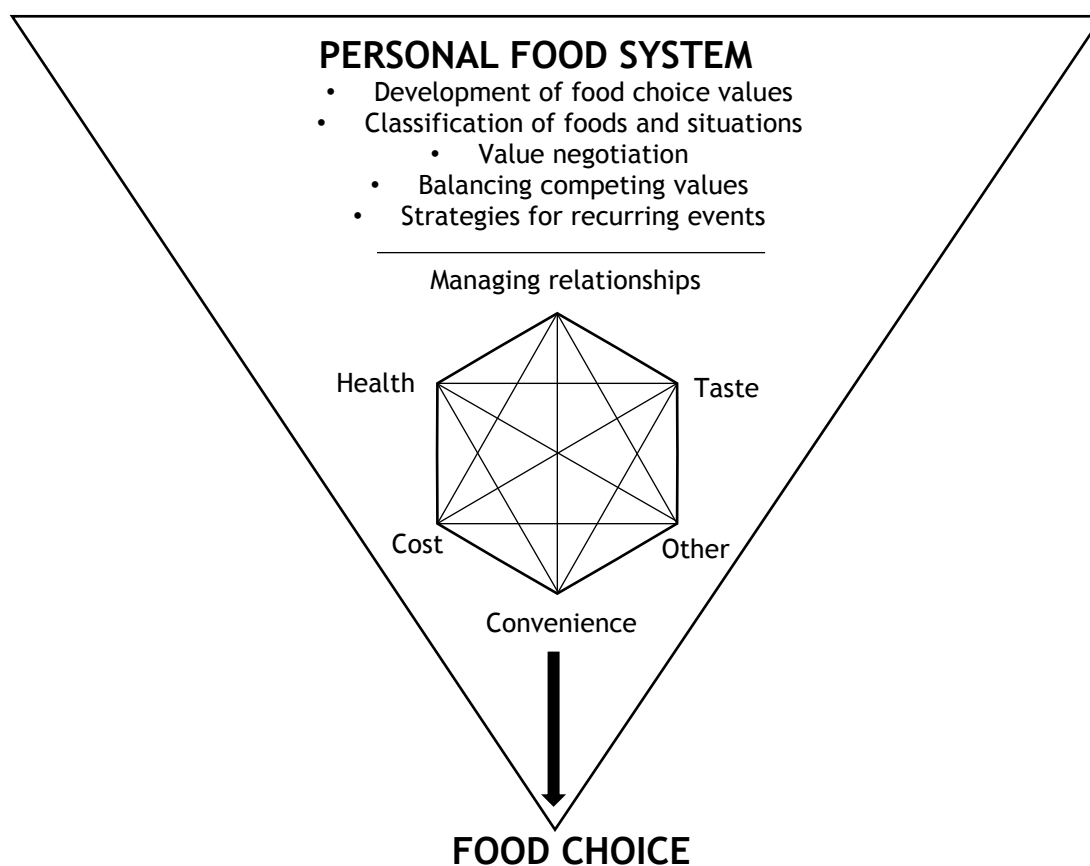


Figure 3: Details of the personal food system (Adapted from the Connors et al. 2001.)

Personal food systems are the psychological processes by which impacts on people's food choices are converted into how and what they eat in repeated situations (Furst et al. 1996; Connors et al. 2001). In the process of making food choices, the personal food system shows the ways to construct options, tradeoff, and boundaries. The processes included in the personal food system are: the processes of building the food choice values, next classifying the foods and the situations related to these values, negotiating these personally defined values in the food choice settings, then balancing the competing values, and developing strategies for food selection and eating in different situations. (Sobal et al. 2006 7)

Food choice values means a set of crucial considerations in making food choices (Falk et al. 1996; Furst et al. 1996; Connors et al. 2001). Not only the personal developed interpretations and meanings related to food and consuming but also the emotional influence and attachment involved in these values (Smart & Bisogni, 2001). These values are changing and evolving over time so the result may be new or modified food choice values, due to life course events and experiences shape food choice influences. There are five types of important values found in early research: taste, cost, health, convenience, and managing relationships, and other extra values are important to some people and groups (Connors et al. 2001)

In eating and drinking, sensory perceptions like *taste* is one of the food choice value that people developed. Various characteristics of food and beverages that affect personal indulgence and dissatisfaction, including flavor, texture, appearance, odour, and other properties are described by the word *taste*. It is the dominant consideration for most people and almost all food and drinking environments, but it is also essential to know that a person's taste preferences may change over time. However, to few people, taste is the least criterion for whether a food or drink will be eaten up or not, so the significance of this value should not be overestimated. (Sobal et al. 2006 8)

The value that represents the time and effort that people use to to build up food choices is *convenience*. A person has to use time and physical ability and the psychological and physical involvement as well to acquire, prepare, consume and clean up after eating and drinking. The main consideration of convenience to students is the time, since it is a personal perception about the time and effort that worth to spend on a specific food and drink (Gofton, 1995). For students and employed people, the basic meaning of convenience is usually time according to many researches Furst et al. (1996); Connors et al. (2001); Smart & Bisogni, (2001); Devine et al. (2003). Cooking skills can also influence diversity of the convenient consideration. (Sobal et al. 2006 8)

When people construct food choice, *cost* is also among the considerations. In contemporary post-industrial society, people rather buy most foods than produce them by themselves and

they evaluate the prices of the food no matter away from home or at home. Individual monetary resources involved in this value so it has been an important and continuing topic to food economists (Senauer et al. 1991). The concept of “worth” is also encompassed in the value of cost. People with high salary rate may be sensitive to the increase in price because they might feel the product is not worth buying, while people with low salary rate still buy high price food since it believed to be good for their health or satisfaction. (Sobal e al. 2006 9)

The food choice considerations constructed in relation with physical well-being is commonly represented by the value of *health*. Allergic reactions, energy levels, digestive discomfort, or athletic performance, even longer term results such as weight control, illness management, growth, or chronic disease prevention are the considerations included in this value, which are the instant reactions to food and drink (Falk et al. 1996; Furst et al. 1996; Smart & Bisogni, 2001). People divide the food based on the good or bad effectiveness of it to their health. There are many interpretations of healthy eating in the population such as overall balance, nutrient balance, weight control, naturalness, disease management, low fat, and disease prevention. (Falk et al. 2001)

In the public interaction, *managing relationships* is a food choice value, when other people’s interests and physical health are considered by another person. The relation of managing relationships with food choice is when food provided or shared to other people or food received from other people. Moreover, other people needs, preferences, and feelings are the common considerations which related to what, how, when, where food is eaten. Relationships can be built, maintained or repaired if there is a compromise in individual needs and preferences. Since food is a very crucial part in family happiness and unity, so the one involves in managing household food is usually aware of the preferences, dislikes and eating patterns of others. (DeVault, 1990)

The considerations about variety, quality, symbolism, ethics, safety and waste in food choice categorized in *other values* according to Furst et al. 1996; Jabs et al. 1998b; Connors et al. 2001. While some people only consider these values in unavoidable situations, others find the considerations connected to these values are highly important. For instance, food choice considerations related to religious beliefs, ethnic identity and environmental careness are dominant for some people. While other personal expectations for quality related to the methods of growing, storing, preparing and presenting the food are the main focus for some people. (Bisogni et al. 1987)

Initially, people classify objects into foods and non-foods, then the food choice classification occurs accordingly to the individual created food choice values, or to the food and eating situations. There are two concepts in the classification: personal classification permits people in

the same household to evaluate the food as it is healthy or unhealthy, cheap or expensive; social classification allows two or more people develop the food categories and eating based on their relationships. People classify their food and eating situations as a way to make the food choices easier in the society where the food system is complicated and diversified in many possible and acceptable consuming ways. (Furst et al. 2000; Connors et al. 2001)

In a specific food consuming situation, the basic food choice process is *value negotiation* since all food choices values can hardly be satisfied (Furst et al. 1996). In a certain environment, people evaluate the choices for how and what they will eat. Before people reach to their decisions for food which regards to the hierarchy of the values, they evaluate the importance of values (Connors et al. 2001). There are a variety of food choice priority in accordance with personal characteristics, personal states and situational contexts. It is obvious that easier choices are the result of some values backing up each other, while the opposition of values can lead to difficult choices. People have to make the most compromised choices since conflicts between values can occur like picking tasty or healthy snack or choosing between affordable or convenient meal, etc. For some people, there are dominant values in their choices, which considered as limiting factors such as a gastronomist who persistently prioritize the taste and quality, and would prefer not to consume the food in some situations than compromise the values. (Sobal et al. 2006 11)

In order to sort out value oppositions, *balancing process* is used. By creating personal methods, all important values are ensured to be met in food choices. There is a resource framework included times, eating occasions, places or eating companions, which personally made for the balancing process (Connor et al., 2001; Smart & Bisogni, 2001; Bisogni et al., 2002) illustrated that people eat healthy foods during work days but eat less healthy foods at the weekends. Other people adjust their health priority over months by reducing food choices at certain seasons of the year. Some people might spend limiting amount of money on daily food but generously spend on vacations or holidays. For some people, they would like to find and eat spicy food when eating alone or with colleague but agree to eat bland food with their young ones. (Bisogni et al., 2002)

For how and what people eat in repeated situations, they cultivate strategies, routines and rules as behavioral plans (Falk et al., 1996; Furst et al., 1996; Connors et al., 2001). When people have strategies for their food choices, there would be no need for time and mind effort to consider about every food choice. Strategies firstly made from an intentional food choice decisions for a particular situation and sooner or later turn into less concerned when the situation happens again. The strategies are believed to be harmonious with the intellectual processes of creating schemas and scripts for variety behavioral environments (Blake &

Bisogni, 2003). The system of individual evaluation and meaning of a situation called schemas and the behavioral plan for that situation known as scripts. (Rumelhardt, 1984)

Strategy	Example
Focusing on the value (emphasize only cost, taste, health, relationships, convenience or another value)	Eat the cheapest food whenever possible Prioritize fast food when busy Eat only tasty food even though may not be healthy
Routinization (standardize, systematize, ritualize)	Eat cereal every day for breakfast Drink coffee every morning
Elimination (avoid, exclude, prohibit)	Never eats desserts Never eats undercooked poultry
Limitation (restrict, regulate, reduce)	Drink only two cups of coffee each day Eat less candies than usual
Substitution (replace, exchange, fill in)	Choose brown rice instead of white rice Choose fruits instead of candies
Addition (augment, include, enhance)	Eat a salad with every evening meal Drink a cup of tepid lemon water with every breakfast meal
Modification (alter, adjust, transform)	Remove fat from meats and poultry

Table 1: Selected strategies for simplifying food choices Falk et al., 1996.

