

The Impact of Service Attributes on Consumer Adoption- the Case of Personalized Nutrition Service

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MCB-80433
MSc Thesis Marketing and Consumer Behaviour
January 2014



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ACKNOWLEDGEMENTS

It has been a solitude and distant road, but finally here I am at the end. There were always unexpected timely helps along the road. It would not have been possible to reach the destination- the completion of my master thesis without the helps and supports of the people around me.

First and foremost, I would like to express my sincere appreciation to my supervisors, Dr. Arnout R.H. Fischer and Aleksandra Berezowska, for your patience, kindness, encouragement, and knowledge, which were my key motivations along the journey. You have given me inputs to help me build the framework at the beginning of the research, “just perfect” guidance along the way, leading me on the right direction and inspiring me for critical thinking, and invaluable comments and advice on both personal and academic development. I cannot think of better supervisors to have that you always have time for me. It has been always a great and precious time having thesis meetings with you, which I will miss very much.

I could not forget all the emerging helps on the way, and I have been blessed with a cheerful group of friends: Jen Mong Yuan, for reviewing my thesis and presentation, and giving insightful comments with detailed explanations and discussions; Pi Hsien-Chueh, for always challenging me and bringing brilliant ideas for my work, and reminding me when I was lost; Jiang Yu and Yan Shiyu, for giving me constructive suggestions of my thesis even during our trip to Italy; Chen Hsuan, Christy Tang, Chen Wei-Shan, Liu Jui- Chieh, for sharing your lives with me, important friendship, support, and company on this adventure; Dear Pick it up group: Nina, Jelena, Katharina, Thanos for making my “Dutch Life” fantastic.

Last but not least, my greatest gratitude to my family: my grandmothers, my parents, and relatives, for both financially and mentally support, always being proud of me, and never letting me doubt myself no matter how difficult the situations I was in. I am beyond grateful to all of my participants of my research, who were generous with their time and valuable data and feedback.

ABSTRACT

Personalized nutrition service, which is a service that provides healthy eating advice tailored to suit an individual based on his/her own health status and lifestyle, is relatively new for consumers. The related knowledge and understanding remain fragmented. Consumer adoption consists of stages of consumer initial uptake, satisfaction and loyalty. The research objective is to study how service attributes, which are identified into three types of services attributes: search, experience, and credence attributes, influence consumer adoption of personalized nutrition service in order to have better adoption. This thesis develops a set of hypotheses on how service attributes influences consumer adoption. A systematically varied design is used in which consumer evaluate scenarios of basic personalized nutrition service in the future, and a 2 x 2 x 2 between-subjects and 3 stages of adoption within-subjects mixed full factorial design is used to compare the different emphasis of service attributes in consumer adoption process. The interaction effect of experience and credence attributes has a tendency to influence consumer initial uptake of personalized nutrition service. In consumer anticipated satisfaction, there are trends that experience attributes influence more than search and credence attribute, and the interaction between the three attributes also has a tendency to influence satisfaction. Credence attributes is strongly significant to consumer loyalty. The insights obtained from the thesis provide practical implications for further development of personalized nutrition service and its applications.

Key words: Consumer adoption, Service attributes, Personalized nutrition service

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1. Introduction

1.1 Problem Definition

Nowadays, there is a growing trend towards health and wellness (Euromonitor, 2013). Consumer awareness of understanding and assessing individual health status and nutritional needs is rising (Kusmann & Fay, 2008). Diet is not only to provide individual with nutritional needs, and a feeling of satisfaction through the pleasure of eating, but also to reduce the risk of specific diseases and disorders, such as obesity, atherosclerosis, diabetes, hypertension and chronic diseases (Kok et al., 2008).

Applying the general public dietary advice to the whole population is not an effective way to achieve and maintain optimal health and development. Individuals respond differently to various nutrients and diets, depending on their physical characteristics, genetic makeup, lifestyle and environment. The causes and consequences of diseases are also different for different individuals. Therefore, the solutions to such health issues will need to be personal (German et al., 2004). Personalized nutrition, which is the concept of adapting food to individual needs based on individual assessments (Kusmann & Fay, 2008), can provides users with highly specific information on individual health risks and benefits of eating habits, and the desirable changes. Thus, it can be considered as a way with significant potential to satisfy various individual needs for health and nutrients (Bouwman, 2009).

Services that offer Personalized nutrition are in an early stage of development and relatively new service for both consumers and providers, for which related knowledge and understanding remain fragmented. Consumers are not familiar with the service, and providers did not yet identify the service attributes influencing consumer adoption in personalized nutrition. When providers do not know how service attributes affect consumers' choices, it would be difficult to promote personalized nutrition to the public, and to improve public health through this service, which in a way contribute to both economic and social wealth.

Furthermore, in addition to the absent understanding of important service attributes that influence consumer adoption, various roles of service attributes in the process of

service adoption also make the consumer adoption of personalized nutrition even more complicated. Consumers do not interpret and value all service attributes equally in the adoption process, which consists of stages of initial uptake, consumer satisfaction and loyalty. What attribute is important for making initial uptake may not be important in providing consumer satisfaction of the service, let alone the repeat purchase. Therefore, if the service put the same emphasis on all service attributes in different stages of adoption, it might be difficult to achieve the goal of increasing the adoption of personalized nutrition service to improve public health. There have been considerable studies on service attributes in different services. However, there is no such research on personalized nutrition service, and the different influences between service attributes in consumer initial uptake, satisfaction and loyalty are still unknown.

1.2 The objective of the research

The research objective is to study consumers' intention to adopt personalized nutrition service by understanding consumer's demands on the service in different stages of adoption: initial uptake, satisfaction and loyalty. In order to understand consumer's demands, we need to investigate how service attributes influence consumer adoption of personalized nutrition service. Thus, services attributes in personalized nutrition services should be identified first. During the service adoption, consumers get into the initial adoption of the service (initial uptake, which is getting on board first time), and the satisfaction of the service might lead to the long-term adoption (loyalty) of the service. Therefore, in this thesis, consumer initial uptake, satisfaction and loyalty are used as different stages to discuss the type of attributes that consumers value most in personalized nutrition service adoption. By understanding which roles the different service attributes play in different process, it might help to develop more efficient strategy to increase consumer willingness to adopt personalized nutrition service and hence, to improve public health successfully.

According to the problem definition and the aim of the thesis, the research question has been formulated as follows:

Research question

“How do personalized nutrition service attributes influence consumer initial uptake of, satisfaction with and loyalty to personalized nutrition services?”

The structure of this thesis is as follows. First, in chapter two, using literature review of service attributes, consumer adoption: consumer initial uptake, satisfaction and loyalty, and the relationship between them to build a conceptual framework from which to develop specific hypotheses. Then, in the third chapter, all study hypotheses formed by the literature review will be tested in the frame of a single experiment of service attributes in personalized nutrition service, and stages of consumer adoption. Also, the study design, procedure and measure will be explained in chapter three. In the fourth chapter, the main results of the study will be presented. Finally, the obtained study results will be interpreted; limitations of the study and possible implications of the results as well as suggestions for the future research will be discussed in the fifth chapter.

2. Theoretical Background

The aim of this chapter is to provide basic ideas about personalized nutrition service, service attributes, consumer service adoption, and the relationships between attributes and adoption. In the theoretical background, first, general ideas about personalized nutrition service are provided. Second, constructs influencing consumer adoption will be categorized in types of attributes, and three common service attributes—search, experience, and credence attributes are introduced. Third, the definitions and indicators for three stages of service adoption are provided. Then, the influences of three types of attributes in consumer initial uptake, satisfaction and loyalty are discussed to generate the hypothesis for answering the research question of the thesis.

2.1. Personalized Nutrition Service

Personalized nutrition is still an innovation in the food market, even though the concept of a nutrition adapted to specific personal factors is not new (Joost et al., 2007; Ronteltap et al., 2009). It has been commonly known that people with different physical or psychological status such as infants or pregnant women have different nutrition needs. However, the possibility of linking genetic testing with nutritional advice on an individual basis is a new development (Joost et al., 2007).

There are different focuses on personalized nutrition service. Many researches have aimed the concept of personalized nutrition on the activity of adjusting personal dietary counseling and advice combined with the knowledge of nutrigenomics (Gorman, 2006; Joost et al., 2007; Ronteltap et al., 2009). Some researches have regarded personalized nutrition as a personalized medicine for specific requirements, such as monogenic diseases (Joost et al., 2007). Many researchers focus personalization on genetic make-up, whereas The British Food Ethics Council (2005) understands personalization in a wider sense that people should take greater responsibility for their own health with the government commitment to support healthier food and lifestyle choices (Gorman, 2006).

The latest definition, given by Berezowska et al. (2012) and used in this thesis, is that personalized nutrition service is a service that provides healthy eating advice tailored

to suit an individual based on his/her own health status and lifestyle. Consumers provide personal data (behavioural data, phenotypic data, or genotypic data) to the service through communication channels. The service should convincingly link the personal data to nutrition knowledge by justifying the advice, and providing the advice by expertise. It delivers the specific nutritional advice to the consumers, and keeps consumers loyal to the service and the nutrition advice (Berezowska et al., 2012).

2.2. Service attributes

Many factors influence consumers' adoption on food, diet, health care, and nutrition products and services. Consumers are affected by those individual, social and product factors, and put different emphasis on them during the adoption process (Wang et al., 2008). Consumers judge a product by certain attributes they think are important to the purchase decision of that product (Lee & Ro Um, 1992). Different products or purchase situations make consumers consider these attributes differently. Some attributes are factors that could moderate consumer choice, but are not directly product (or service)-related attributes, such as individual or social factors. This thesis will only discuss service-related attributes to specify the influence that service attributes have on consumer initial uptake, satisfaction and loyalty.

