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**Abstract**

Professional athletes are expected to follow a strict diet with specific nutritional guidelines, and their food choices are typically formed to maximize their athletic performance. With the new era of sustainable eating, where plant-based food choices have become a norm for many consumers, athletes' have also gotten new complexities to consider while making their food choices. The aim of this research is to explore why professional athletes consume sustainable, plant-based food, by exploring the different values, food choice motives and intrinsic- and extrinsic motivations which reflect on athletes' motives to make sustainable food choices.

Food choices are complex decisions, which include the decisions of when, what, with whom, and how to consume, and the decisions are influenced by the life course and previous experiences of consumers, as well as personal values and motivations. Consumers' personal values, such as benevolence, universalism and stimulation, act as the abstract guidelines for consumers to make certain food choices. Besides, the food choice motives, including price, taste, convenience, and health, are considered as more practical motives that influence consumers' food choices. However, with the consumer group of professional athletes, the intrinsic motivations that aim to maximize athletic performance, influences athletes' food choices depending on their personal goals and timing of the season. In addition to intrinsic motivations, the extrinsic motivations also affect the athletes' food choices in certain situations. However, the external motivations are not based on the athlete's own motivation, and those often arise due to pressure, instructions, knowledge, or support from external sources of friends, family, or coaches.

The research was conducted as qualitative research of semi-structured interviews, including professional athletes as study participants from different sports fields. The study's findings suggest that athletes are concerned about the health- and environmental factors that their diet and consumption patterns contribute to the outside world. The main motives that reflect on their food choices are taste, price, and convenience. Remarkably, the motive of convenience is particularly influential for athletes, which often leads professional athletes to favor food products that are easy and quick to prepare and fit well into their busy training schedules. Athletes would be motivated to make more sustainable food choices if it would positively contribute to their athletic performance, and if their friends or partners would also eat similarly. However, the lack of knowledge on sustainability matters acts as a barrier to make food choices that support both: sustainability of the earth and athletic performance, which could be an interesting topic for future research.

Key words	sustainable food choice, plant-based, personal values, food choice motive, intrinsic motivation, extrinsic motivation
Further information	





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### Tiivistelmä

Ammattiurheilijoiden odotetaan syövän terveellistä ruokaa tarkan ruokavalion mukaisesti, ja heidän ruokavalionsa on tyypillisesti muodostettu tukemaan maksimaalista suorituskykyä. Kuitenkin, kestävästä syömisestä ja kasvipohjaisista ruokavalinnoista on tullut kuluttajien uusi normi, ja urheilijatkin ovat alkaneet pohtimaan uusia näkökulmia tekemässään ruokavalintoja, jotka ottavat huomioon ruoan kestävyuden, sekä urheilun suorituskyvyn maksimoinnin. Tämän tutkimuksen tarkoitus on tutkia ammattiurheilijoiden motiiveja syödä kestävä ruokaa, ja tutkia heidän arvojen, sekä sisäisten- ja ulkoisten motivaatiotekijöiden vaikutusta ammattiurheilijoiden kestäviin ja kasvipohjaisiin ruokavalintoihin.

Urheilijoiden ruokavalinnat ovat monimutkaisia päätöksiä, joihin sisältyvä päätökset milloin, mitä, kenen kanssa ja miten kuluttajat syövät ruokaa. Lisäksi päätöksiin vaikuttavat urheilijoiden elämäntapa ja aiemmat kokemukset ruoasta, sekä henkilökohtaiset arvot ja motivaatiot. Kuluttajien henkilökohtaiset arvot, kuten hyväntahtoisuus, universalismi ja stimulaatio, toimivat abstrakteina ohjenuorina kuluttajien ruokavalintoihin ja ruokavalioon. Lisäksi ruoan valintaan liittyviä motiiveja, kuten hintaa, makua, helppoutta ja terveyttä, pidetään käytännöllisempinä motiiveina, jotka vaikuttavat kuluttajien ostopäätöksiin ja ruokavalintoihin. Ammattiurheilijoiden luontaiset sisäiset motivaatiot, joihin kuuluu mm. pyrkimys maksimoida urheilullinen suorituskyky, vaikuttavat urheilijoiden ruokavalintoihin, riippuen urheilijan tavoitteista ja kilpailukauden ajankohdasta. Sisäisten motivaatioiden lisäksi myös ulkoiset motivaatiot vaikuttavat urheilijoiden ruokavalintoihin tietyissä tilanteissa. Ulkoiset motivaatiot eivät kuitenkaan perustu urheilijan omaan motivaatioon, ja ne ovat lähtöisin esimerkiksi ystävien, perheen tai valmentajien olemassaolosta, painostuksesta, ohjeistuksesta, tiedonannosta tai tuesta.