Most people deploy various strategies for making food choices, named as *repertoire* is the combinations of strategies used (Falk et al., 1996, 2001). Although some people have established and use a dominant strategy for their repertoire, other people deploy diversified strategies at the same time, so that they can continuously or situationally to deal with various food choice conditions (Janas et al., 1996; Falk et al., 2001). It is found in early researches that the people who have developed different strategies that can be used in different situations, are the more adaptive eaters or food providers, than those who have only a few strategies that they are not skillful with engaging into different repertoire. (Falk et al., 1996)

Personal and social identities shape the repertoire that a person use for food choices and the food choice repertoires also aid in identity constructions (Bisogni et al, 2002). According to Blake & Bisogni (2003), the dominating types of food choice schema for personal eating are picky eater, non-restrictive eater, dieter, health activist, and inconsistent eater, and the leading types of provider food schema are healthy provider, peacekeeper, struggler, and partnership. Over the life course, people obtain strategies and repertoires for food option by per-

sonally constructing or learning them from others. The strategies and repertoires are changing and sensitive to changes in other food choice processes. (Sobal et al. 2006 13)

The personal food system is the way people construct food choices by take into account values and use other intellectual processes for choosing foods. It would be valuable to recognize the personal food systems in societies where there are various available options for consuming food and few existing rules to guide how and what a person eats (Fischer, 1988; Murcott, 1998). People begin with creating the basic food choice values like taste, cost, health, convenience, and managing relationship. Next, they conceptually arrange foods and eating situations that connected to the values, prioritize food choice values in particular situations. Then, they negotiate values and balance methods of eating. Rules, routines, and habits for decisions making and food behaviors are the results of the construction of strategies, which can be simplified the food choice in repeated situations. The individual food systems are growing and dynamic because they react to new life course events and experiences as well as the food choice influences and the situations that a person confront. (Sobal et al. 2006 14).

Moreover, in individual food choice liking is an important determinant of preference, preference is an important determinant of consumption. Preference is a comparison of two or more of choices for foods. There are two important things to bear in mind about preference: First, preference affects intake but it only one of many influences. Second, preference is connected to liking but it does not represent liking. Liking is an interesting psychological feature of food choice because a large number of food choice motivated by it. The reasons or factors why people like or dislike the foods are unclear but it is easier to understand why health or cost influence preference in food choice. (Rozin & Fallon 1980)

The preference-liking differentiation lead to a psychological classification of foods, which in turn sets the agenda for understanding food choices. According to Rozin & Fallon (1980), sensory properties such as taste, flavor, smell, appearance, ingestion effects like repletion, nausea, etc., and ideational concerns which is related to the nature or the origin of a food are three basic motives for choosing or rejecting the potential foods. Furthermore, there are four categories of food approval and denial specified by the motives: Distastes are driven by sensory properties; Dangers are driven by worries about the consequences of ingestion; Inappropriates are the potential foods that rejected by the cultural definition of food; Disgusts are increased motivated rejections. (Rozin & Fallon 1980)

4. Feelings, Emotions, and Food Choice

The connection between food and mood has been known for a long time. From the examples like the effect of mood on the choices for food, which can lead to a change of appetite, or by changing other behavior that forces or changes food availability, therefore, it is convinced that the interaction of mood and food choice is not just simple as cause and effect. It can be strong and obvious or vague and subconscious. (Gibson, 2006 113)

In general, the examples are strongly related to psychological conceptualization of food choice and appetite because the expectation of changing the internal state which are nutritional, cognitive or emotional from current need, to required such as ideal/satisfied state drives the food choice and appetite (Booth, 1994). As a result, mood could bring an internal stimulus or state that can bring out a favorable food choice. Moreover, it is suggested that change of food choice leads to change of mood as consuming a specific food or combination can change mood through sensory effects, identified social contexts, subconscious anticipations, alterations in appetite or nutritional modulation of brain function. (Gibson, 2006 113)

4.1. General effects of hunger and eating on mood

the change in mood and arousal that happens from before to after eating a meal is considered as the most typical situation in which food can affect behavior. The most trustworthy example of an impact of diet on behavior is the general effects of meal. When people are hungry, they tend to be provoked, attentive and even annoyed. The outcome is the encouragement to look for food and people's mental efforts of other behaviors can become distracted by this task. (Zagon, 2001)

People will be calm, laid-back and even sleepy after eating a satisfying meal, as the vagus nerve from the gut and liver transfer the afferent information about nutrient absorption to the brain. The emotional behavior impacted by this internal information passage is starting to draw attention. However, the person's first state, expectations and attitudes are the dependences of a food or beverage influence. For instance, people would be pleased to eat if they were allowed to eat when they are hungry versus when they are full, then they would not be so pleased to eat. (Roger et al., 2001)

The manipulation of the structure of meals which leads to the difference in postprandial changes in mood and mental function were proven in a variety of experiments. There are two other influences are known for the measurement purposes of the dietary effects on behaviors. (Gibson, 2006 115)

First, people have their own the habit for choosing the food, size and time of meals, which results in a set of beliefs and expectations about the effects of this habitual dietary system.

Then, these expectations may overpower or lessen physiological changes especially in the short term trial. When the dietary experiences are dissimilar to the eating habit, a person's behavior can be changed through mental rather than physiological influences. According to Craig (1986), it depends on the difference of the meal size from the one that habitually eaten, can lead to the decrease in the provocation and weaken judgement, although the bigger meal is the evidence for this effect. In 2002, Gibson & Green suggested that the impact of meal size on mood is small except the meal is too little. When in fact Macht (1996) believed that a larger meal restricted the decline of people's mood when the noise cause the stress.

Secondly, there are the circadian rhythms in waking up and act that make the meal effects difficult to understand. During the morning, the levels of awaking rise and reach the highest point near midday. As some proofs show that breakfast can aid to control the awakening, so that the given task can be successfully focused (Pollitt et al., 1983). On the contrary, leaving out breakfast can increase autonomic reactivity which means less focus especially when increasing hunger involve (Connors and Blouin, 1983). The term "post-lunch dip" has been established for the decrease in awakening and energy to stay focus after midday meal (Folkard & Monk, 1985). Due to alertness has been discovered to drop from the late morning to early afternoon in subjects skipped lunch, so "post-lunch dip" may not simply be an eating effect. Confounded with the effect of midday meal is the fundamental circadian rhythm. Smith & Miles (1986), found that avoiding the decrease in performance by using noise in waking up the subjects during a midday meal.

4.2. Sensation, expectation and mood

The sensation that sweetness brings to us is pleasant, while bitterness and sourness might bring unpleasant sensations derived from food tasting. As a matter of fact, satisfaction and dissatisfaction are the basic concepts controlling the motivation to select specific foods. It is crucial to know that the sensory qualities of foods are the dependent on context and experience and do not have constant hedonic attributes. People can predict the hedonic reactions to different foods or tastes in a given context, but there will be diversity in hedonic reactions since eaters have diversified experiences and attitudes. (Booth, 1994).

The personal predictions of the aftermath of eating a food are the expectations which depend on the experience with that food in many contexts. These expectations can have real influence on both behavior and physiology. At least emotional reactions to food may be easily affected by expectations. It is well demonstrated in Macht et al. (2003) research that women were asked to rate many emotions instantly after eating 5g of nine different foods, three are low in energy, three medium and three are high in energy in counterbalanced order. The intensity of negative moods such as sad, sleepy, anxious, ashamed increased with the rising en-

ergy density of the foods, and more so for the overweight than the normal weight women. Moreover, the foods were rated as less healthy and more dangerous are medium and high in energy than the ones that are low in energy. The negative effects of the high energy foods apparently bring out the concerns about their impact on health and weigh gain. The women eat in response to emotional state have reporting tendencies of stronger increases in negative mood. This would mean that any reinforcing effects must happen during eating such food not after eating, before the emotional state - this method would not discovered a beneficial effect of a real meal.