In food service, perceived service quality can be discussed in different dimensions (Fandos & Flavián, 2006), which consumers use when evaluating product quality. There are quality cues defined as information stimuli related to a product's quality, and classified as extrinsic and intrinsic cues (Steenkamp, 1990; Heiman et al., 2001). Both intrinsic and extrinsic cues are product-related attributes, and consumers' perceptions of quality are influenced both by them (Espejel et al., 2007). Intrinsic cues represent physical characteristics of the product, and cannot be changed without changing the nature of the product itself; that is, the product itself, such as organic quality of the organic product, color, flavor, appearance of the product. Extrinsic cues are not parts of the physical product, such as price of the product, brand, promotion, and packaging. (Olson & Jacoby, 1972; Grunert, 2002; Espejel et al., 2007)

Quality perception is a complex process within the whole adoption process. It begins

with the acquisition and classification of intrinsic and extrinsic cues; however, some of these cues cannot be perceived sufficiently by consumers until the purchase or consumption of the product. (Espejel et al., 2007) Therefore, these product-related attributes can be also categorized in search, experience and credence attribute types with the interaction of intrinsic and extrinsic cues. From search to credence attributes, it can be defined by the increase of the difficulty of getting pre-purchase information and knowledge. Different service attributes might take different roles in the process of consumer adoption.

Search attribute referred to the both intrinsic (e.g. sensory factors) and extrinsic cues (e.g. price, packaging and brand name) that consumers were able to identify quality and evaluate before purchase or tryout the product through either inspection or research of information readily available from second-hand sources (Fandos & Flavián, 2006; Galetzka, 2006; Olynk, 2010). Extrinsic cues convey search information to the consumer since they are available prior to purchase (Grolleau & Caswell, 2006). Search attribute is visible for consumers, gives consumers opportunities to evaluate alternatives and know about the buying results before making a purchase decision (Mitra et al., 1999).

An experience attribute is classified as one for which quality can only be assessed during and after the service was purchased and consumed (Paswan et al., 2004). Examples of experience attributes are intrinsic cues that become available only when the product is used or consumed, and sensory attributes such as the taste, smell and feel of products (Galetzka et al., 2006; Fandos & Flavián, 2006). Services with experience attribute are such as hotels, restaurants, and hair salons. Consumers can only evaluate the quality through their consuming experiences, and after the purchase (Ostrom, 1995).

In contrast with search and experience attribute, credence attribute makes consumers not be able to determine the quality either before or after purchasing and consuming the product (Paswan et al., 2004). Consumers have difficulties to evaluate alternatives before purchasing credence services, or even after some tests have occurred. Both intrinsic (such as a product produced by Fairtrade) and extrinsic cues (such as the logo of Fairtrade) are related to the consumer but are not cued in the purchasing or

consuming process (Fandos & Flavián, 2006). The average consumers cannot examine the quality because of a lack of expertise or familiarity about the product, a lack of absolute certainty whether the analysis of their own need for the product was correct (Mitra et al., 1999; Olynk et al., 2010), or “because claim verification would take an unrealistically long time (Galetzka et al., 2006).” Ostrom (1995) gave some examples for credence services, such as tax consultants, psychotherapy, physicians and financial investments. Consumers may find it difficult to choose between different providers in the same service, and they are unable to know the effectiveness and quality right away even after trying the product; therefore, they might buy the service first and then learn about it.

2.3. Consumer Adoption

Consumer initial uptake, satisfaction and loyalty can be presented as different phases and used to discuss about consumer adoption of the products. Based on the Total Food Quality Model (Grunert et al., 2001), consumers use perceived quality and form quality expectations to make initial choices before purchase, and have quality experiences after purchase. By comparing between quality expectations and actual experiences, consumer satisfaction with the product and therefore, the possibility of repeat purchase can be determined. (Grunert, 2002)

2.3.1 Initial uptake

The initial uptake is the first step of the consumer adoption of a service through recognition of a need or problem, identification and valuation of the consideration set, and the selection of the product (Day & Barksdale, 1994). After the purchase and consumption, the post-consumption evaluation of the product leads to consumer satisfaction or dissatisfaction, and the satisfaction might serve a feedback function into future purchase and lead to consumer loyalty. The initial uptake is first part of the consumer decision-making process, without initial uptake of the service, there is unlikely to form the consumer satisfaction or loyalty toward the service or product. (Day & Barksdale, 1994; Blackwell & Miniard et al., 2001) Researchers can use purchase intention as an important indicator for estimating consumer initial uptake because consumers may actually buy the service when they have a positive purchase intention. When purchase intention increases, the possibility of purchasing also

increases because purchase intention can be seen as the possibility that consumers will plan or be willing to buy a certain product or service in the future. (Wu et al., 2011)

2.3.2 Consumer Satisfaction

Consumer satisfaction is a key element in development of consumer's cravings for future purchase (Mittal & Kamakura, 2001). It affects the repurchase intentions of both existing and potential customers. Consumer satisfaction appears with the comparisons between consumers' perceptions of actual service performance and the expectations they had before purchase. The satisfied customers that their perceptions meet the expectations might talk about their good experiences to others, and customers dissatisfied with a service that there are discrepancies between the performance and the expectations will tell their experiences to more than three other people (Mosahab et al., 2010; Ghobadian et al., 1944). Therefore, consumer satisfaction is an important factor for market share, profitability, positive word of mouth, consumer retention, and maintaining a loyal customer base (Siddiqi, 2011).

Consumer satisfaction is influenced/related to many concepts which represent affective (liking/pleasure) or cognitive (thinking/judging) components of product and service experience (Oliver, 2006). The satisfaction can be formed by consumers' perceived quality defined as the consumer's evaluation of the service, and the perceived value, which is how consumer sees the value of the service by comparing the benefits they receive from the service, and the costs they spend in obtaining and consuming the service (Hellier et al., 2003). Also, the affects that result from a consumer's experiences with the service may be associated with the evaluations of the service overtime (Wu, 2011; Crosby et al., 1990; Westbrook & Oliver, 1981).

According to the definitions of consumer satisfaction, for the new service, which is not yet on the market, it might be difficult to test consumer satisfaction before they actually purchase and experience the service. Anticipated satisfaction, that is, how satisfied a consumer will be with a purchase, also influences consumer adoption (Shiv & Huber, 2000). It is adopted the concept that consumers will evaluate the expectation of product or service according to their consumption experience (Lee &

Li, 2013). Therefore, by using the antecedents of satisfaction (overall satisfaction, happiness, feeling-good, whether do the right thing and make wise decision), anticipated satisfaction can be evoked and measured without consumer purchase experiences.

2.3.3 Consumer Loyalty

Consumer loyalty is a complicated but important concept for marketing. Companies could give consumers motivations to repeat their purchase, and hence gain consumer loyalty by offering coupons to consumers who buy their product. Different definitions of consumer loyalty have been stated from studies, and the majority thinks there are two perspectives of loyalty, behavioral and attitudinal. It is developed by methods that strengthen and develop “a positive state of mind and the associated behaviors (Siddiqi, 2011).” From the behavioral aspect, loyalty is considered as “effective consumer behavior toward a specific product, brand or establishment over time (Fandos & Flavián, 2006),” emphasizing on the repeat purchase. From the attitudinal aspect, it is “a state of mind, a set of attitudes, beliefs, and desires (Siddiqi, 2011)” with positive effects and feelings toward a product, brand or service. Some studies argued that with greater levels of loyalty to the product or service, consumers tend to have more repurchase behavior; some studies suggested the other way around or both ways (Ferrand et al., 2010).

Many indicators reveal consumer loyalty of a product or service. From the behavioral and attitudinal definitions of loyalty, consumer loyalty can be tested from consumers’ repeat purchase behavior and their loyal belief and identity that they have tendencies to stay with favorite item rather than seek variation (Campo et al., 2000). Also, Ganesh et al. (2000) measured the loyalty construct into two factors: active and passive loyalty, which consumers would have enough motivations for using word of mouth of the service (active), and value the service above the price (passive).

2.4. Relationships between consumer adoption and service attributes

Search attribute theoretically captures characteristics of services that potential consumers can and would like to evaluate before they select a specific service (Paswan et al., 2004). Therefore, in consumer initial uptake, search attributes might be

important in this process. Since search attributes are relatively unambiguous (Srinivasan & Till, 2002), consumers can directly utilize both intrinsic and extrinsic cues of the products to make decisions, such as advice frequency, flyer design, and price of the service. When there are search attributes in the choice set, consumers may make their initial uptake based on search attributes, and ignore experience and credence attributes, considering experience and credence attributes as missing information, or supposing that all choices have the same quality in these attributes (Rusli, 2007). For example, consumers might use color of food as search attributes to evaluate the quality of taste, which is an experience attribute, before they really taste the product.

2.4.1. Consumer Initial Uptake

In the initial uptake, consumers take hardly experience attributes into considerations before consumption since experience attributes are determined after the product was purchased and consumed. Consumers must try a product to evaluate and have inferences on its experience attributes. If consumers were to evaluate the product before experiencing it, they would have to rely on other cues to have inferences about its quality (Srinivasan & Till, 2002). Rusli (2007) suggested that consumers could evaluate the quality of the product and make initial choices based on their experiences from product usage and product attributes information that is exposed to them. However, when facing a new product that has never been exposed to consumers, the experiences from product usage might not really help in this situation.