Tutkimus tehtiin laadullisena tutkimuksena puolistrukturoituna haastatteluina, ja tutkimukseen osallistui eri lajien ammattiurheilijoita. Tutkimustulokset viittaavat siihen, että urheilijat ovat huolissaan terveys- ja ympäristötekijöistä, joihin heidän ruokavalionsa ja kulutustottumuksensa vaikuttavat. Tärkeimmät ruoanvalintamotiivit, jotka heijastavat heidän ruokavalintojaan, ovat maku, hinta ja helppous. Erityisesti helppous on vaikuttava motiivi urheilijoille, mikä saa heidät usein suosimaan helposti ja nopeasti valmistettavia ruokia, jotka sopivat heidän kiireiseen harjoittelu- ja kilpailuohjelmaansa. Urheilijat olisivat motivoituneita tekemään kestävämpiä ruokavalintoja, jos se edistäisi positiivisesti myös heidän urheilullista suorituskykyään, ja jos heidän ystävänsä tai kumppaninsa söisivät vastaavia ruokia. Yksi tärkeimmistä tutkimustuloksista oli tiedon puute ruoan kestävyysasioista, mikä on usein este sellaisten ruokavalintojen tekemiselle, jotka tukevat niin maapallon kestävyyttä, kuin urheilullista suorituskykyä.

Asiasanat	kestävä ruokavalinta, kasvipohjainen, sisäinen motivaatio, ulkoinen motivaatio, henkilökohtaiset arvot, ruoanvalintamotiivi
Muita tietoja	





**UNIVERSITY  
OF TURKU**

Turku School of  
Economics

# **THE MOTIVES OF PROFESSIONAL ATHLETES TO CONSUME SUSTAINABLE, PLANT-BASED FOOD**

**Contribution of personal values, intrinsic-, and extrinsic  
motivations to food choices**

Master's Thesis  
in International Business

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# 1 INTRODUCTION

The following chapter introduces the background of the research topic and the study phenomenon. Additionally, this chapter introduces the gaps in the current knowledge, the purpose of the research, and the research- and sub-questions. Lastly, the scope and the structure of the thesis are presented within the chapter.

## 1.1 The rising interest towards sustainable food consumption

It is estimated that individuals make approximately 220 food choice decisions daily based on a mixture of various motives, extrinsic-, and intrinsic factors (Wansink & Sobal 2006; Birkenhead & Slater 2015, 1511). Moreover, according to previous research, the food choices are known to be influenced by the food choice motives of health, mood, convenience, sensory appeal, natural content, and price (Steptoe, Pollard, & Wardle 1995, 280-282). Besides, humans' fundamental values have been linked to consumers' food choice behavior, where consumers buy foods based on the things they consider important for themselves, for instance to receive excitement, self-fulfillment, or sense of belonging (Hauser et al. 2013, 766). However, during recent years, there has been a growing concern on how to feed the growing population of the world in a sustainable way, which has led an increasing number of consumers to consider sustainability aspects while making food choices (Vermeir & Verbeke 2007, 542). Therefore, consumers are not only considering their individual food preferences while consuming food, but the environmental- and ethical aspects have become essential aspects while constructing their food choices.