Another research conducted by Macdiarmid & Hetherington (1995) found that the self-recognized chocolate addict felt more guilty after eating chocolate than a control group did. The chocolate addict reported that emotionally lower positive and higher negative affect before eating. But Macht et al., (2002) found the contrast in healthy men experimental induction of sadness decreased appetite, whereas the chocolate tasted more pleasant and stimulating, and more of it was eaten in joyful situation. This gender difference is possibly to be confused by dispositional differences.

However, there are proofs that sweet, and may be fatty tastes or sensations can influence the mood, at least to some individuals some of the time and might be the decisive factor of feeling influences on food choice. Theoretically, adults choose sweet, fatty, satisfactory foods when they are stress since opioid is the neural substrate associated with stress released. Moreover, the endogenous opioid release increased by stress, also explains for the adults choices of foods. (Gibson, 2006 117-118)

4.3. Naturalistic studies of stress and food choice

The stress-related diversities context in diet can be analyzed in the naturally existing stressful situations. There is a suggestion proposed by Robbins & Fray (1980) that eating might be suppressed by physical, chronic and unmanageable stressors while short provoking and, or psychological stressors might cause overeating. Moreover, in daily life stressful situations, there will be often other results of stress that beyond the emotional and physiological state and may not be under control of the stressed person. For example, the time pressure and demands on attention can decrease the range of food availability to a person, although they would prefer to eat something else. Factors like these can also influence the choice in favor of foods that can be quickly bought and consumed. (Gibson, 2006 120)

There are proofs that stress or negative impact can lead to the growth of unhealthy food choices, if not an escalation in the long-term consumption from many early realistic researches. There is difference in the survey results of stress effect or negative affect on eating

behavior in non-clinical populations. There is also a bidirectional effect across the cases but similarity within individuals revealed from the survey of self reported changes in eating behavior. In many researches conducted by Willenbring et al., (1986), Stone & Brownell (1994), Weinstein et al., (1997), Oliver & Wardle (1999), the results are 38-72% of populations reported eating less when stressed, when in fact 28-50% reported eating more, and a small number in each survey believing stress did not change their food consumption. Moreover, Oliver and Wardle (1999) also investigated about the changes in consumption of a number of specific food or food groups during stress. All groups were reported that had eaten more sweet and chocolate under stress. On the contrary, in all groups, the amount of fruit and vegetables, meat and fish consumption were reported as less or unchanged under stress. The conversions for the predominant food and bread matched the overall group self-perceptions of changes in eating responding to stress. The data indicate that the mechanisms driving effects of stress on food choice may be to some extent separate from those affecting over appetite under stress, and foods like sweet and chocolate can be effective for relieving stress. (Gibson, 2006 123)

Furthermore, from the findings on nutrients, people might learn that specific changes in the mood might occur due to the consumption of certain foods or meals and proportions of macronutrients. It can be advantageous or dangerous but people might basically learn to eat a protein-rich meal when they want to be aroused, or a low-protein but carbohydrate-rich meal when they want to be calmed. (Gibson & Green, 2002)

5. Food neophobia

Food neophobia is a characteristic of omnivore species included human. It is the hesitation of such species to consume new foods. Omnivorous species exposed to the kind of environment where many food sources may be toxic. New foods are being cautiously approached and avoided, as familiar foods are always preferred whenever possible. Food neophobia is a conservative force which existing to keep the omnivore eating behavior on a safe track by restricting taste preferences from off the track of foods known to be nontoxic. (Schulze & Watson, 1995 230)

5.1. Rejection of foods

Early researchers as Rozin & Fallon (1980, 1983) found 3 reasons for food rejection: dislike of the foods sensory characteristics such as taste or smell; a fear of danger or bad consequences after eating that food; the idea of the food's nature or origin causes disgust.

As in Pliner et al. (1993) study about the dislike case, found that the participants expected the new foods to be less appetizing than familiar ones, and assumed about their palatability which can help to predict the willingness to taste them. As in Kalat & Rozin (1973) research of the danger case, found that the motivation for rejecting new food because of danger is associated with safety learning which is one of the typical notions in the theory on food choice in animals. According to this idea, the animal will realize that the new food is safe and consume satisfying amount of it, only after some times introduced to a new food and no harmful consequences after eating it. Pliner et al. (1993) also found that the participants rated the strange foods which are introduced to them in the laboratory as a little more dangerous, in comparison with the familiar foods and these ratings of dangerousness predicted willingness to taste them. According to Rozin et al. (1993), disgust helps people to resist the tendencies to approach unfamiliar foods, after discovering a negative interaction between the Disgust Scale (Haidt et al., 1994) and the Sensation Seeking Scale (Zuckerman, 1979), which evaluates the preference for new and exciting motivations. Later on, Pliner (unpublished data) also found a strong positive interaction between the scores on Food Neophobia Scale which is a measure of the food neophobia characteristic and the Disgust Scale.

5.2. Indirect information about taste and beneficial consequences

On one hand, Rozin (1988) argued it is usually expected that the good tasty foods are accepted which are opposite to the bases for rejection such as dislike and danger. It is expected that situational factor like good taste or beneficial results might decrease food neophobia. In several studies, the information to promote good taste and beneficial results is intentionally presented to participants and discovering that these information does increase willingness to taste novel foods. As in Pelchat & Pliner study (1995), the students faced a new food with a sign saying ‘9 out of 10 students said “taste great!” in the cafeteria line. The following students were more likely to taste a portion of the food than were appropriate controls. The proof about the efficiency that leading to the good consequence expectation, as a way for getting rid of new food rejection is complicated. Moreover, Pelchat and Pliner included a situation that there is a sign saying “a good source of iron” with the new food and the result was no increase in the number of students accepting the food. The conclusion drew from two studies that the beneficial results information decrease the tendency of trying new foods.

On the other hand, Mc Farlane & Pliner (1997) found that providing the information about the healthful consequences of a food possibly rise the willingness to consume a new food for the people find this information is important and relevant or in a situation where the food is believed to be readily available. Martins et al. (1997) proposed that for some foods, providing information appears to be effective while it is futile for reducing the rejections caused by

strong emotional reaction like disgust. Further finding showed that taste information or healthful result information will not rise the participants' willingness to taste new foods.

5.3. Direct information about taste and beneficial consequences

The other way to provide information about the new food is depending on people's own experience. The research conducted by Birch and her colleagues (1982; Birch et al., 1987) was that different amount of new cheeses and fruits were exposed to young children and were asked to choose the one they wanted to eat more or like the most. The amount of exposures can positively effect on choice and liking. The term of safety learning explained the results of the case in which the children who regularly encounter the unfamiliar food, will learn that the food is safe and does not produce bad gastrointestinal results. Other researches with both infant and adult participants produced the same results.

5.4. Generalization of direct information:

People also expect that unfamiliar foods will not be delicious. People might learn to realize that their negative expectations are unjustified through exposing to delicious new foods might. As a result, the positive experiences with the new foods might generalize to other new foods and neophobia might be decreased in a more general and sustained manner.

For the justification, the result of the research conducted by Sullivan and Birch (1990) was different from the one conducted by Pliner (1993). As Sullivan and Birch found that exposure influenced children first choices only for specific food items exposed. A set of good taste new foods or a similar set of familiar foods exposed to the adults to taste, and then from a set of different foods included both new and familiar food they choose which one they would taste later. As a result, the participants who pre-exposed to good taste new foods chose new items more than the familiar good taste ones. In the following research in 1997, children from 7-9 years old and 10-12 years old exposed to taste good taste familiar foods, good tasting new foods, or bad taste new foods. When older children exposed to the new good foods, the exposure will increase their willingness to taste different set of new foods in comparison with the familiar good food situation, even though there is no bad influence from the exposure to the new bad foods. Younger children's willingness to taste new foods will be decreased when they are exposed to both new good and new bad foods. Therefore, it is appeared that generalizing the willingness to taste other new foods achieved by creating the positive experience with the new tastes

5.5. Type of food

It is convinced from many researches conducted by Pliner and Pelchat (1991), Martins et al. (1997), Fallon and Rozin (1983) that most of the participants reject new foods of animal origin than non animal origin foods because of disgust.

Furthermore, the researches on neophobia also have been focused on ethnic foods which means new to one culture but familiar to others. According Tuorila (2001), there are four kinds of new foods: functional foods, genetically modified products, nutritionally modified foods and organic foods. The fundamental rejection of other kinds of new foods might be different from those related to the unwillingness to eat ethnic foods. There is proof that the scores on the Food Neophobia Scale relate to the willingness to try new ethnic foods. Tuorila and her colleagues (2001) found that the relationship between willingness to try the functional foods and the scale is small. Hursti and Magnusson (2002) found the the unrelation between scores and the attitudes toward organic and genetically modified foods. Backstrom et al. (2003) found that the participants in the research were unwilling to eat all kinds of new foods, but organic and ethnic foods were reported in positive terms while genetically modified products and nutritionally modified foods were described with negative adjectives and metaphors.

5.6. Other perspectives correlate to food neophobia

Moreover, the studies on the connection between the Sensation Seeking Scale which is a measure of general willingness/unwillingness to welcome new, exciting, and/or complicated motivations and food neophobia, showed the subscales negative relationship to trait food neophobia measures, to food attitudes and to behavioral measures of neophobia. It is also believed that food neophobia is related to a more general hesitation to welcome new motivation, such as new people, places and activities.