Credence attributes, similarly to experience attributes, cannot be verified readily prior to trial. Consumer cannot evaluate fully even after the consumption (Srinivasan & Till, 2002). Hence, in the absence of any other cues, consumer acceptance of credence attributes was dependent on consumer confidence in the extrinsic cues of product claims (Andersen, 1994), brand name (Srinivasan & Till, 2002), and on the trust of the service information provided by the seller. For example, service with the experts of higher academic prestige may be considered as more trustworthy than service with lower reputation; professional product information may easily link to the effectiveness of the product. Therefore, it is assumed that credence attributes are one

of important determinants of product choice; however, it might be still difficult for consumer to evaluate the service when facing the new service.

Therefore, in consumer initial uptake, it is hypothesized that:

- *Hypothesis 1:* In consumer initial uptake, search attribute has more influences than experience and credence attributes.

2.4.2. Consumer Satisfaction

Search, experience, and credence attributes have different functions influencing consumer satisfaction. Galetzka et al. (2006) has stated that consumer satisfaction change with “their experiences and the service information available to them before, during and after service delivery.” Consumers will use heuristic information that is available to them, such as information about the service, human contact and waiting time (experience attributes), perceived competence, perceived risk (Mitra et al., 1999), trustworthiness, responsiveness and empathy, to evaluate the quality of the service, and hence, to have satisfaction and dissatisfaction.

The level of satisfaction or dissatisfaction can be increased or decreased with the product information received before the purchase (Olshavsky & Kumar, 2001.), which search attributes might be the easiest-to-get product information. Also, vivid attributes that are easy to visualize and construct imagined experiences from, which is also the characteristics of search attributes, attract more attentions and influence consumer anticipated satisfaction before their purchase (Shiv & Huber, 2000). However, besides the influences prior to the consumption, search attributes still might not be the main attributes for service quality evaluation. Therefore, it is assumed that search attributes might play a minor role affecting consumer anticipated satisfaction.

Experience attributes of the service are important for consumer evaluation of the service, and lead to generate satisfied consumers, especially when facing a credence service that is the most difficult for consumers to evaluate. The SERVQUAL, an important theoretical approach for investigating service quality (Parasuraman et al., 1985, 1988), used five dimensions: tangibility, reliability, responsiveness, assurance,

and empathy to capture satisfaction during and after service consumption (experience attributes) and not the pre-purchase (search attributes) evaluation of service (Paswan et al., 2004). The evaluation will also depend on experience qualities of the service (Galetzka et al., 2006) and hence, to have satisfaction or dissatisfaction. Consumers' perceptions of trust are formed when consumers use different cues to increase more experiences and find that promises and expectations are fulfilled (Gummerus, 2004). Good experiences with the quality of products or service can generate trust and increase consumer satisfaction.

Credence attributes also influence consumer satisfaction. It is argued that in a service having high credence attributes, perceived quality may not be an important type of attribute of consumer evaluation (Hellier et al., 2003), since consumers still cannot evaluate the quality after delivery of the service. For example, consumers have difficulties to check if their private information is safe enough when service delivery through Internet. The perceived value can be decided by credence because consumers may usually not have well-defined expectations of the service since the lack of knowledge of the service. For example, consumers would not be able to know immediately if their body conditions become healthier and improved after eating high-fiber food, and whether the high-fiber is the main reason for getting healthier; instead, they need to have the faith in the product. Therefore, consumers keep their belief in credence attributes to be satisfied with the product. Sometimes, consumers use experience attributes to enhance the satisfaction and therefore, build up the trust of credence attributes. For example, people usually believe bitter pills may have better effects when they are actually not sure about the effect of medicine.

Therefore, in consumer satisfaction, it is hypothesized that:

- *Hypothesis 2:* In consumer anticipated satisfaction, experience attribute influences more than search and credence attribute.

2.4.3. Consumer Loyalty

In the adoption stage of consumer loyalty, search attributes still affect consumer repurchase intentions, such as price perceptions. When consumers understand more

the value and quality of the product with the purchase experiences, they are more sensitive to changes of price, which may influence their intention to repeat purchase (Lodorfos et al., 2006). Consumers would also perceive switching cost to see if it is “worthy” (cost more than they will get) to switch the service by learning from the experience of the product. People who are already enrolled in a health plan are less likely to switch service because the price sensitivity makes consumers less elastic, and become “locked in” to earlier choices (Strombom et al., 2002). The negative perceptions of price are likely to have a negative effect on intention to repurchase (Ferrand et al., 2010). For example, in e-retailers, it is found that the cheaper the price, the more likely consumers were willing to repurchase. Therefore, it is assumed that search attribute might be less important in consumer loyalty than it is in consumer initial uptake.

Experience attributes have strong links with consumer satisfaction, which can lead to consumer loyalty (Bei & Chiao, 2001). Consumer satisfaction has direct positive effects on loyalty and repurchase intention. When consumers have good experiences on using the products or service, the satisfaction would generate nice image of the product, and increase the frequency and willingness of using of the product, recommending a service, and repurchase from the provider (Ferrand et al., 2010). However, consumer satisfaction is not the only factor that influences consumer loyalty to the product or service. “Consumer inertia, brand promotion, customer information processing limitations, supplier monopoly (Hellier et al., 2003)” can also bond the consumer to the service, even with lower consumer satisfaction with the product or service.

Credence attribute is still vital for increasing consumer loyalty and repurchase behavior, especially for credence- based service. People who have strong loyalty to the products or service might also have high trusts in credence attributes. They still keep their faith and believe in the effectiveness and value of the products or services. The belief in credence attribute might be increased indirectly by experience attributes. Good consuming experiences would have positive influences on consumer satisfaction, and then generate trusts. Trusts have effects on consumer loyalty, commitment and repurchase intention (Mosavi & Ghaedi, 2012). When consumers believe in reliability, safety and honesty of the service, the feeling of trust may

increase consumer loyalty (Lodorfos et al., 2006). For example, when consuming medicine, if consumers believe in the credence attribute informed that the drug is safe and effective to consume, they would keep their follow the prescriptions to take the medicine.

Therefore, in consumer loyalty, it is hypothesized that:

- *Hypothesis 3:* In consumer predicting loyalty, experience attribute and credence attribute influence more than search attribute.

2.5 Research Hypotheses

- *Hypothesis 1:* In consumer initial uptake, search attribute has more influences than experience and credence attributes.
- *Hypothesis 2:* In consumer anticipated satisfaction, experience attributes influence more than search and credence attributes.
- *Hypothesis 3:* In consumer predicting loyalty, experience attribute and credence attribute influence more than search attribute.

$$\text{Initial Uptake} = \beta_0 + \beta_{U1} \text{ Search} + \beta_{U2} \text{ Experience} + \beta_{U3} \text{ Credence} + \varepsilon_0$$

$$\text{Anticipated Satisfaction} = \beta_0 + \beta_{S1} \text{ Search} + \beta_{S2} \text{ Experience} + \beta_{S3} \text{ Credence} + \varepsilon_0$$

$$\text{Predicting Loyalty} = \beta_0 + \beta_{L1} \text{ Search} + \beta_{L2} \text{ Experience} + \beta_{L3} \text{ Credence} + \varepsilon_0$$

$$H1: \beta_{U1} > \beta_{U2}, \beta_{U3} ; H2: \beta_{S2} > \beta_{S1}, \beta_{S3} ; H3: \beta_{L2}, \beta_{L3} > \beta_{L1}$$

3. Methodology

Material

Three essential attributes are chosen from the service attributes of personalized nutrition service, which were identified in Berezowska et al.'s Consumer acceptance report (2012), and are classified into search, experience and credence attribute as generic attributes in different types of attributes in this thesis.

Search attributes in personalized nutrition service are price, flyer design, text style, and advice frequency that consumers can easily evaluate the quality of the service before purchase. Advice frequency can be a representative of search attribute because it is an essential service attribute for generating motivation of keeping the advice. Many participants from the acceptance report (Berezowska et al., 2012) preferred regular meetings, support and guidance, such as weekly meeting or once or twice a month.

Experience attribute in personalized nutrition service is mainly the communication channels between consumers and the service, which consumers assess the quality after buying the service and experiencing this service attribute. There are different ways of communication, and personal contact is seen as central for the development of a sustainable personalized nutrition service because it is more trustworthy, thorough, and objective, it makes communication works more flexible, complete and easy face to face (especially some people might not be able to use the Internet), and it has the social pressure of personal contact to reveal true information. On the contrary, impersonal contact such as online website or emails was considered to be a convenient but never as a full replacement of personal contact.

Personalized nutrition service consists of many credence attributes that consumers cannot evaluate the quality before or after purchase and consumption because it is related to a higher degree of customization, and need the personal intervention of the service provider (Ostrom, 1995). The personal data type that consumers provide to the service, the nutrition advice provided by the service such as diet and exercise plan or shopping list, and the advice provider are credence attributes. Take service provider

as the representative of credence attribute, consumers have difficulties to evaluate the quality because of the lack of expertise to check if the provider really offer them useful advice to improve their health. The involvement of qualified experts in the personalized nutrition service is considered important. People expect to have a trained, and experienced with higher education or scientific background experts to handle their personal data and personalized nutrition advice. The service provided through fitness club is more preferred by participants because they can provide exercise plan for consumers though physician from fitness club is not always seen as a qualified expert related to nutritional problem. However, most people do not have positive attitude toward employer as an service provider because employer cannot be trust, for example the career has nothing to do with nutrition, the service is being forced, or there is a lack of privacy in the workplace.