Besides the concern for environment, consumers have become more aware of the agricultural food production's environmental and health impacts, which has turned an increasing number of consumers to favor sustainable foods (Lehikoinen & Salonen 2019, 9-11). Sustainability is a broad term, combining various environmental concerns, fair-trade- and ethical aspects: for instance, environmental concerns related to transportation, packaging and greenhouse gas emissions, and ethical- and fair-trade concerns related animal testing, ethical working conditions and fair price for goods are all dimensions of

sustainability (Ulvila 2018, 31). The Food and Agriculture Organization (FAO 2010) explains the concept of a sustainable diet as follows:

*"Sustainable diets are those diets with low environmental impacts that contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable, nutritionally adequate, safe, and healthy, while optimizing natural and human resources."*

Consequently, a sustainable diet aims to maximize the use of fresh, plant-based, and locally produced foods (Wyker & Davison 2010, 170), and to limit the use of animal source foods (e.g., foods that come from an animal source, including meat, chicken, fish, eggs, and milk). Although consumers have typically been eating in a meat-centric way, it has been suggested that the high consumption of animal source foods is not the most prominent way to eat anymore (Kälkälä 2020, 6). Moreover, according to Finnish research on food consumption, the consumption of meat followed a downward trend in 2020, where consumers reduced their meat consumption by 1.5 kilograms compared to the year before (HS 2020). This is a significant turning point, since the consumption of meat has typically been increasing evenly from year after year (YLE 2019). Besides, the Finnish population's nutritional recommendations have changed along with the shift towards a more sustainable diet, where nowadays, sustainable diets and plant-based foods are widely recommended and seen applicable for all kinds of individuals, regardless of their age, gender, or other demographical factors, which in turn has increased the consumption of sustainable foods (Kälkälä 2020, 6).

## **1.2 Research gap and purpose of the study**

Despite the numerous studies on motives for food choices of the general population (Peter & Olson 2002; Verbeke & Vackier 2004; Rozin et al. 1999), only a few researches have been focusing on motives of athletes (Smart & Bisogni 2001; Rodriguez et al. 2009; Long et al. 2011; Thurecht & Pelly 2019). Moreover the nature of professional sports requires

athletes to follow specific nutritional guidelines, which typically leads them to make the most frequent and appropriate food choices for themselves, without considering the influence that their consumption patterns contribute to the outside world (Pelly & Thurecht 2019, 11-13). Therefore, the motives, requirements, and how professional athletes form their food choices are considered different from the general population or ethical consumers, which is a topic worth of further investigation.

In addition to the common food choice motives, there are even more motives to consider for a consumer group of professional athletes, whose food choices are typically motivated by various intrinsic and extrinsic factors that aim to maximize their athletic performance (Long et al. 2011; Pelly et al. 2018; Smart & Bisogni, 2001). Previous research has argued that the main factors that influences athletes' food choices include performance-related motives, existence of resources (e.g., cooking skills, knowledge, ability to plan foods), influence of external sources (e.g., friends, family, coaches, and media), and their personal values and food choice motives (e.g., weight and health control, taste, convenience, mood) (Thurecht & Pelly 2019). The motives could be further divided into two main sections of intrinsic and extrinsic motivations: the previous one refers to engaging in behavior for the sake of doing it for oneself, whereas the latter one refers to outside motivation, such as earning a reward or engaging in action to please others (Amorose & Horn 2000, 63). Research have argued that intrinsic motivations, including maximized athletic performance, maintaining a proper weight, and staying healthy, are among the key factors that influence athletes' food choices and overall diet (Smart & Bisogni 2001; Long et al. 2011; Thurecht & Pelly 2019). Besides, the extrinsic motivations of athletes, such as pressure from family, friends, coaches, or media, have also been suggested to have an influence on their food choices (Thurecht & Pelly 2019). Therefore, professional athletes' food choices are complex decisions that include various dimensions - including personal values, and intrinsic- and extrinsic motivations - that intercorrelate with one another (Birkenhead & Slater 2015, 1517-1518).