In order to measure the individual differences in food neophobia, valid items as “I don’t trust new food” included in the Food Neophobia Scale (FNS) which is a ten-item questionnaire, developed by Pliner and Hobden (1992). Another method to measure individual differences in food neophobia is the Food Attitude Scale (FAS-R) developed by Frank and his colleagues Frank and van der Klaauw, (1994); Raudenbush et al., (1998). In which the participants’ enthusiasm to try new foods that they have never tried before rated on a presented list. These researchers applied these measures into many previous researches and found that gender differences lead to variables of taste preferences and food oppositions. By using FAS, Frank and van der Klaauw (1994) reported that the “won’t try” responses from women are more than men; plus, Alley and Burroughs (1991) discovered that men more possibly to find unusual and new food than women. However, in 1997 and then 2001, Hursti and Sjoden then Tuorila found that the FNS scores of men were higher than women in Scandinavian regions.

It is difficult to simply describe food neophobia based on the date of age differences. Since different age range will have different willingness to try new ethnic foods. different age ranges and age categories were used in various studies, different measures of neophobia, and different methods of investigating for the differences. The results showed that neophobia decreases with age as younger children accept fewer new foods than older ones in Pliner and Loewen researches (1997, 2002); less new foods are accepted by the junior high school students than the senior high school students (Pelchat and Pliner, 1995); older adults accept more new foods than the younger adults accept (Otis, 1984; McFarlane and Pliner, 1997; Pelchat, 2000).

In brief, for human, food neophobia has been adaptable but cultural protective function has been taken over. In rare situations, culture keeps people from possibilities facing with dangerous foods by eliminating them from the environment and/or by branding them as unsafe. If food neophobia is not related to nutritional risk cases, situational manipulations might serve as interventions such as exposure to new foods, display of new foods in familiar environments and setting, etc. might result a general decrease in neophobic behaviors.

6. Adolescents, young adults and Food Choice

According to Spear & Kulbok (2001); Byrnes (2003), adolescents (age 11 to 21 years old) identified by major hormonal, physical and cognitive processes changes. Their food choice impacted by multiple separate, social, physical, environmental and macrosystem factors. Many researches found that the strong relation of what young people think they eat in comparison with what they actually eat (Lechner et al., 1998; de Bourdeaudhuij and van Oost, 2000) are the determinants known as subjective norms, attitudes, and self-effectiveness. When entering the adulthood, eating habits from childhood and adolescent are likely to be carried into adulthood and are hard to change (Coulson et al., 1998; Hill et al., 1998). In 2004, Vereecken confirmed to the World Health Organization recognition that the healthy dietary habits developed early in life by young people, are more likely to be kept in the adulthood and they will have less risk of cancer, chronic diseases, mellitus and osteoporosis, and non-insulin dependent diabetes (p.110).

In order to understand the adolescents' food choice, many researchers endorsed a framework which integrated with theoretical model of factors that influence the eating behavior. There are four general levels of influence:

- Individual and intrapersonal influences including life style factors (e.g. perceived barriers such as cost, time demands, convenience), biological factors (e.g. hunger), behavioral influences (e.g. meal and snack patterns and weight-control behaviors), and

psychological influences (e.g. attitudes, beliefs, knowledge, self-efficacy, taste and food preferences).

- Social environmental or intrapersonal influences from family, friends and peers, which may impact on food choice and dietary behaviors through social support and perceived norms, modelling, reinforcement.
- Physical environmental influences, which determine accessibility and availability of foods such as the range of school meals or the adolescents' food choices can be impacted by the location of fast food outlets.
- Macrosystem or societal influences, which included social and cultural norms of eating, food production, mass media and advertising and distribution systems, and policies and laws that regulate food related issues such as pricing, play a more distal and indirect role in determining eating behaviors. (Trew et al. 2006, 249)

Through many societal researches and surveys, it is found that adolescents have good knowledge about healthy eating practices. The best example demonstrated in the 2003 British Nutrition Foundation survey, 52% of 11- to 13 years old and 55% of 13- to 16 years old account for a huge number of young population like fruit and vegetables and like to eat them often. 11-13 years old, 97% of girls and 84% of boys knew that they should eat more fruit and vegetables, while 97% of girls and 93% of boys in the 13-16 years old were aware of them, this accounts for the fruit and vegetables consumption could be higher but both age groups showed a high awareness that they should be eating at least five portions of fruit and vegetables a day.

In changing food related behaviors, research showed that the beliefs about food and weight are proven to be more important than knowledge. This issue is justified by Nowak and Buettner in 2003 that the food beliefs and concerns of Australian adolescent was responsible for their food intake than their knowledge of nutritious food. In 1986, Story and Resnick found similar result from their study that taste and convenience are the reasons adolescents consumed fatty, sugary or salty foods, although health consequences of eating these foods are well aware.

One of the strongest factors of young people's food choices found to be self-reported food preference or liking. As early childhood experiences with food positive and negative conditioning, food exposure, and genetic predispositions such as sensitivity to sour tastes result food preferences (Birch, 1999). The motivational factor that has the greatest influence on food preference is taste. For instance, in Neumark et al., (1999) research, the result showed from the focus groups of young American that their food option affected by the taste and the appearance of food as the main factors. They also said that a healthy diet was difficult to following since the taste was very important to them, the taste of

“junk” food is better than healthy foods such as vegetables. In turn, not only taste, hunger and price reported to be the most important factors in young people’s food selection. (French et al., 1999).

However, health and nutrition ranked as less important influences to adolescents (Story et al., 2002). In a comparison research between students motivated by health concerns and those motivated by other factors such as hunger, Neumark-Sztainer et al (1999) showed that the health concern students ate less fat and had higher nutrient intake than their peers. As in 1997, Neumark-Sztainer found that young people who engaged in risky activities, smoking and troublesome school behaviors were more possibly to have unhealthy eating habits than those who are interested in health promoting behaviors such as brushing tooth, exercise and the use of seat belt. Generally, young people care more about school, family and friends but than their healthy eating habits. Neumark-Sztainer (1999); Story and Resnick (1986), suggested that adolescents do not have the urgency in reacting to health related eating consequences.

Furthermore, there are not many evidence of the relations between personality factors and eating behavior, but there is the existence of individual differences in food neophobia found in research. As in a study of young Scottish conducted by MacNicol et al. (2003), found that it is common among girls that they have the tendency to form picky attitudes and high food neophobia than boys and related to the lack of nutritional knowledge, lower socioeconomic status, neuroticism, and the consumption of unhealthy foods.

Additionally, it is broadly reported that food choices vary regarding to gender differences. As in the 2004 Vereecken research showed that in nearly all of the thirty five countries and regions included in the World Healthy Organization survey of eating habits reported that fruit and vegetables were consumed every day by more girls than boys. However, due to the young girls’ concerns about body image (Wardle & Beales, 1986; Worsley & Skrzypiec, 1997), lead to the inappropriate dietary restrictions and poor nutritional choices. The term “dieting” is interpreted in different ways such as “eating less/cutting down” (Neumark-Sztainer & Story, 1998) or the most popular definition of dieting is “increased fruit/vegetables/salads” perceived by many girls (Roberts et al., 2001). Various survey regarded to this perception of food restrictions reported that food/vegetables consumption increased, but decreased in less nutritious foods consumption e.g. Nowak (1998); Vereecken & Maes (2000); Lattimore & Halford (2003). In 2004, Wardle et al. conducted a large-scale food choice examination in 23 countries and found that almost in all countries, female were more likely than male to be dieting and main-

tain healthy food choices. Fatty foods are avoided by more female than male, who also eat fruit and fiber and limit the salt intake.

Together with taste and ethics, health were convinced to be the justification for young people to adopt a vegetarian diet (Haste, 2004). More young girls than boys claimed to be vegetarian in the British Nutrition Foundation Survey conducted by Goldberg 2003. The traditional definition of vegetarian is red meat, fish, and/or white meat are excluded from an individual food selection. However, there are problems with adolescents' definition of vegetarianism. For example, Worsley & Skrzypiec (1997) found that teenage vegetarians eat chicken but not red meat. There are various reasons why adolescents adopt vegetarian diets. By using ethnographic method, in the interviews that 30 teenage girls in the age of 13 to 19 years old (15 vegetarians and 15 non-vegetarians), Keyon and Barker (1998) found that the main issue is the discomfort with the killing of animals and ethical concerns about the animals. What is more, in many studies conducted with British (Santos & Booth, 1996; Haste, 2004), Australian (Worsley & Skrzypiec, 1998) and Swedish (Larsson et al., 2003) adolescents, found that the reasons for not consuming animal products are dislike of meat and the bad effects of eating meat. The motives underlying the meat avoidance are complicated as Beardsworth and Bryman (2004) cited and suggested that there is an intertwine of gustatory, ethical, environmental, and health factors (p. 315). There is also personal reason for adopting a less meat diet such as the perception of meat as a fattening food. Some girls prefer a no meat diet because they concern about being slim and tend to limit their energy intake (Worsley & Skrzypiec, 1997).