Design

As personalized nutrition service is new and not well developed yet, it may be difficult for consumers to image it (Ronteltap et al., 2009), let alone to evaluate their initial uptake, satisfaction and loyalty of the service according to few service attributes. Therefore, this thesis built systematically varied scenarios of basic personalized nutrition service in the future to enhance the validity of consumer evaluations.

A systematically varied design was used to test consumers' preferences in initial uptake, anticipated satisfaction, and predicting loyalty. A 2 (high vs. low advice frequency) \times 2 (personal vs. impersonal contact) \times 2 (fitness club vs. employer) between-subjects, and 3 stages of adoption within-subjects mixed full factorial design was designed to compare the different emphasis of service attributes in different stages of service adoption. With the three chosen service attributes that represent the search, experience and credence attribute respectively, with two levels (positive(+) vs. negative(-) features) each, the total number of possible scenarios of product would be eight ($2 \times 2 \times 2$). (Table 1)

Table 1. Eight (2×2×2) scenarios

Search attribute	Experience attribute	Credence attribute	Scenarios
(+)High advice frequency: 1x per two weeks	(+)Personal contact	(+)Fitness Club+ Dietitian	1
		(-)Employer+ Dietitian	2
	(-)No personal contact	(+)Fitness Club+ Dietitian	3
		(-)Employer+ Dietitian	4
(-)Low advice frequency: “1x per 3 months” or “once off”	(+)Personal contact	(+)Fitness Club+ Dietitian	5
		(-)Employer+ Dietitian	6
	(-)No personal contact	(+)Fitness Club+ Dietitian	7
		(-)Employer+ Dietitian	8

Pilot Study

Each service attributes are divided into two levels (positive vs. negative features of a personalized nutrition service), which is based on the participants preferences. Search attribute is represented by advice frequency (high freq.: “once per three months” vs. low freq.: “a once off advice”), experience attribute is represented by communication channel between consumers and the service (“personal meeting” vs. “email”), and credence attribute is represented by service provider (“dietitian through fitness club” vs. “dietitian through employer”). Before assembling these service attributes into systematically scenarios, they were pre-tested in a pilot study.

A quantitative pilot study was conducted to verify that the selected representatives of service attributes for use in the main analysis: advice frequency, personal contact as the communication channel, and advice provider of the service, were important for consumers in the service adoption of different stages: initial uptake, satisfaction and loyalty. Also, the positive and negative features of three attributes, and the validity of the anticipating loyalty scales were tested to make sure that the items adequately captured the domain of interest. A small sample of twenty participants (65% males, average age 26.85 (SD 4.06) years) was given a questionnaire and asked to rate the preferences of the service attributes, and pretest items for consumer loyalty. In the first part of the pilot study, three seven-point Likert scales anchored between 1(not at all important) and 7(extremely important), 1(unacceptable) and 7(perfectly acceptable), 1(strongly disagree) and 7(strongly agree), were used for service attributes. In the second part, the pretest of loyalty scale asked each participant to rate scenario one on a set of seven items using seven-point Likert scales anchored between 1(strongly disagree) and 7 (strongly agree). This questionnaire is presented in

Appendix 1.

All the service features (How often you get advice; How you communicate with the service provider; Who the service provider is) are important for consumers when they are thinking of engaging in a personalized nutrition service (p -value <0.05). Most participants preferred that nutrition advice be provided “once per 3 months” ($M= 5.00$) than “once per 2 weeks” ($M= 3.65$), and “once off” ($M= 2.45$). There is no significant difference between once per 3 months and 2 weeks. Therefore, “once per 3 months” and “once off” were chosen to be the positive and negative feature of the search attribute. Most participants prefer “personal meeting” ($M= 4.00$) than “Internet” ($M= 3.20$) as the communication channel between service provider and them, and prefer that personalized nutrition service is provided by “Dietitian/Nutritionist” ($M= 4.05$) than “Fitness clubs” ($M= 2.90$), and “Employers of your work” ($M= 2.20$). These results provided a good basis for use of scenarios, service attributes and the measurements for initial uptake, anticipated satisfaction and predicting loyalty in the main study, which the design of the research has been supported.

Sample

The data were collected in June 2013. The study employed a convenience sample. Participants were recruited through Internet at random, and mainly drawn from the student population at Wageningen University. A total of 311 participants were involved in the study, of which 115 participants (37%) were removed because of missing data. Of the remaining 196 participants (63%) successfully finished their participation: average 24 participants for each scenario. Age of participants ranged between 19 and 62 ($M = 26.04$, $SD 5.21$ years). Most participants were female (69.4%).

Procedure

A structured questionnaire about consumer initial uptakes, anticipating satisfaction and loyalty of the product was used for each scenario, and it is an online survey method to collect the data for the study. The participants were randomly assigned to one of eight scenarios and asked to answering the questionnaire. At the beginning of

the questionnaire, a short introduction of personalized nutrition service and the instruction of questionnaire were provided to participants as a warm-up and to familiarize them with the task. The definition of personalized nutrition service, “a service that provides healthy eating advice tailored to suit an individual based on his/her own health status and lifestyle,” and the mechanism of the service were provided to participants. Then, participants were asked to read a scenario and subsequently answer several questions about their evaluations of scenarios. After the task, at the end of the questionnaire, participants were asked to provide demographic information, including age, gender, study program, health status and their general understandings of personalized nutrition service.

Measurement

As measures for consumer adoption of the service, the dependent variables were initial uptake, anticipating satisfaction and loyalty. For initial uptake, purchase intention was used as the indicator in a five-item seven-point Likert-type scale, anchored between 1 (strongly disagree) and 7 (strongly agree), were used, and the items for initial uptake were selected from Bower & Landreth (2001). The scale was reliable with Cronbach's $\alpha = 0.95$.

For anticipating satisfaction, the scale from Shiv and Huber (2000) was used, which is a seven-points semantic differential scale, anchored on “dissatisfied (1)/ satisfied (7),” “unhappy (1)/ happy (7),” “feeling-bad (1)/ feeling-good (7),” “I did not do the right things (1)/ I did the right thing (7),” and “I was unwise (1)/ I was wise (7),” respectively. For further analysis, the scores on the five items were averaged, the key dependent variable in the present study thus ranging from 1 to 7. The scale was reliable with Cronbach's $\alpha = 0.923$.

To measure the predicting loyalty, seven-point items were anchored between 1 (strongly disagree) and 7 (strongly agree), and were selected and adapted from previous research (Ganesh et al., 2000; McMullan, 2005) as the best item for this research from their respective multiple-item scales. Two items from the scale were reverse coded. From the behavioral and attitudinal definitions of loyalty, four questions were asked to test consumers' repeat purchase behavior and their loyal

belief: 1) I will go for this service again after using it; 2) I think I will get tired of using this service after a while; 3) I intend to repurchase this service; 4) I think I will be a loyal buyer of this service. Two questions were asked for active loyalty of word of mouth: 1) I will recommend this service to my friends and family; 2) I am likely to make negative comments about this service to my friends and family, and one question for passive loyalty which consumers value the service above the price: if the service were to raise the price of its services, I will still continue to be a consumer of this service. The scale was reliable with Cronbach's $\alpha = 0.85$. The anticipating loyalty scale was tested by the pilot study in this thesis study with a sample of 20 participants. The questionnaire is presented in Appendix 2.

Data analysis

To examine whether the service attributes of advice frequency, communication channels, and service provider influence differently on consumer initial uptake, anticipating satisfaction, and predicting loyalty of personalized nutrition service, an ANOVA analysis was performed. Service attributes as independent variables, and Stages of service adoption as dependent variable respectively. The additional analysis of relationships between consumers' general understandings of personalized nutrition service and consumer service adoption was done by linear regression model with stages of service adoption as dependent variables.

4. Results

Preparatory analysis was performed to examine of the correlations between key variables. The correlations between three attributes: search attribute (Advice frequency, $M= 0.50$), experience attribute (Communication channels, $M= 0.46$), and credence attribute (Service provider, $M= 0.53$) are not significantly correlated with each other (Table 2). The result show a support that three services attributes, as independent variables, should have no effects on each other, and is able to predict the different importance of service attributes in the stages of service adoption.

In addition, there are significant correlations between consumer initial uptake ($M= 4.41$; $SD= 1.42$), anticipated satisfaction ($M= 4.63$; $SD= 1.03$) as well as predicting loyalty ($M= 3.81$; $SD= 0.91$), which indicates that the consumer adoption model performed well and that there are close relationships between stages in consumer service adoption process. Credence attribute also showed a significant correlation with predicting loyalty, which was able to predict that the credence attribute has influences on predicting loyalty.

Table 2. Pearson Correlation among the key variables

Variables	1	2	3	4	5	6
1. Search attribute	-					
2. Experience attribute	.03	-				
3. Credence attribute	-.06	.06	-			
4. Initial Uptake	-.09	.08	-.05	-		
5. Anticipated Satisfaction	-.08	.11	-.06	.66**	-	
6. Predicting Loyalty	-.06	.06	-.17*	.70**	.68**	-

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

4.1 Main effects of services attributes on stages of adoption

3-way ANOVA analysis was used to test the three hypotheses of services attributes (search, experience, and credence) on stages of consumer adoption for personalized nutrition service (consumer initial uptake, anticipated satisfaction, and predicting loyalty.)