Like discussed within the previous chapter, an increasing number of consumers have started to favor sustainable foods (Niva et al. 2014, 478-479), and it has been suggested that athletes' food choices are likely to follow a similar trend (Pelly & Burkhart 2014). Therefore, with the new era of sustainable eating and plant-based diets, athletes have gotten even more complexities to consider while making food choices (Lockie et al. 2004; 2002; Tobler et al. 2011). Although sports nutritionists have typically encouraged athletes

to follow a personalized eating plan to maximize their athletic performance (Thomas et al. 2016, 561), it is yet unknown whether the current demand for sustainable consumption has influenced athlete's motives to eat in a way that supports both, optimized performance and planetary health.

Consequently, this research aims to explore why professional athletes consume sustainable, plant-based food. Therefore, the study's research question is as follows: Why do professional athletes consume sustainable, plant-based food?

The sub-problems of the study are formed as:

- 1) How do athletes' values shape their consumption patterns?
- 2) How do the intrinsic motivations contribute to athletes' sustainable food choices?
- 3) How do the extrinsic motivations reflect on athletes' sustainable food choices?

Although it is known how the values, intrinsic and extrinsic motivations influence athletes' food choices (Smart & Bisogni 2001; Long et al. 2011), the motives that influence them to eat sustainable food is an area that requires more research. A research review investigating athletes' food choices supported the fact that there is a lack of research within the consumer group of athletes, which further suggested that further research should be made to consider the other various factors influencing their food choices (Birkenhead & Slater 2015, 1517-1518). Therefore, the research topic of exploring athletes' motives for food choices, and the sub-problems on how the combination of different factors - including personal values, intrinsic motivations, and extrinsic motivations - all influence athletes to make sustainable, plant-based food choices is worthy of further investigation (Birkenhead & Slater 2015; Garai-Fodor 2019, Lehtikoinen & Salonen 2018).

The consumer group of professional athletes is chosen to understand how they consider sustainability aspects while constructing food choices. Most of the existing studies on the athletes' motives for food choices have focused on eating behaviors or nutritional knowledge of centered athletic groups, such as young athletes or female athletes with eating disorders (Smart & Bisogni 2001; Long et al. 2011; Anderson & Petrie 2011). Therefore, further investigation should be made to focus on the motives for food choices

of a consumer group of professional athletes, without limiting the group by demographical factors (Long et al. 2011; Smart & Bisogni 2001). In particular, the professional athletes from Finland are chosen as the sample for this research since, in general, Finnish athletes are expected to have a broad understanding and a great knowledge base on nutrition and sustainability-factors due to the high-quality education system. Besides, the consumption of sustainable food has been increasing over the past few years in Finland, which further suggests that Finnish professional athletes have previously consumed sustainable, plant-based foods, which further justifies the selection of the studied sample group.

The research topic is significant and timely for a couple of reasons. Firstly, understanding athletes' food-related needs can provide insights into consumer preferences, and decision-making processes and further help understand why consumers prioritize and value different product attributes over another. Moreover, finding out the motives to consume sustainable food could bring valuable information for businesses within the industry and could potentially revolutionize the consumption patterns of athletes and health-conscious people, which directly influences firms, the health system, and possibly the health of the planet. Secondly, sustainable food consumption has been increasing over the past years, which has forced food companies to create new sustainable products and services. Moreover, new plant-based food innovations are introduced to the markets frequently (such as Finnish innovations Nyhtökaura, Härkis, and Boltsi), and there are more plant-based food products available now than ever before. Additionally, during the recent years, new documentaries have been released on plant-based athletes and the possible relationship between a plant-based diet and athletic performance (e.g., the Game Changers, Netflix 2018), which could have altered the food choice motives of professional athletes, and increase their plant-based food consumption.

It is important to note that this study does not explore the motives for veganism but focuses on finding out the motives for sustainable, plant-based food choices. Therefore, plant-based food choices should not be mistaken for vegan or vegetarian diets. While discussing about the plant-based diets, it is referred to as mainly consuming foods that are primarily derived from plants, but not entirely eliminating the consumption of animal-source foods. Besides, plant-based diets are often adapted due to health motives, whereas vegetarian and vegan diets are often adapted due to ethical or religious concerns. (Tuso et al. 2013, 62.)