7. Research method:

7.1. In-depth interview:

In an in-depth interview, many questions about all aspects of the service product were asked. It is proved that interview is the most effective method not only to find out the key attributes of the service that customers deem to be important and desirable, but also it provides the most relevant and current information from the service provider. Therefore, this method was used to obtain the data of Laurea lunch service provided by the kitchen manager Teemu Sirainen. (Jay 2002 p.105)

The case study is the lunch buffet service in Laurea University of Applied Science, Leppavaara campus, cost 2.60 euro per student at lunch time from 10.45 to 13.00. The service provides 3 choices for lunch buffet: meat, soup and vegetarian food with potato, brown rice, spaghetti, couscous or quinoa included fresh mix salad and many kind of breads and dairy products. The service is run by Teemu Sirainen restaurant manager and the foods are cooked by students

from restaurant study unit. The aim of the lunch buffet is to serve healthy and organic local Finnish foods to students and professors attending in the premises. There is no ready-made or artificial ingredients in the foods because the service is also a study ground for students from restaurant study unit. The service is following the food safety regulation and the Finnish food standard (e.g. the amount of salt and fat used or contain of gluten, lactose). The taste or the flavor of the food might be slightly reduced, since the service strictly follow the food standard. (Teemu 2016. Personal communication.)

Laurea's lunch buffet is trying to promote healthy choices for food and have a variable menu but the certainty is that different students have different preferences based on many factors. Usually, majority of students are pleased with the choices at the lunch buffet and minority choose the alternative. In this case, the alternative is the lunch service in Metropolia university across the street. The current lunch service in Metropolia is outsource by a facility and catering service company Sodexo. The students will experience the same service concept and the pay the same price for their lunch. Unlike the lunch buffet service in Laurea university which ran by Teemu the restaurant manager and the students from restaurant study unit, the lunch service provided by Sodexo's professional chef and paid employees. (Teemu 2016. Personal communication.)

From the Laurea's restaurant manager point of view, the lunch service in Metropolia is the competition. Although there is sometimes a group of students prefer the lunch in there, the restaurant manager would not concern about this because it is only occasional. He understands and respect that students have their own preferences for the food choice and he cannot influence on them. "The situation would be alarming, if it happened often, the entire service and the menu would be reconsidered carefully" he said. (Teemu 2016. Personal communication.)

In the case that students' alternative preferences are completely different from the lunch buffet in university, the option is the food stores in Sello shopping mall. The shopping mall location is a few hundred meters away from the universities, which means it would be time consuming for the students at the lunch time, if they decide to go there for a meal and then come back for classes later. Although the food selections there are various, they are costly and some choices are believed unhealthy. Since the choices in the university are always healthy local Finnish foods, and the concept is the lunch buffet at a certain time of the day, the students might find they are uninteresting after experiencing them for quite some times. The service embraces the fact about alternatives but still have options for the students to choose. (Teemu 2016. Personal communication.)

The manager is always trying and doing his best to listen to customers wishes and requires through feedback as a trust worthy communication channel. The restaurant manager stated that receiving the votes for the service is good, but the more valuable information laid in the customers' words. For example, no matter the customer's feedback about foods is either good or bad, the manager will always focus more on the details of the feedback. Then, he can carefully consider if the feedbacks are true or not and reach to the conclusion. By doing this, the manager can understand the students' thoughts, as well as the preference for the food choices which is the driven factor of their eating behavior. However, it is impossible to please all students with whatever they desire, so there will always a comprise between students and the service for the options. The service, in its capability, will not only try to provide the tasty choices to the students but also wants to encourage students open to try unfamiliar choices. (Teemu 2016. Personal communication.)

7.2. Customer survey:

In order to make statistically valid judgements about the customer base, since individual interviews might not provide a large enough data, so broad surveys are required. However, in-depth interview is relevant to surveys. The interview serve as a crucial role in determining the questions to be asked in surveys. In other words, the interview process involving a small number of people provides the basis of a research model for questionnaires aimed at a bigger population. (Jay, 2002, 106)

A survey consists of the targeted demographic group, and a topic which information is desired-opinions or preferences about the key attributes of the service being offered. This information can be processed statistically to develop a profile of the service preferences of the customers and their attitudes toward the organization and competing organizations. (Jay 2002, 106)

In service industries, customer-satisfaction surveys has become increasingly common (Pizam & Eliis, 1999). Such surveys usually ask customers to relate positive and negative features of the service experience, as well as suggestions for improving the services. It is believed that customers' feedbacks will be considered and acted upon by management. If the surveys are beneficial to management, customers and employees, careful planning and management of the questionnaire feedback system is vital. The questionnaire should have a define purpose, and the survey should deal with a limited number of issues at any one time. Moreover, a definite time period should be set for gathering information, and for subsequent action on any identified issue. (Jay 2002, 106)

Firstly, in order to have a general look at the students' eating behaviors, the quantitative research method as paper survey was used before designing a questionnaire survey. A group of ten student from different nationalities attending and experiencing the lunch service in Laurea were asked to provide their general thoughts, feelings and feedbacks for the service and the foods. (Paper survey. 2016. Personal communication)

According to the students, the reasons for eating at the service are: healthy foods, good and friendly service, clean place, comfortable atmosphere, reasonable price and when they have class at the campus. The reasons make them decide not to eat at the service or choose the alternative are: the food choices on the menu, and the repetition of the ingredients. Some of the students dislike the taste of the food. They agreed that encountering the service with hunger and expectation but after the lunch, only some students finish the meal and feel satisfied while some leave food waste because of dislikes and feel slightly unhappy. (Paper survey. 2016. Personal communication)

Secondly, based from the paper survey, the students who attend in Laurea university will participate in an online questionnaire survey. The purpose of the online survey is to take a deeper look into the reasons behind the students' decisions and to collect their thoughts and feedbacks. The answers from the survey will be analyzed and then will be utilized into the improvement of the service.

7.3. Survey results:

The online survey were carefully made on <http://webropol.fi/> and was tested by the creator and 2 participants before the survey was officially published on the internet. Next, the online survey was first posted on many facebook groups of Laurea University of Applied Sciences on 29th of November, 2016. Then after 3 days, the survey was brought to the University in the Ipad by the creator. Random students were invited to participate in the survey and one will win a pair of movie tickets as random choice, after the survey reached the deadline on 19th of December, 2016. The result is 107 participants from the age of 18 to 43, the number of questions is 15, and the 16th question is participants' contact detail for the reward.

The result of the survey started with the pie chart of 20 nationalities:

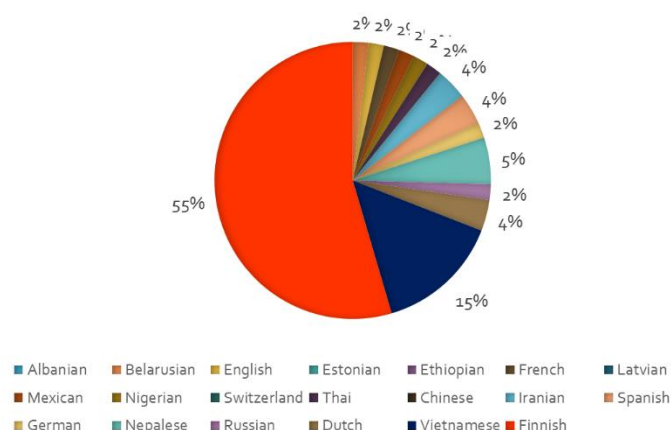


Figure 4: Respondents' nationality

The pie chart shows the diversity of nationalities of the respondents. 55% of the respondents is Finnish. Following up is 15% of Vietnamese. The rest of other nationalities is 30%. The diversity in culture, in personal background, and in food preferences is obvious. The age of most respondents are from 19 to 27 and a small number of them are from 30 to 43. The young adult respondents are believed to experience the transition phase in their lives, not only the mental and physical transition from teenager to young adult, but also environmental transition from high school to university. Moreover, since there are foreign students attending in the university with the local, so they are experiencing the national transition. Generally, these are the transitions which occurring in the students life time within the macro context such as new culture, new society and new economy, the micro contexts such as new university, new friends and family. All together will affect the individual food choice processes no matter the students are local or foreign. In the following result, the factors affect the food choices are displayed in the charts.

However, there are common preferences in the diversity and the different food preferences related to gender as the students were told to select their food preferences minimum is 3 choices.

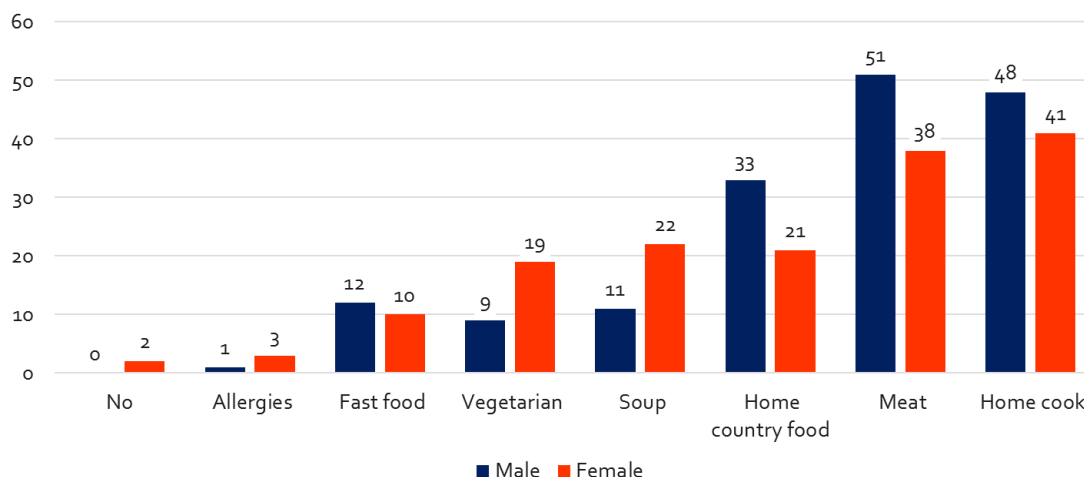


Figure 5: Food choice preferences between genders

All respondents were asked to choose 3 preferences for food choice. As can be seen from the chart, the most preferred foods were home cook and meat choices (89 students out of 107). As significant as other preferences, home cook represents the foods and the opportunity to cook and eat at home. In this preference, the choices for food might include home country, soup and vegetarian. The purpose is to show that cooking and consuming foods at home also preferred as a choice. There was a big drop in the number of students chose ethnic food, soup, vegetarian, fast foods. They were also asked about special allergies (3 allergies of milk, broccoli and gluten) and whether they have food preferences (2 females). In detail, more male (51, 48, 33, 12) than female (38, 41, 21, 10) prefer meat and home cook food, ethnic food and fast food, but the contrast result showed at vegetarian food and soup as more female (19, 22) prefer these food choices than male (9, 11).