Hypothesis 1: In consumer initial uptake, search attribute has more influences than experience and credence attributes.

The performed 3-way ANOVA showed no significant main effect of search attribute (Advice frequency) ($F(1,188)=1.71$, $p=0.19$), experience attribute (Communication channels) ($F(1,188)=1.41$, $p=0.24$), and credence attribute (Service provider) ($F(1,188)=0.51$, $p=0.48$) on initial uptake. Interaction of experience attribute and credence attribute has shown a trend to have effects on consumer initial uptake ($F(1,188)=3.36$, $p=0.07$) (Figure 1). When the service is provided by the employer, there is no difference on the initial uptake between different communication channels. On the contrary, when the fitness club is the service provider, there is higher initial uptake on personal contact with the dietitian than through email. However, the interaction of the rest two independent factors and three independent factors did not show any significant result. On the basis of ANOVA, it implies that we did not accept research hypothesis 1, which means that during initial uptake, search attribute does not have more influences than experience and credence attributes.

Table 3. Estimated Marginal Means of Initial Uptake

Service attributes (n=196)		*Mean (Std. E)
1. Search attribute: Advice frequency	Once only	4.55 (.15)
	Every 3 months	4.28 (.14)
2. Experience attribute: Communication channels	E-mail	4.29 (.14)
	Personal contact	4.54 (.15)
3. Credence attribute: Service provider	Employer-Dietitian	4.49 (.15)
	Fitness club-Dietitian	4.34 (.14)

*. Seven-point Likert-type scale was used, anchored between 1(strongly disagree) and 7 (strongly agree).

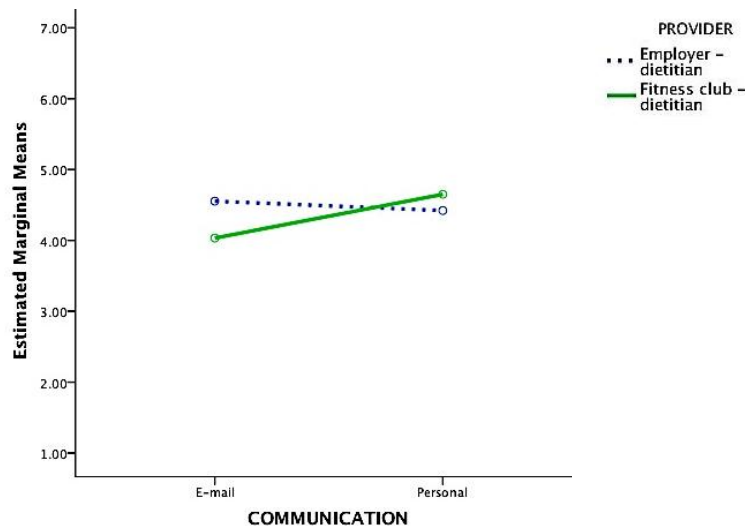


Figure 1. Interaction of experience attribute and credence attribute on initial uptake

Hypothesis 2: In consumer anticipated satisfaction, experience attribute influences more than credence attribute and search attribute.

The performed 3-way ANOVA showed a trend of the main effect of experience attribute (Communication channels) ($F(1,188)=2.74$, $p=0.10$), which personal contact as the communication channel between service and consumer had higher estimated marginal mean than communicating via email (Table 4). The interaction of the three attributes ($F(1,188)=3.08$, $p=0.08$) also showed a trend towards consumer anticipated satisfaction. The trend can be seen in the figure 2 that when the advice is only provided once by the dietitian in the fitness club, or provided once every three months by the employer, there are no differences on anticipated satisfaction between communication channels. In contrast, when the advice is provided once only by the employer, or once every three months by the fitness club, participants had higher anticipated satisfaction on personal contact than via email. However, there is no significant main effect of search attribute (Advice frequency) ($F(1,188)=1.43$, $p=0.23$), and credence attribute (Service provider) ($F(1,188)=0.91$, $p=0.34$) on consumer anticipated satisfaction. Interaction of two independent factors also did not show any significant result. Considering with the results above, we partially accepted research hypothesis 2, which suggests that in consumer anticipated satisfaction, experience attribute influences more than search and credence attributes, but no evidence shows that credence attribute influences more than search attribute.

Table 4. Estimated Marginal Means of Anticipated Satisfaction

Service attributes (n=196)		Mean (Std. E)
1. Search attribute: Advice frequency	Once only	4.73 (.11)
	Every 3 months	4.56 (.10)
2. Experience attribute: Communication channels	E-mail	4.52 (.10)
	Personal contact	4.77 (.11)
3. Credence attribute: Service provider	Employer-Dietitian	4.71 (.11)
	Fitness club-Dietitian	4.57 (.10)

*. Seven-point semantic differential scale was used, anchored between 1 and 7 (Shiv & Huber, 2000).

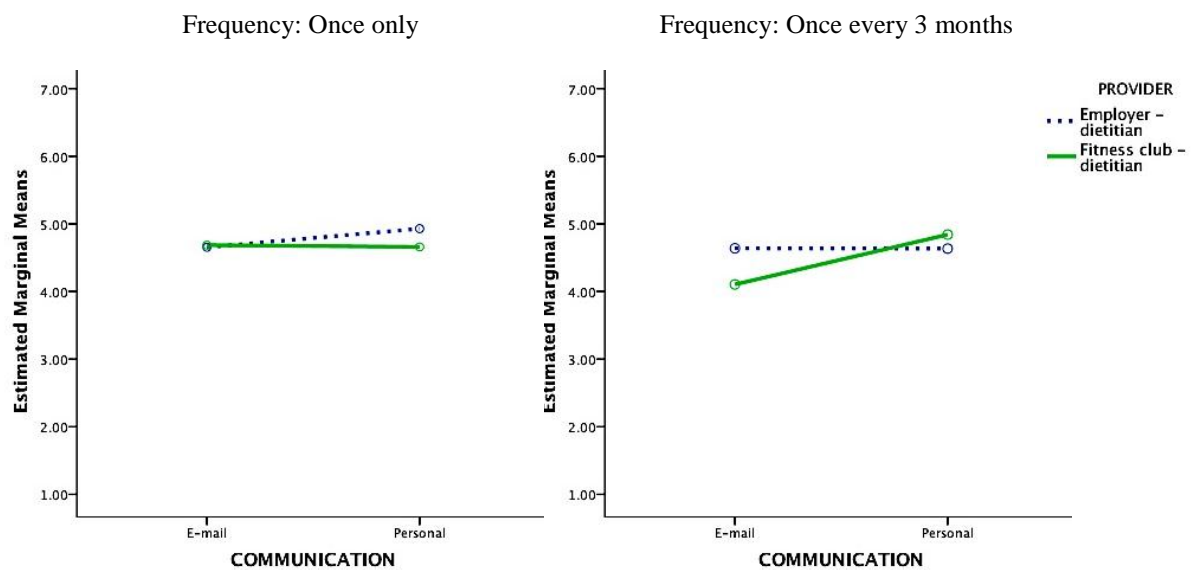


Figure 2. Interaction of the search attribute (frequency), experience attribute (communication channel), and credence attribute (service provider) on consumer anticipated satisfaction:

Hypothesis 3: In consumer predicting loyalty, experience attribute and credence attribute influence more than search attribute.

As predicting loyalty as a dependent variable, there were no significant main effect of search attribute (Advice frequency) ($F(1,188)=1.18$, $p=0.28$) and experience attribute (Communication channels) ($F(1,188)=0.86$, $p=0.36$). However, credence attribute (Service provider) demonstrated a significant result ($F(1,188)=6.14$, $p=0.01$) on consumer predicting loyalty, which implies that consumers' predicting loyalty to personalized nutrition service is influenced by credence attribute, and the service and dietitian is provided by employer has higher estimated marginal means than the service and dietitian is provided by fitness club. The performed 3-way ANOVA did

not show any significant effects on the interaction of two independent factors and three independent factors. There is a limited evidence to prove research hypothesis 3; that is, in consumer predicting loyalty, it has been found that credence attribute influence more than search attribute. But no support has been found that experience attribute influence more than search attribute in consumer predicting loyalty.

Table 5. Estimated Marginal Means of Predicting loyalty

Service attributes (n=196)		Mean (Std. E)
1. Search attribute: Advice frequency	Once only	3.89 (.09)
	Every 3 months	3.75 (.09)
2. Experience attribute: Communication channels	E-mail	3.76 (.09)
	Personal contact	3.88 (.10)
3. Credence attribute: Service provider	Employer-Dietitian	3.98 (.10)
	Fitness club-Dietitian	3.66 (.09)

*. Seven-point Likert-type scale were used, anchored between 1(strongly disagree) and 7 (strongly agree).

4.2 Effects of the perceptions of personalized nutrition services on stages of adoption

By the end of the questionnaire, participants were asked to provide their health status and their general understandings of personalized nutrition service. As an additional analysis, linear regression model was used to check if these factors also influence consumer initial uptake, anticipated satisfaction, and predicting loyalty, which could be also the supports or hindrances for the hypotheses as implications for further discussions.

Upon linear regression model, consumer initial uptake, anticipated satisfaction and predicting loyalty were dependent variables. The health status that participants thought of themselves has been found a trend to link with initial uptake ($F(1,194)=3.48$; $p=0.06$), but insignificant for predicting anticipated satisfaction ($F(1,194)=0.03$; $p=0.86$) and predicting loyalty ($F(1,194)=1.16$; $p=0.28$). It indicates that the healthier participants considered themselves, the lower they would be willing to choose personalized nutrition services.