Additionally, while referring to sustainable, plant-based foods, it is important to disclaim that plant-based-foods and sustainable foods are not identical. This further means that not all plant-based foods are sustainable, and not all sustainable foods are plant-based. Although a sustainable diet does not automatically mean that the diet is plant-based, previous research has considered a high consumption of plant-based foods as a part of a sustainable diet (Vainio et al. 2016, 97). Therefore, this research considers sustainability and plant-based foods as common phenomena, and from this point on, the term "sustainable food choice" is considered both: sustainable in terms of ethical aspects, and plant-based in terms of food content.

Lastly, it is essential to note the difference between few definitions. The food aspects of price, taste, convenience, health, managing relationships and weight are referred to as *food choice motives* from this point on. On the other hand, while discussing about *motives for food choices*, this definition comprises all the different motives, including values, intrinsic- and extrinsic motivations, that influence athletes' food choices.

This thesis is structured in the following way: The first chapter introduced the topic, discussed the research gap and purpose for the study, and justified the research questions. The next chapter of theoretical background highlights the previous literature regarding the topic and explores the theoretical framework, including consumer behavior, consumer values, and intrinsic and extrinsic motivations. At the end of the theoretical background, the theory is summarized by illustrating how different concepts are connected. The third chapter of research methodology explains the reasonings for choosing the research methodology and presents the study participants. Besides, the data analysis and evaluation of data are described to enhance the research's trustworthiness. Following the research methodology, the study's empirical findings are presented, which explores the data from the interviews and the conclusions of the research. Lastly, the discussion section suggest the study's theoretical and practical contributions and limitations and room for future research. The final section of this paper presents the summary and references used for the research.

## **2 FACTORS INFLUENCING FOOD BEHAVIOR**

The theoretical background begins with a chapter on food choice construction, explaining the food choice process model. Secondly, the relationship between values and consumer behavior is described, which defines personal values and value theory. Then, the contribution of values to sustainable consumption and how values are connected to food choice motives are explained. Afterward, the theoretical section continues with a chapter of athletes' food choice motives, where firstly, the typical food choice motives are discussed, followed by a chapter of sustainable motives. Moreover, the intrinsic and extrinsic motivations that influence food choices are discussed within the later sub-chapters. Lastly, the theoretical section is concluded with the synthesis of theory, which leads to the study's research problem.

### **2.1 The construction of a food choice**

Food choice is a selection and consumption of foods and beverages regarding when, what, how, where, and with whom to consume (Stepherd & Raats 2006, 1). Besides, individuals' food choices are influenced by various factors, including behavioral-, psychological-, biological-, economic -, cultural-, social-, geographical-, and environmental influences (Stepherd & Raats 2006, 7). The mental process of constructing a food choice consists of individuals' personal values and food-related motives and relies on those while developing strategies for food selection and purchasing food (Furst et al. 1996, 256-261). Moreover, consumers need to negotiate between their values while making food choices, further meaning that food choices are influenced by individuals' value considerations, and how they weigh their different values while making food choices (Furst et al. 1996, 256). However, the consumer food choice decision process goes far deeper than that, often without consumers' own realization. Therefore, the food choice decision-making goes beyond the surface level, and food choices are complex decisions influenced by various dimensions, including previous experiences, habits learned from childhood, knowledge, and beliefs regarding food. (Devine et al. 1998, 363-367.)

The food choice process model includes three major dimensions that influence the individual's food choice: life course, various intrinsic and extrinsic influences, and the personal food system of values and food choice motives, illustrated in Figure 1 and discussed below.