The next yes-or-no question was about the participants have ever experienced the services at Laurea lunch buffet where all the food choices are made. The results was 19 out of 107 students have never been experienced in the Laurea lunch buffet service and the rest was 88 students. the survey questions were divided into two directions:

For those answered no: "I have never experienced the service", they were asked to choose three prioritizing reasons for such decision:

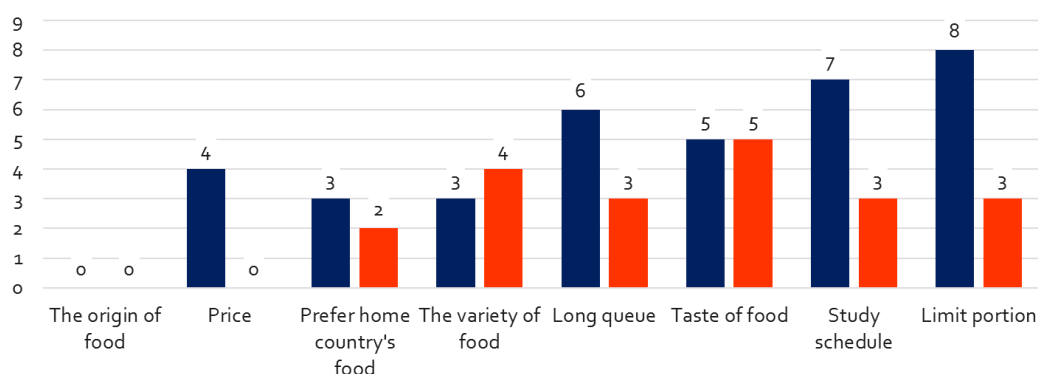


Figure 6: Three prioritizing reasons of not going to have lunch at Laurea between genders

From the first general look at the chart, it is seen that limit portion (11), study schedule (10), taste of food (10) and long queue (9) are the most noticeable reasons. The most striking differences can be seen from the chart are the number of male chose the limit portion of food (8), the study schedule (7) and the long queue (6) for their decision, while the same number of female (3) also chose these reasons. Another striking point is the result of taste of food where both (5) males and females chose it as one of their prioritizing reasons. The last striking point is the variety of food, which (4) females and (3) males chose it.

If the Laurea lunch buffet service is not the choice for these participants, then their alternative choices are:

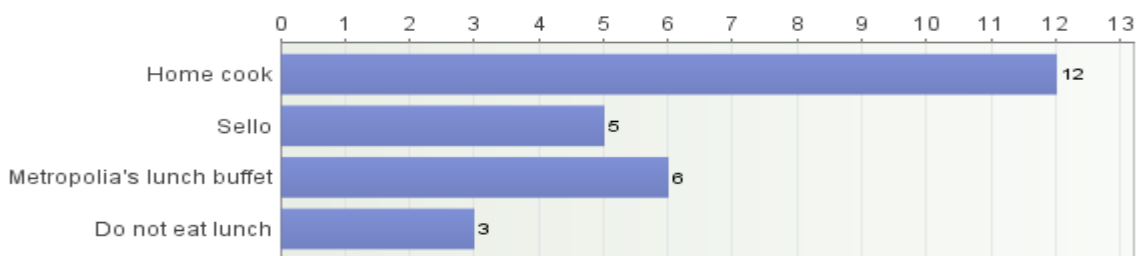


Figure 7: The other choices

12 participants chose the foods cooked at home, while 6 chose Metropolia lunch buffet and 5 would go to Sello shopping mall.

In order to know if these respondents have any thoughts about the service, even though they have never been experienced the service, they were asked to rank the service in their personal belief from agree to disagree (from the scale of 1.0 to 5.0)



From 19 students

Figure 8: The rank of the service was given by the survey participants who have never been experienced the service.

The chart shows the positive results about all the aspects of the service, which means the participants are quite aware of the factors that might have an effect on their food choices. While there was no total disagreement to the any aspects of the service, the participants' opinions are from agree to somewhat agree and then to neutral. In particular, the average point of variety of food is 2.7, then following up with the impressions of good food (2.4), comfortable atmosphere (2.2), nice service (2.1), and cheap price (2.0).

In the opposite direction of the survey with 88 participants answered yes, it started with the regularity of the participants visiting to the service in a month:

Never again	rarely	often	sometimes	Always
7%	10%	27%	38%	18%

Table 2: The regularity of the participants visiting the service.

From never again to always have lunch at the service, the first outstanding figure is sometimes (38%), then often (27%), always (18%), rarely (10%), and even never again with (7%). The regularity depends on a personal view of each respondents, so there would be no absolute opinion of regularity. In fact, the regularity might be influenced by the reasons of the respondents visiting the service.

Similar to the 19 participants that have never been experienced the service, these 88 participants were asked to chose three prioritizing reasons:

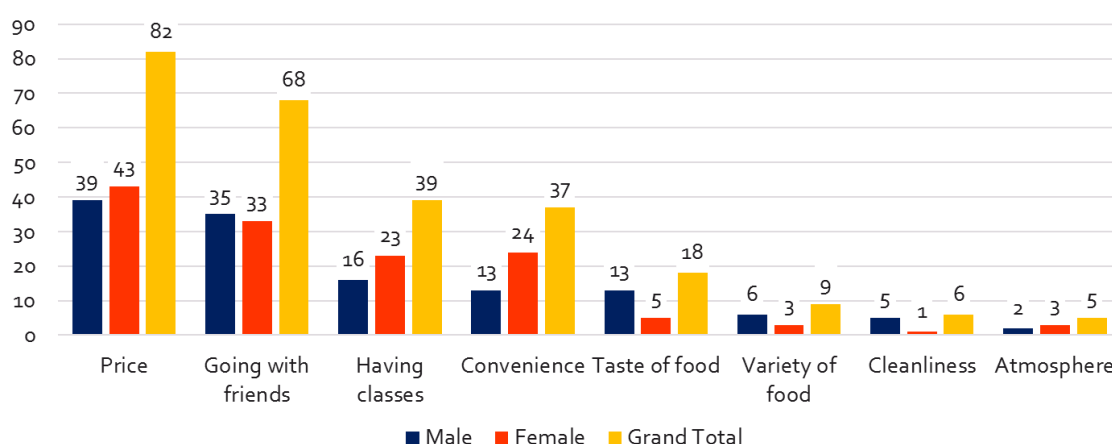


Figure 9: Three prioritizing reasons to have lunch at Laurea among genders.

It is clearly seen that the first four reasons are the dominants. Specifically, the highest number of students have lunch at Laurea because of the price is 82 total in which 43 females chose it as one of their priorities more than 39 males. In comparison with price, the number of going with friends is lower (68), with relatively equal number of male and female (35 and 33). Following up is having classes (39) with 23 females and 16 males. Then 2 respondents less than having classes is convenience with 24 females and 13 males. The numbers are drastically dropping lower to 18, 9, 6 and 5 respondents for the reasons such as taste of food, variety of food, cleanliness and atmosphere as their prioritizing reasons to have lunch at the lunch buffet.

Since the respondents have at least three reasons to have lunch at the service, they will have to encounter the first service point which is the menu, in order to actually see the choices for food of each day. Therefore, the respondents were asked to rank the menu because the receiving information plays an important part in the decision making process.

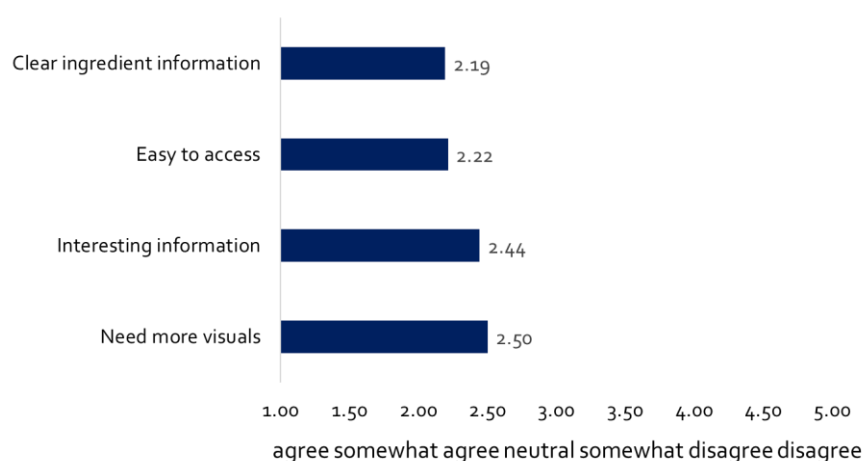


Figure 10: Rank of all the features related to the menu.