The extent to which participants think that personalized nutrition services can help them reach a healthier lifestyle is significantly predictable for initial uptake ($F(3,192)=59.83$; $t=7.55$; $p=0.0$), anticipated satisfaction ($F(3,192)=18.07$; $t=5.23$; $p=0.0$), and predicting loyalty ($F(3,192)=38.09$; $t=5.94$; $p=0.0$). The result implies that the more participants agreed that personalized nutrition services can help to have a healthier lifestyle, the higher evaluations for the service adoption. By placing emphasis on the extent of the interest in buying health-related products and services, it has been found as a significant predictor for initial uptake ($F(3,192)=59.83$; $t=5.03$; $p=0.0$) and predicting loyalty ($F(3,192)=38.09$; $t=3.76$; $p=0.0$), but is not for the anticipated satisfaction ($F(3,192)=18.07$; $t=0.98$; $P=0.33$); that is to say, participants who are interested in purchasing health-related products and services are more likely to choose and be loyal to personalized nutrition services. On the contrary, no significant results were found in both the extent of the interest in health-related issues, and whether the participants have heard of personalized nutrition service, which suggests that the interest in health-related issues and the notice of personalized nutrition service before have no influence on consumer initial uptake, anticipated satisfaction, and predicting loyalty. (Table 6)

Table 6. Coefficients of Consumer service adoption

1. *The extent to which participants think that personalized nutrition services can help them reach a healthier lifestyle.*
2. *The extent of the interest in buying health-related products and services.*
3. *The extent of the interest in health-related issues*

a. Coefficients of Consumer Initial uptake

Model	Unstandardized Coefficient			
	B	Std. Error	t	Sig.
1	0.50	0.07	7.55	0.0
2	0.32	0.06	5.03	0.0
3	0.01	0.07	0.12	0.90

Dependent variable: Initial uptake

b. Coefficients of Consumer anticipated satisfaction

Model	Unstandardized Coefficient		t	Sig.
	B	Std. Error		
1	0.31	0.06	5.23	0.0
2	0.06	0.06	0.98	0.33
3	0.06	0.06	1.10	0.27

Dependent variable: Satisfaction

c. Coefficients of Predicting loyalty

Model	Unstandardized Coefficient		t	Sig.
	B	Std. Error		
1	0.27	0.05	5.94	0.0
2	0.17	0.04	3.76	0.0
3	0.03	0.05	0.74	0.46

Dependent variable: Predicting loyalty

4.3 Individual opinions

The remarks from the participants were made randomly at the end of the survey as feedback regarding to the questionnaire and personalized nutrition service.

Individual opinions indicate that it is difficult to evaluate satisfaction or predict the loyalty before really using personalized nutrition service. *“I feel some of the questions are based on my imagination on future decision, so it might be not so accurate if the real situation happens to me.”* Some participants stated that they had difficulties to imagine the service in the hypothetical situation, and to know how would they like the service in advance. *“I think the survey was too hypothetical.”* In addition, the extent of satisfaction can also depends on the interaction with the nutritionist or the ambiance in the fitness center, and *“it is hard to evaluate just from a vague description of the service.”* So, they chose to put neutral answers.

The accuracy of the personalized nutrition service and how successful it will be were mentioned as one of key factors for consumer satisfaction and loyalty of the service. *“I am not very clear how accurate the service will be as to analysis my input, or not sure if the service will be in wrong track if I give wrong inputs as I am not professional about it.”* When the participants do not know how good is the purchased

service, they are not sure if they will be satisfied and able to repurchase and recommend the service to friends or family. For some participants, they might wait for a while after buying the service, and see how the service would work. If the service will help the participants, they might continue to use the service; and if there were no improvement, they would not continue to use the service. *“It was difficult to say if I would recommend or continue use it because I do not know the benefits and its results in practice.”*

Some participants have opposed opinions of not buying personalized nutrition service because they considered themselves healthy, and had enough knowledge and good habits such as doing sports and having balanced diets to keep healthy, and they do not see themselves as in need of the service. *“I can do better myself toward a healthy lifestyle than the personalized nutrition service can do.”* Some participants believe themselves independent of taking care of their own health and concern about keeping themselves following “some rules” from the personalized nutrition service. Therefore, they would not purchase the service even though they still showed their interests in personalized nutrition service, since *“it might provide information about allergies and my body reaction to food.”*

Individual opinions showed that the high advice frequency of once per three months is still not enough. Some participants specified it requires weekly or monthly meetings and stepwise supervision process to help them reach a healthy diet, and make personalized nutrition service be successful. Email as communication channel between consumers and the service, was not preferred by participants. Regardless the general preferences of personal contact, some participants did not believe only emails really work on health issues. *“It is hard to encourage people to follow the advice because people are lazy and tend to loose interests easily,”* said by one participant who has worked in this area. It suggested that personalized nutrition service might not work well only through email. On the topic of the employer as an advice provider opinions were divided. Some participants did not favor the involvement of the employer and had a strong objection to it because that the service is being forced, and maybe the employer could not be trusted. *“There is no way I would ever consider taking on a program such as this through a third party to whom I have further*

contractual obligations.” On the contrary, some participants would like to try the service if the employer pays the service.

The price of the service was mentioned as one of the influential factor for the initial uptake. Some participants suggested that the likely cost of the service should have been included in this survey as such decisions depend mainly on the cost. *“If it is free, I would maybe try just for fun to see what kind of answer I could get.”* Participants had varied preferences of personalized nutrition services. Participants that regarded the service as positive argued that personalized nutrition service is very good idea because the tailored advice and recommendations can work better and be more efficient for improving personal health. Some participants thought that the service is very good for girls as they are strongly health conscious or they always tend to show psychological anorexic behavior. However, some participants had no idea about the service, or they would feel pressures if all their diets and food would be pre-determined because *“sometimes I like to make spontaneous food-choices (also for non-healthy food).”*

5. Discussions and Conclusions

This thesis explored how personalized nutrition service attributes influence consumer initial uptake of, anticipated satisfaction with, and predicting loyalty to personalized nutrition services. In this thesis, we have considered the differences influences of service attributes during the process of consumer adoption, identified services attributes into search (Advice frequency: “once per three months” vs. “a once off advice”), experience (Communication channels: “personal contact” vs. “email”), and credence attributes (Service providers: “Dietitian through fitness club” vs. “dietitian through employer”) from personalized nutrition service, and analyzed the relationship between services attributes and consumer initial uptake, anticipated satisfaction and predicting loyalty.

No support was found for hypothesis 1 that search attribute (advice frequency) has the most influence on initial uptake. The result, which the main effects of three attributes were not significant, implies that the search, experience, and credence attributes are not individually important for participants’ initial uptake on personalized nutrition service. However, it has been found that there was a tendency of the interaction between experience attribute (communication channels) and credence attribute (service provider) influencing consumer initial uptake, showing that dietitians provided by fitness clubs should not use e-mails to communicate with consumers.

Hypothesis 2 has been proved that the trends have been found that the effect of experience attribute (communication channels), and the interaction of the three attributes influence consumer anticipated satisfaction, which implies that experience attribute influences more than search and credence attributes; that is, consumers communicate with the service provider through personal meetings leads to better consumer anticipated satisfaction of personalized nutrition service. The trend of the interaction of the three attributes is important for the personalized nutrition service provider, which the dietitian through fitness club should not use e-mail to communicate with their customers at the frequency of providing tailored advice once every three months.

Partial support has been found in hypothesis 3 that experience and credence attributes influence more than in consumer predicting loyalty. The result only shows credence attribute was significantly related to consumer predicting loyalty, which implies that the trust and the belief in the service provider (credence attribute) can make consumers loyal to personalized nutrition service, and the service which is provided by employer allows consumers to have higher loyalty to the service than provided by fitness club. However, experience attribute was not significant related to consumer predicting loyalty, which suggests that whether consumers contact with the service provider through email or personal contact does not influence consumer predicting loyalty on personalized nutrition service.

Table 7. Summary of hypothesis testing

Hypothesis	Results	Explanation
<i>H1</i>	No support	Search attribute does not have the most influence in initial uptake. Main effects of three attributes were not significant, but there was a trend of the interaction between experience attribute and credence attribute influencing consumer initial uptake.
<i>H2</i>	Limited support	Trends have been found that the effect of experience attribute, and the interaction of the three attributes influence consumer anticipated satisfaction. Experience attribute influences more than search and credence attribute on consumer anticipated satisfaction.
<i>H3</i>	Partial support	Credence attribute is strongly significant to consumer loyalty, but experience attribute is not significant.

According to the result of the thesis (Table 6), service attributes influence differently in the process of consumer adoption of personalized nutrition service. In consumer predicting loyalty, credence attribute (service provider) has a significant influence. When people believe in reliability, safety and honesty of the provider, the feeling of trusts may increase consumer loyalty, commitment and repurchase intention (Lodorfos et al., 2006; Mosavi & Ghaedi, 2012). As personalized nutrition service is relatively new to consumers, the intangibility of service increases consumer perceived risk, which consumers feel in the innovation adoption process (Lee, 2012). Therefore, when a consumer trusts the provider of the service, it might reduce consumer risk aversion of this new service, which leads consumers to be loyal to the service.