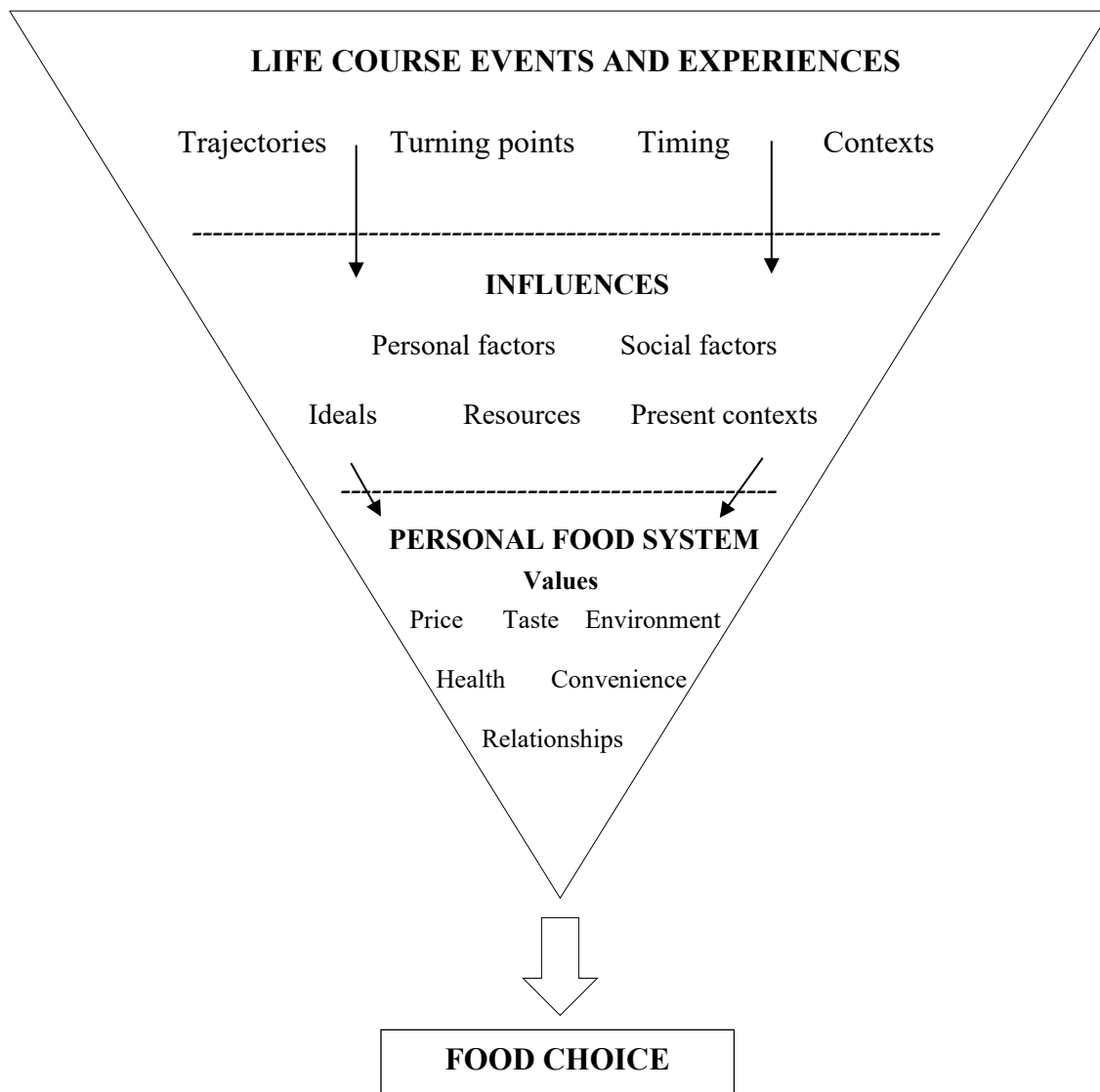


Figure 1 The food choice process model (adapted from Furst et al. 1996)

The *life course* dimension involves all the events and previous experiences that shape the consumers' food choice decisions, also called trajectories (Elder 1985). Moreover, trajectories are the critical life course occasions that influence how people think, feel and act while making food choices and which kind of food choice strategies they form. For



instance, the critical life course occasions of maternity, divorce, marriage, or a family member's death, are suggested to lead to significant reconstructions on an individual's food habits and overall diet. Besides, the life course dimension consists of time, which refers to as different timings in life. Moreover, since food choices depend on individuals' goals and motives regarding health, status and financial sustainability, food choices often change according to individuals' lifetime. (Doucerain & Fellows 2012, 213-214.) Therefore, food choices depend on the temporary factors, as well as the experiences during the different phases of life, including childhood, adolescence, and adulthood, all influence how individuals form their food choices nowadays. (Sobal et al. 2009, 40.)