The numbers on the chart show positive results about the menu. But first, 88 respondents agreed that there should be more visuals on the menu with the score of 2.50. Then the scores stay on the positive side of the chart such as 2.44 for interesting information, 2.22 for easy access to the menu and 2.19 for the clear ingredient information. There was no total disagreement to any aspects of the menu.

In addition to the decisive factors of a food choice process, customers' emotions and feelings before and after the lunch time were also taken into consideration. The customers were asked to chose three emotions and feelings:

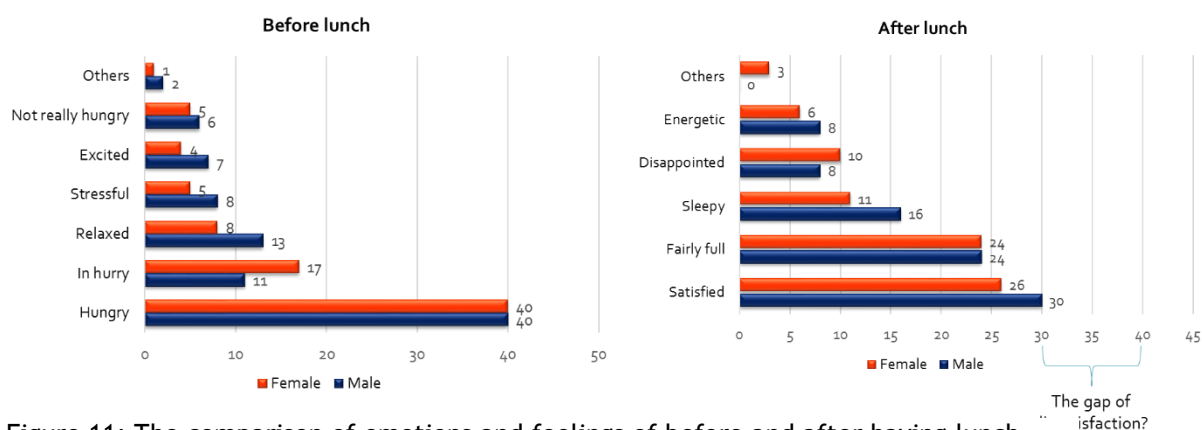


Figure 11: The comparison of emotions and feelings of before and after having lunch

On the before lunch feelings chart, the first obvious feature of the customers' feelings is hungry (80), in which equal number of female and male (40). The feelings are both physiological and psychological related. They are the most common feelings and emotions for the lunch time in the food service environment, and they are strongly connected to each other. For example, hunger is not a psychological feeling, it is known as a physiological state of the body in need of food but a person can feel it. Therefore, the matching feeling with hungry, after a person had eaten the food and experienced the service is the satisfied feeling. Although hunger is not a psychological feeling but it can lead to emotional state such as anger or annoyed. Similarly, if an individual feels bored, anxious, lonely, stressed or in the situation where the person is surrounded by food, the person will feel hungry which is known as the phantom hunger.

The numbers of other feelings significantly fall down to 28 of feeling rush, 21 of feeling relaxed, 13 of feeling stressful, 11 of both feeling excited and feeling not really hungry. There were 3 other feelings such as 2 customers just want to fill the stomach with food and 1 customer who feels frustrated for waiting in the long queue. Which can be understood that having lunch is a "should be done act" and the customers might even feel frustrated, if waiting for food is time consuming.

On the after lunch feelings chart, the highest number is 56 of satisfied feeling (30 males and 26 females). The numbers of customers gently fall to 48 customers feel fairly full (24 males and females), 27 of them feel sleepy (16 males and 11 females), 18 feel disappointed (10 females and 8 males), 14 feel energetic (8 males and 6 females). Unlike on the before having lunch chart, most customers were in hungry mood, the feelings and moods varied on the after having lunch chart. Which means there is a gap in the number of customers' demand and satisfaction.

After the customers experienced the lunch service, they were asked to rank it:

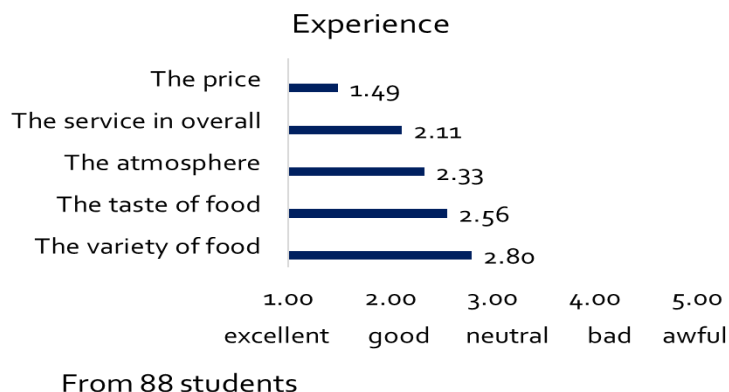


Figure 12: Service ranked by 88 students.

The results on the chart indicate the average number of students who rank each features of the service. The numbers are reflecting a good lunch buffet service at Laurea UAS. From the scale of 1 to 5, the average score of the price is 1.49 which means that most the students voted the price is excellent and good. Under the price, all other aspects of Laurea lunch buffet also earned positive scores as following orders the service 2.11, the atmosphere 2.33, the taste of food 2.56, and the variety of food 2.80.

Finally, all participants were asked to choose the recommendations in order to improve the service. By doing this, the participants will have chance to involve in the service development. The recommendations represent the customers' wants at the service, which are within the service's capability.

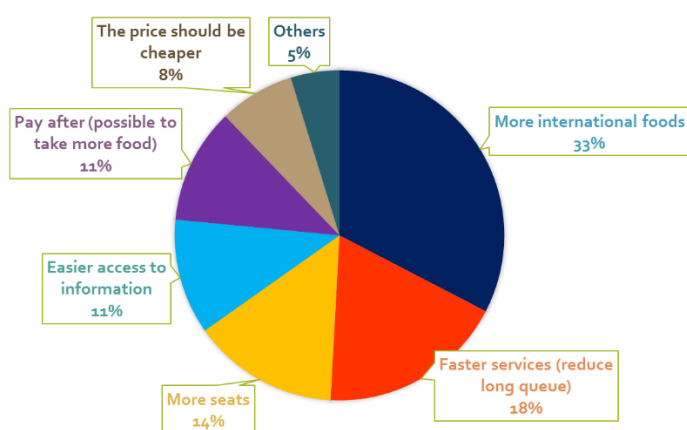


Figure 13: The pie chart of customers' recommendations.

The chart consists of 6 recommendations and 1 open text area where the customers can write their wants down. The dominated part on the chart is 33% of more international foods. The

percentages for other parts on the chart drop to 18% of faster service to reduce long queue, then lower to 14% of more seats, both 11% of easier access to information and pay after the foods are taken, 8% of the price should be cheaper and 5% of others.

Open text answers: Others

- Consider more about portions so that customers have enough food to eat
- More appetizers
- Real meat, I want real meat
- More vegan options, please! Sometimes I don't have anything to eat there!
- Better recipe, its cooking, not math.
- Variety for food
- Better food
- Vegan options
- Have option of only salad
- More choices in salads and also more variety in salads.
- More choices of drinks included in lunch (like tea, coffee etc.)

8. Recommendations:

Based on the survey result, it is showed that the majority of the students go to the Laurea lunch service, are hungry and seeking for a meal. However, the final decision of where to have lunch and which food they will have, will be only made after the students read the menu, even though they have all the prioritizing reasons to have lunch at Laurea. As the first encounter point, the menu should provide options of the day, ingredient information, nutrition information, etc. If the students find the choices of the day and those information on the menu are tempting, they will go to the service.

Which means the menu is a powerful marketing tool, because most of the customers' food choices and decisions rely on the information they receive on the menu. If the service providers can wisely create an attractive and clear menu filled with enough information, it will ef-



Pictures 1: The current menu on the information desk

fectively help the service to make more profit.

There is no ingredient information, no pictures and no nutritional values on the current menus. The healthy ingredients, the healthy food and the cuisine concept are not promoted on the menu (e.g. briefly about the health benefit of the ingredients, the trendy food, the values of Finnish cuisine). The design of the menu is effortless. The menu and other information



Pictures 2,3: Information boards and menus at the lunch buffet entrance boards at the lunch buffet are not well organized.

Putting efforts into creating a successful menu boards which is well organized and carefully designed for more necessary information, might draw a greater attention to the service. The information should be displayed on the menu boards are: menu of the week, ingredients of the dishes, the cooking styles of the foods, the concept of the service, healthy and local Finnish food promotion. The design of the board should allow the service provider to actively and easily update the information daily and even to display pictures of the food. These information and visuals will help the customers to visualize the choices and to easily make the decision without doubts. Moreover, since the foods are cooked and served by students from restaurant and hospitality study unit who are fulfilling their internships, so letting other students know about the kitchen personnel on the menu board might bring a feeling of sympathy. For example, the information can be briefly stated as a service slogan “Cooked and served by students”, which might lead to lower expectations and more willing to give constructive feedbacks.