It has been found from the result of the thesis that consumer prefer dietitian through employer over dietitian through fitness club as advice provider. This might be the factor influencing consumers' belief of the success of the personalized nutrition service. The success of the service also depends as well from the consumer if he or she is able to follow the advices; therefore, they trust that the service provider can help them keep following the advice and to reach healthier lifestyle. Comparing to the fitness club, personalized nutrition service provided by the employer might be more obligatory for consumers, for example, people might be afraid of losing job if they donot follow the health program, which can actually help them stick to their healthy behavior. Employers can easily use intervention strategy to promote employee to have habits in buying health-related products and services, and make them have healthful behavior consists of routines that are embedded in social practices (van Woerkum & Bouwman, 2009), which makes consumers having habits in buying are more likely to buy personalized nutrition service, and repurchase it. On the contrary, with the fitness club, consumers might not be motivated since no one will actually push them to stick to the advice.

Communication channel between consumers and service provider has been selected as the experience attribute of personalized nutrition service in the thesis. Experience attribute has a tendency to link with consumer satisfaction based on the result from hypothesis 2, and better consumer satisfaction can lead to better consumer loyalty. However, there is no direct relationship between experience attribute and loyalty, and we did not find correlations between experience attribute with consumer predicting loyalty. Furthermore, satisfaction is not the only factor influencing loyalty. Therefore, it is not significant between experience attribute and predicting loyalty in hypothesis 3. The result of the thesis also implies that participants preferred to communicate with dietitians through personal contact over email, which were aligned with the former report of Berezowska et al. (2012). Personal contact is considered more trustworthy, flexible, and efficient way of communication, and as consumers use heuristic information that is available to them to evaluate the satisfaction of the service (Mitra et al.,1999), personal contact can be seen as an heuristic cue for consumer to have better anticipated satisfaction on personalized nutrition service. Having a positive correlation between initial uptake, anticipated satisfaction and predicting loyalty might imply that consumers probably choose products in the anticipation of being

satisfied and loyal. If consumers think that they would not be satisfied with a product they probably would not buy it.

When considering the service attributes individually, consumers prefer employer as service provider to keep them loyal to the service, and are more satisfied with the advice communicating through personal contact. However, the consumer preferences change with the interactions between service attributes. The interaction between experience attribute (communication channel: personal contact vs. email), and credence attribute (service provider: employer vs. fitness club) has been found a tendency to influence consumers' initial uptake of personalized nutrition service, and the interaction between the three service attributes also has been found a tendency to influence consumer anticipated satisfaction. The results shows that it is important that at the frequency of providing tailored advice once every three months, the dietitian through fitness club should not use e-mail to communicate with their customers.

The interaction effect of experience and credence attributes have influences on consumer initial uptake might be the factor for consumer's judgment of the success of the service, influencing consumer's initial uptake. In addition, experience and credence attributes have been linked with consumer interest (Paswan, 2004), which is also linked to the result that the more participants are interested in buying health-related products and services, the more they are likely to choose personalized nutrition service. The possible explanations of the importance of having personal contact with the dietitian when the service is provided by fitness club might be that people might think that personal contact from the fitness club has the obligatory force for them to go exercise at least once every three months, it is more trustworthy to meet the dietitian via personal contact with than emails contact, which emails are easy to ignore as the subscription letters or advertisements from the business that they would not read it if they receive the advice once every three months, and consumer would think that it is easier to reach a healthier lifestyle through personalized nutrition service with this interaction. However, we did not find the evidence of the possible explanations above from this thesis. For the future study, we recommend qualitative research (e.g. interviews) to create better understandings of consumers' motivations and perceptions.

There might be service attributes which are even more important for consumers though the service attributes have been extracted from Berezowska et al.'s Consumer acceptance report (2012), classified into search, experience and credence attributes based on literature reviews, and tested in pilot study that are influential in consumer initial uptake. There were many uncertain factors for participants to evaluate the service; for example, how accurate the service will be as to the analyzing the personal data, how the interactions with the nutritionist or the general ambiance in this fitness center will be, and to what extent the service would help to reach a healthy diet. How successful the program will be, and how much the likely costs of the service were mentioned many times as a main factors for their decisions from the participants' feedback. The results of the service, which if it is successful or if it works, might be the most important factor for consumers initial uptake, according to the remarks from the participants.

The price of the service was also mentioned by participants as an influential factor for buying decision. Due to the intangibility of the service, participants had difficulties to evaluate the benefits before using the service. Price is most apparent that consumer can perceive and evaluate among the burdens related to a new service (Lee, 2012). The price of the service can significantly influence perceptions of quality (Nguyen, 2012), which might influence consumers' evaluations of price fairness for their choice of personalized nutrition service. In addition, the participants of the survey were mainly students from Wageningen University at the average age of 26 years old, which service price might be even more concerned by university student with limited income. Therefore, it might be useful to include price of the service, and willingness to pay for the service in the future research.

As personalized nutrition service is relatively new for consumers, consumers might have innovation resistance toward the new service that they are not familiar with. According to Rogers' Diffusion of Innovation Theory (1962), the majority of people would like to wait for a while to observe how the service will go, and decide slowly for the adoption. Furthermore, participants rated initial uptake for personalized nutrition service low because they might simply not see the need for personalized nutrition service for themselves. Participants who did not believe that personalized nutrition services can help them reach a healthier lifestyle, or who were not interested

in buying health-related products or services, would not choose personalized nutrition services. Therefore, it does not matter what attributes were included in the services, people who have negative attitude toward personalized nutrition services might not choose to purchase the service at all.

In addition, participants did not know if they would like to try the service or not in the hypothetical situation of the personalized nutrition service might be the reason for insignificant attributes with the mean around 4 in the 7-point Likert-type scale. The description of the service, which is relatively new concept for participants, might not be concrete enough for them to evaluate before they really try the service even though the scenarios have been tested in the pilot study of the thesis. They were neither against the service nor being fans of it. Participants might have difficulties to understand what exactly the service is about, and to evaluate if they would like to try the service because of the lack of the knowledge about the service, and hence, to have no preference for the attributes, neither positive nor negative feelings toward the service and put neutral ratings for the initial uptake of the personalized nutrition service. In order to make consumers in a real situation, for the future research or implications, it might be better to have field studies after developing a personalized nutrition service for consumers to have the real experiences of the service.

This thesis provides new insights and has specific implications for consumer adoption of personalized nutrition service. We provided proof that different service attributes play different roles in the stages of adoption process: experience attribute influences more than search and credence attributes in consumer anticipated satisfaction, and credence attribute influence more than other attributes for consumer predicting loyalty, though the current study did not confirm if loyalty could be predicted before service adoption, and there has been no evidence that search attribute influences the most in the consumer initial uptake. The findings can help service providers to put different emphasis on attributes in the different stages of personalized nutrition service adoption to promote the service more efficiently; for example, at the frequency of providing tailored advice once every three months, the dietitian through fitness club should not use e-mail to communicate with their customers, which to achieve the goal of increasing the service adoption and improve public health.

These thesis findings also provide new direction for further research. First, greater in-depth qualitative research of interview is needed for better understandings of the relationships between employer and consumer loyalty, and the reasons why consumers prefer personal contact when having the service provided by fitness club. Second, a wider range of variable, such as service attribute and other factors influencing consumer adoption should be included in the future research. For example, price of the service and consumer willingness to pay for the service. Third, field studies are required after developing a personalized nutrition service for consumers to have the real experiences of the service to make the research more to the reality. Finally, future researchers should attempt to make the results more generalizable by using additional samples and different the services on the research of relationship between service attributes and the process of service adoption: initial uptake, satisfaction, and loyalty.

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Appendices

Appendix 1- Questionnaire- Pilot Study

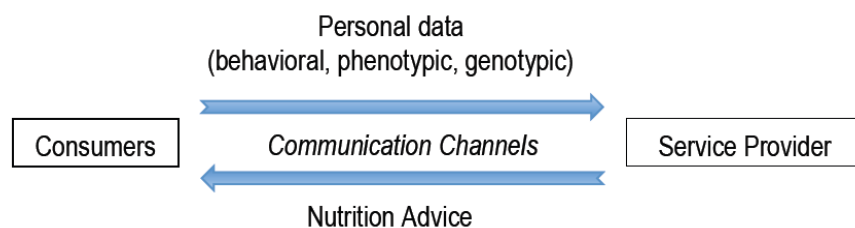
Dear participant,

Thank you for taking the time to fill in this questionnaire with regard to your views on personalized nutrition service.

This survey is part of a research conducted for my Master Thesis at the Wageningen University. It consists of 2 parts, and will take you approximately 10 minutes to complete. There are no correct or incorrect answers, and all your answers will be kept completely anonymous. **Please read carefully, and make sure that you fill in the questionnaire completely.**

Thank you in advance!

Before you start answering the questions, we would like to draw your attention to the definition of personalized nutrition service: **a service that provides healthy eating advice tailored to suit an individual, which is based on his/her own health status, lifestyle and/or genetics.** The mechanism of the service is that consumers provide their personal data (behavioral data: eating & exercise habit, phenotypic data: blood chemistry, or genotypic data: DNA) to the service provider through communication channels. Then, the service provider convincingly links your personal data to nutrition knowledge, and based on that, delivers the specific nutritional advice to the consumers.



Q1. Please give your position on the following statement.

When you are thinking of engaging in a personalized nutrition service, how important would the following service features be for your final choice?