The second dimension includes various intrinsic and extrinsic influences, such as cultural ideals, individual factors, contexts, social factors, and resources (Furst et al. 1996, 252-256). *Cultural ideals* are habits, rules, and knowledge adopted by a specific group of people, which guide individuals' thoughts of what is considered appropriate and correct way of doing certain things (Sobal 2009, 41). The cultural ideals are originated from cultural and symbolic factors, and they act as norms guiding which kinds of foods are considered as "normal" or "correct" for consumers. However, the cultural ideals are not always considered while consumers make their food choices, since consumers often face the dilemma of having their ideals on appropriate foods, but the reality of following the ideals might be challenging. (Mäkelä 2002.) Therefore, the cultural ideals are not always considered, and the importance of this factor varies heavily among different consumers, depending on how important they hold their cultural values for themselves (Sobal 2009, 41).

*The individual factors* refer to individuals' characteristics, including age, gender as well as individuals' health and nutritional needs (Furst et al. 1996, 253 –254). For instance, previous research has revealed the influence of gender in food choices, where it has been noticed that women make healthier food choices compared to men due to greater health consciousness and nutrient knowledge (Roos et al. 1998). Besides, individual factors include the consumers' perceptions on foods, such as taste preferences, pickiness, and genetic predisposition to diseases. A part of the individual factors is the formation of food identities which gives consumers a change to be unique while constructing food choices, such as "I only eat plant-based" or "I only eat healthy foods", which often change over lifetime. (Sobal 2009, 42.)

Food choices are made independently from one another, depending on the context (Doucerain & Fellows 2012, 209-211). *The context* refers to the broad environment that influences consumers' food choices, including the physical and social environment. The physical environment consists of the material objects, infrastructure, and climate, which affect when and how people can construct their food choices. For instance, the food availability and the selection of foods in grocery stores heavily influence the way consumers can construct their food choices. In contrast, the social environment includes the economic conditions, media, and government policies, which includes all the products, stores, and advertisements that influence the way consumers feel, think or act, which in turn influences their food choices. For instance, if a grocery store sets up a promotional tasting of a particular food product, the environment contributes consumers to purchase the product based on the availability, marketing, and accessibility of the product. (Peter & Olson 2009, 23.) Therefore, the environment and context can also set various limitations that are connected to consumers' food choices, where eating can be marked off at a certain time, the location can restrict eating possibilities, and the time which can be used for eating can set restrictions on consumers' food choices (Helkkola 2013, 15).

*The social factors* consist of the existence, influence and opinions from social relationship of friends, partner and family. In many cases, food choices are not solely an individual decision, but the decisions are made also considering the feelings, beliefs, and demands of other people. Moreover, social factors might cause pressure for individuals to make food choices that they would not make if they would have been alone. Therefore, social relationships can heavily influence food choices, particularly if consumers consider others' needs, opinions, and feelings in front of their own, which will be further discussed within the following chapters (Sobal 2009, 42.)

Lastly, *resources* are the assets that influence food choices, including physical and social resources. Physical resources include factors of income and wealth, whereas social resources refer to intangible resources of knowledge, education, and food preparation skills, which all influence how individuals are able to form their food choices and diet. (Sobal et al. 2006.) Although the physical resources of time and money are considered to be the most influential resources due to their limited nature (Helkkola 2012, 15), the social resources – including consumers' beliefs and perceptions on taste, health-benefits, or convenience of food – are often considered as more influential factors in certain

situations. Particularly, the consumer's knowledge on food, nutrition and certain food products influences consumers' food behavior, and can even act as a barrier to make certain food choices (Peter & Olson 2009, 23). Therefore, it could be suggested that without social resources of knowledge, skills and education, individuals' ability to make food choices becomes more limited and challenging.

The third dimension of the personal food system includes *personal values and food-choice motives*, which influence the food choices consumers make. The personal values are further discussed within the following chapter, and afterwards, the food choice motives of price, taste, convenience, managing relationships, health, and environment are explained in later sub-chapters.