When a big number of students like to come to the service because it is very convenience for them from many aspects, according to them, the convenient service concept as the students just need to come to service, make a payment, take the food, find a seat and enjoy the lunch then bring the dishes to the dish washing staff and leave; plus, the location is convenience as well since the service located right in the university premises.

It is wise to considerate that the service can be more convenience, if the students can pay online. A users-friendly webpage where the students can see the options of the day or of the week with the convenience online payment method might be a great development idea. In order to reduce the long queue of buying and paying for the lunch at the main entrance or at the café Beat, students can access to the university's lunch service webpage or to a mobile phone application designed to check the menu, to read the information about the cafeteria, to make a reservation in the Flow restaurant and most importantly to pay for the lunch buffet daily or even monthly. If the payment is made online or by phone, a message will be sent to the students' personal phone, which included the receipt and the bar code. Once the students receive the message, they can just show to the bar code at the cashier where already equipped the bar code reader to approve the payment. Then the students can walk in and take the food.

Additionally, the extra portion information should be clearly provided to the student on the webpage, so they can flexibly choose the portions. Since sometimes the student like to have bigger portion of their favorite foods. Having the comfort foods with a desire portion will be a joyful meal, which might lead to the result that the students might gain more energy and satisfaction from the lunch time, so that they can be productive in the upcoming classes.

Moreover, if a large amount of students go to the lunch at the same time, usually the long line is formed at the main entrance because this is where the students pay for the lunch, then get the foods by themselves right after they stepped inside of the buffet area. The service encounter points are logically arranged but the students are moving slowly, when they are serving themselves. This is causing a long waiting line. Therefore, there should be at least two service staffs assigned to stand at two different meat trays and one at the vegetarian and soup tray to serve the right portion to the customers. There is no need for more service staffs to stand at the carbs tray, or the salad, or the bread table because these can be self-served. By doing this, the waiting time in the line would be shorten. Furthermore, when hunger combined with frustration, customers start to act carelessly which will lead to many negative outcomes such as taking more portion than they can consume, or taking more comfort foods instead of a balanced meal. Generally, serving staffs might help to speed up the service and help the students to take a balanced meal.

On the customers side, there is the opinion about the limit of the portion that sometimes leaves them just fairly full. On the service provider side, if there is no portion limitation, the amount of potential food waste might increase. It might be hard to control the food waste and the leftover, if the service provider has no exact numbers of the customers coming to the service on a day, so the reckless increase in the production and the portion might not be the answer. Instead, the shape and size of each standard portion may be the answer for this issue. The shape and size of the portion should be paid attention or even adjusted. By doing this, the customers might feel that the food is served with a worthy and satisfying portion.

The international customer base leads to international food choices as 33% of the participants recommended. The possibility to execute this recommendation within the service capacity is quite high but the difficulty is also coexistent. The foods can be not only Asian foods but can also be the food from other countries such as America, Mexico or Spanish and so on. The chef should discuss with the kitchen staff and find out the recipes that are not so difficult or not consuming a great deal of time to make and plan ahead on the menu. Having the international food choices on the menu will of course bring new tastes, new choices and excitement to the menu and the staff will might learn to cook new foreign dishes. However, there is a potential difficulty in serving foreign foods. Due to the fact that they are not cooked and served by professional chefs for a large number of customers, so leaving the foreign foods to the young experienced student cooks could be a risky decision.

Moreover, in order to please the regular customers, having some signature dishes and perfectly serve them might be a good option as well. By doing this, the customers will gain trust and be loyal to the service. Then when the opportunity comes, the service provider can introduce new products to the customers, even though the customers might not completely welcome the new products but they will still come back for the trust worthy old choices.

Lunch time should be an enjoyable and relaxing time instead of a chore, so at this particular time of the day, the students usually go to have lunch in a group of friends, but from the restaurant manager opinion, when 400-500 customers come to the service at the same time, there will not be enough chairs and space for the customers. Therefore, having bigger room is the next step. The additional opinion from the restaurant manager is that the lunch time should be rescheduled. The possibility might be the schedule for going to lunch can be flexibly agreed by teachers and students, so that the customers come to the service in smaller groups, for instance, students from BIT study program can go to lunch first, then after 30 minutes, students from Business Management can go to the lunch and so on. However, it is noted that rescheduling lunch time for the students is not BarLaurea responsibility.

9. Conclusion:

This thesis was written to theoretically study the psychological factors that influence the students' food choices, and then to examine the reflection of the theory in the Laurea University of Applied Sciences lunch service as a case study. The aim is to fully understand these factors and then utilize the knowledge in generating new developing ideas for the Laurea lunch buffet.

The students who are attending at the University, participated in an online survey. The survey reached the goal of 107 responses. Plus, there was also an in-depth interview with the kitchen manager to obtain the most specific insight information about the service. After the information and the survey results went through a careful analysis, there were some issues related to the service revealed but generally, the service received good feedbacks.

Despite the taste of the food and the variety of the food received low votes, the values that the customers based on, when making their decision to have lunch at the Laurea lunch service are the cost, friendship, study schedule and convenience.

The development ideas concentrated on many issues. Developing the menu and the information boards both online and in physical is crucial, because this is the first service encounter point. The decision are usually made after the customers read the menu, so the information provided to the customers at this point should be clear and even better if pictures are also displayed. Developing an innovative online payment method and a food choice webpage will make the service more convenient in many ways such as reducing long line, easy payment and choosing extra portion as the customers' wish. Having staffs stand at the food trays to serve the customers with right the portions at rush hours to reduce long line. The adjustment of the shape and size of the standard portion should be considered instead of increasing the portion. Having more international food on the menu and also having more seats at the service.

It might be beneficial for the service provider to understand the what factors that influence customers' food choice, how these factors influence the choices and why the customers rely on these factors when making decisions. Then, the service providers see the big picture or even in detail, they can effectively generate ideas for the service.

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Appendix 1: Interview questions with university's kitchen manager Teemu:

1. What is the meaning of the lunch buffet price?
2. What are the food choices and the concept at the lunch buffet?
3. What is the situation that the service facing?
4. What could be the alternative or the competition?
5. How can the service deal with students' desire for food?
6. How can the service communicate with students?

Appendix 2: Laurea's lunch buffet survey

<https://report.webpolsurveys.com/reports/Report.do?key=f9a0d6e5-8a65-4870-ae63-e9fc3fcb1ac4>



Laurea lunch buffet_ TO EAT OR NOT TO EAT

My name is Minh Trinh third year student in Facility Management of Laurea UAS. The purpose of this survey is to serve my thesis. Let's share some thoughts and feedbacks to improve the Laurea's lunch service. NOTE: A random respondent will be chosen for a pair of movie ticket after finishing the survey.

1. Gender *

- Male
 Female

2. Nationality *

3. Age *

4. What are your food preferences? (min 3 choices) *

- Meat choice
 Vegetarian
 Soup
 Home cook
 Home country's food

- Fast food
- No preferences
- Special allergies?
-
-

5. Have you ever experienced the services at Laurea lunch buffet? *

- Yes
- No

6. Choose three prioritizing reasons that make you NOT to eat in Laurea lunch buffet? *

- Prefer home country's food
- Taste of food
- The variety of food
- Price
- Limit portion
- Study schedule
- Long queue
- The origin of food
- Others
-
-

7. In your beliefs, what do you think about Laurea lunch buffet? *

	Agree	Somewhat agree	Neutral	Somewhat disagree	Disagree
The services seem nice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The foods seem good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price is cheap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The variety of food is high	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The atmosphere is comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. What are your other choices? *

- Home cook
- Sello
- Metropolia's lunch buffet
- Do not eat lunch

9. How often do you eat at Laurea lunch buffet in a month? *

1 2 3 4 5

Never ○ ○ ○ ○ ○ Always

10. Please choose your common feelings before lunch? (max 3 choices) *

- Hungry
- Stressful
- In hurry
- Excited
- Relaxed
- Not really hungry

Others

11. Choose three prioritizing reasons that make you eat in Laurea lunch buffet *

- Price
- Going with friends
- Convenience
- Having classes
- Taste of food
- Variety of food
- Atmosphere
- Cleanliness

12. In your opinion, what do you think about the information on the menu? *

	Agree	Somewhat agree	Neutral	Somewhat disagree	Disagree
Interesting information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clear ingredient information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Easy to access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Need more visuals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Please choose your common feelings after lunch? (max 3 choices) *

Disappointed

Fairly full

Satisfied

Energetic

Sleepy

Others

14. In your opinion, please rank Laurea lunch buffet services. *

	Excellent	Good	Neutral	Bad	Awful
The price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The taste of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The variety of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The atmosphere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The service in overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. What are your recommendations for Laurea lunch buffet? (more than 1 choice) *

The price should be cheaper

More international foods

Easier access to information

- More seats
- Faster services (reduce long queue)
- Pay after (possible to take more food)
- Others
- _____

16. Thank you for your participation. If You like to get a pair of Finnkino tickets, please fill your contact information below. Random respondent will be chosen. All of your contact information is confidential and not be used for any other purposes.

Name _____

Mobile _____

Email _____