	1 <i>Not at all important</i>	2 <i>Unimportant</i>	3 <i>Moderately unimportant</i>	4 <i>Neutral</i>	5 <i>Moderately important</i>	6 <i>Important</i>	7 <i>Extremely important</i>
How often you get advice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How you communicate with the service provider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What data you give to the service provider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who the service provider is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2. Please give your position on the following statement.

I think the nutrition advice should be provided

	1 <i>Strongly disagree</i>	2 <i>Disagree</i>	3 <i>Somewhat disagree</i>	4 <i>Neither agree nor disagree</i>	5 <i>Somewhat agree</i>	6 <i>Agree</i>	7 <i>Strongly agree</i>
Once only	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Once per 3 months	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Once per 2 weeks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3. Please indicate the extent to which you would prefer personalized nutrition service to be provided through the following communication channels:

	1 <i>Not at all</i>	2 <i>Slightly</i>	3 <i>Moderately</i>	4 <i>Very</i>	5 <i>Extremely</i>
Personal meeting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4. Please indicate the extent to which you would prefer the following people or organizations to provide a personalized nutrition service:

	1 <i>Not at all</i>	2 <i>Slightly</i>	3 <i>Moderately</i>	4 <i>Very</i>	5 <i>Extremely</i>
Dietitian/ Nutritionist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fitness clubs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employers of your work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In the second part of the survey, we ask you to read a short text, and then answer several questions related to personalized nutrition service.

Please read the following text very carefully!

Imagine that you have graduated for two years, and have a steady income to afford health product. You want to reach a healthier lifestyle, and are considering about the service described below:

Our personalized nutrition service is provided **through the fitness club**, and it can help you reach a healthier lifestyle under the supervision of **the dietician**. In **personal meetings**, we will provide you with a diet plan, an exercise plan and a shopping list after you give us your personal data. Our advice will be based on the analysis of your physiological measures (e.g. the body mass index (BMI), blood pressure, cholesterol levels); behavioral data (e.g. lifestyle, eating or exercise habit); or genotypic data by using DNA profiling techniques. You will **meet our dietician once every two weeks** to measure your progress to give you an update of advice, and to help you keep up the good work.

Q5. Based on the service description above, if you intend to buy this service, please circle the words or sentences in the text above that you are based for the buying decision.

Q6. Based on the service description above, please indicate the extent to which you agree or disagree with the following statements:

	1 <i>Strongly disagree</i>	2 <i>Disagree</i>	3 <i>Somewhat disagree</i>	4 <i>Neither agree nor disagree</i>	5 <i>Somewhat agree</i>	6 <i>Agree</i>	7 <i>Strongly agree</i>
I will go for this service again after using it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I will get tired of using this service after a while.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will recommend this service to my friends and family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am likely to make negative comments about this service to my friends and family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If the service were to raise the price of its services, I will still continue to be a customer of this service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to repurchase this service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think of myself will be as a loyal buyer of this service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7. How easy or difficult for you to answer the questions above, only based on the service description above.

1 <i>Very difficult</i>	2 <i>Difficult</i>	3 <i>Somewhat difficult</i>	4 <i>Neutral</i>	5 <i>Somewhat easy</i>	6 <i>Easy</i>	7 <i>Very easy</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This is the last part of the questionnaire. In this section we are looking for some basic information about you.

Q8. What is your current age?

Q9. What is your gender?

- ☐ Male
- ☐ Female

Q10. What is your current study program?

Q11. What is your nationality?

Q12. Please indicate the extent to which you agree or disagree with the following statements:

	1	2	3	4	5	6	7
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Somewhat disagree</i>	<i>Neither agree nor disagree</i>	<i>Somewhat agree</i>	<i>Agree</i>	<i>Strongly agree</i>
I think personalized nutrition service can help me reach a healthier lifestyle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13. How healthy do you consider yourself?

1	2	3	4	5	6	7
<i>Very unhealthy</i>	<i>Unhealthy</i>	<i>Somewhat unhealthy</i>	<i>Neutral</i>	<i>Somewhat healthy</i>	<i>Healthy</i>	<i>Very healthy</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Debriefing

The aim of the study is to study consumers' intention to adopt personalized nutrition service by understanding consumer's demands on the service in different stages of adoption: initial uptake, satisfaction and loyalty.

If you have any further questions, please feel free to ask the experimenter present. It would be highly appreciated if you do not share the purpose of the study with other students, so that they can participate as well.

Thank you very much for your participation!

Appendix 2- Questionnaire- Main Study

Dear participant,

Thank you for taking the time to fill in this questionnaire with regard to your views on personalized nutrition services.

This survey is part of a research conducted for my Master Thesis at the Wageningen University. It will take you approximately 10 minutes to complete. There are no correct or incorrect answers, and all your answers will be kept completely anonymous.

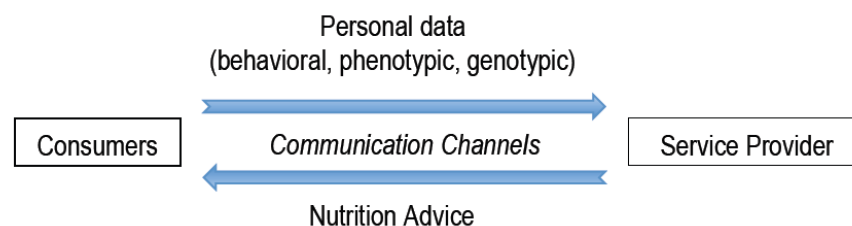
Please read carefully, and make sure that you fill in the questionnaire completely.

Thank you in advance!

Before you start answering the questions, I would like to draw your attention to the definition of a personalized nutrition service, which is **a service that provides healthy eating advice tailored to suit an individual based on his/her own health status and lifestyle.**

The way in which a personalized nutrition service works is as follows:

First, consumers have to provide their personal data (e.g. dietary intake, blood properties) to a personalized nutrition service through a communication channel. Then the provider of the personalized nutrition service has to generate personalized nutrition advice on the basis of the received data. Finally, the generated advice has to be communicated to the consumers.



In the survey, you are asked to **read a short description of a personalized nutrition service**, and then answer several statements related to the description you have read. For each of the statements, indicate the degree to which you agree or disagree with it by clicking on the bar below and choosing the option that best describes your opinion. For example:

I plan on buying this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please read each question carefully, and answer as honestly as possible.

Scenarios

Imagine that you have graduated for two years, and have a steady income to afford health products. You want to reach a healthier lifestyle, and are considering about the service described below:

Scenario 1-8 of Personalized nutrition service

Listed at the end of the Appendix 2 (pp.49)

(The description of this personalized nutrition service will be repeated at the top of each page.)

Please indicate to what extent you agree or disagree with the following statements.

1. I intend to try this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. I am interested in seeing how the service works on me.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. I plan on buying this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. It is likely that I will buy this service when it becomes available.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. I would consider purchasing this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please express your views regarding the personalized nutrition service described above on the following scales.

6. After purchasing the service described above, I would:

be very dissatisfied.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	be very satisfied.
be very unhappy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	be very happy.
feel very bad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	feel very good.
think I did not do the right thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	think I did the right thing.
think I was unwise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	think I was wise.

Please indicate to what extent you agree or disagree with the following statements.

7. I will go for this service again after using it.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. I think I will get tired of using this service after a while.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. I will recommend this service to my friends and family.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. I am likely to make negative comments about this service to my friends and family.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. If the service were to raise the price of its services, I will still continue to be a customer of this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. I intend to repurchase this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. I think I will be a loyal buyer of this service.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Demographic data

14. What is your current age in years? (please use numbers)

15. What is your gender?

- ☐ Male
☐ Female

16. What is your current study program?

17. What is your nationality?

18. How healthy do you consider yourself?

- Very unhealthy Unhealthy Somewhat unhealthy Neutral Somewhat healthy Healthy Very healthy
- ☐ ☐ ☐ ☐ ☐ ☐ ☐

19. Have you heard of personalized nutrition services?

- ☐ Yes
☐ No

20. Please indicate the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I think personalized nutrition services can help me reach a healthier lifestyle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am interested in buying health-related products or services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am always interested in health-related issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. In this box, you can post any remarks or comments on this survey you want to share with us.

This is the end of the survey.

Thank you very much for your participation!

List of Scenarios

Scenario 1

*Our personalized nutrition service is provided **through our fitness club**, and helps you to reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data in a personal meeting**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **once every three months during personal meetings**.*

Scenario 2

*Our personalized nutrition service is provided **through your employer**, and helps you to reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data in a personal meeting**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **once every three months during personal meetings**.*

Scenario 3

*Our personalized nutrition service is provided **through our fitness club**, and helps you reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data through email**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **once every three months by means of email**.*

Scenario 4

*Our personalized nutrition service is provided **through your employer**, and helps you to reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data through email**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **once every three months by means of email**.*

Scenario 5

*Our personalized nutrition service is provided **through our fitness club**, and helps you reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data in a personal meeting**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **only once during a personal meeting**.*

Scenario 6

*Our personalized nutrition service is provided **through your employer**, and helps you to reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data in a personal meeting**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **only once during a personal meeting**.*

Scenario 7

*Our personalized nutrition service is provided **through our fitness club**, and helps you reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data through email**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **only once by means of email**.*

Scenario 8

*Our personalized nutrition service is provided **through your employer**, and helps you to reach a healthier lifestyle under the supervision of a **dietitian**.*

*After you have provided us with your **personal data through email**, we will be able to generate a dietary advice specifically tailored to you. Besides the dietary advice, we will provide you with an exercise plan and a shopping list.*

*The dietary advice, exercise plan and shopping list are provided **only once by means of email**.*