## **2.2 The relationship between values and food consumption**

This chapter outlines the relationship between values and food behavior, firstly explaining the concept of personal values and value theory. Then, the second sub-chapter discusses how personal values are connected to sustainable food consumption. Lastly, this chapter presents how personal values are linked to food choice motives and why previous research often consider those as joint phenomena.

### ***2.2.1 Definition of personal values and value theory***

Within this study, the value theory by Schwartz (1992) - which is developed based on the material collected from more than 60 countries - is used to examine the influence of personal values in food choices. The value theory by Schwartz is presented to be the first theory which clearly highlights how values are connected to one another (Puohiniemi 2006, 10). Therefore, in order to explain how personal values are connected to consumption of sustainable food, the personal values for this thesis are based on the Schwartz's value theory.

Values are commonly described as the ideas and beliefs of humans' which guide how individuals act and behave in certain situations (Schwartz 2012, 3.) Therefore, the factor that separates a value from another value is the goal or motivation it expresses (Schwartz

2012, 4). Besides, one of the core bases of the value theory is that values are consistently ranked by their importance in a hierarchical structure, meaning that humans can only act in favor of one value. Additionally, values are not identical within all life occasions but can vary during different periods. (Sobal & Bisogni 2009, 43) Therefore, the decisions and actions that consumers make in certain situations depend on the values they hold important for themselves, their previous experiences, as well as context. According to the value theory, there are six unique characteristics that are part of each value, which are explained below. (Schwartz 2012, 3-4.):

- *Values are beliefs.* Therefore, values are formed based on individuals' own feelings, and perceptions about different things. For instance, a person who values power, feels uneasy if their power is threatened, helpless if their social status is damaged, and content when they are in charge of themselves or others.
- *Values refer to desirable goals.* Therefore, values are formed based on individuals' own goals and motivations. For instance, a person who considers universalism values important, is also motivated to engage in actions that has a goal of helping others and taking care of the environment.
- *Values transcend specific situations or actions.* This means that values are the core base for human actions in all kinds of situations, regardless of the context. Therefore, this attribute distinguishes values from motivations and attitudes, which depend and change with different contexts.
- *Values serve as standards or criteria.* Therefore, values are formed based on how individuals consider different things in life: which things they consider acceptable, prohibited, good, bad, or worth of doing or avoiding.
- *Values are structured by importance.* This further means that each individual structures their values based on how important they consider the values for themselves. Moreover, values are structured by the hierarchical structure, which influence how individuals make decisions when values are in conflict with each other.

- *The relative importance of multiple values guides action.* Therefore, individuals have multiple values and their actions are typically motivated by more than one value. This further means that based on the relative importance of the combination of multiple values, human behavior and actions are made.

Values are structured and formed similarly across different groups of individuals, further meaning that there is a universal way of developing and structuring values. Schwarz (1994, 21) defines the universality of the values as: "Values represent, in the form of conscious goals, responses to three universal requirements with which all individuals and societies must cope: needs of individuals as biological organisms, requisites of coordinated social interaction, and requirements for the smooth functioning and survival of groups". Based on the three requirements, Schwarz derived ten universal personal values that people from all cultures with different backgrounds recognize. Each of the values represents the central goal, which is the underlying motivator for human actions, presented in table 1.

Table 1 The personal values (Schwartz 2012, 5-7)

Type of value	Values	Goal
Self-direction	Need for control, independence, creativity, curiosity, freedom, and curiosity	Independent through different actions
Stimulation	Need for variety and excitement in life	Excitement in life
Hedonism	Satisfaction, enjoying life, and self-indulgent	Seeking pleasure for oneself
Achievement	Ambition, success, self-respect	Personal success according to social standards
Power	Authority, wealth, social recognition	Receiving and maintaining social status, control over oneself and others
Security	Family, social order, national security, and a sense of belonging	To live in safety and harmony, and to keep stability in society, relationships, and oneself.
Conformity	Politeness, responsibility, loyalty, and respecting other people	Making actions that does not harm or upset others
Tradition	respect for tradition, spiritual life, and being humble and moderate	Actions made with respect, commitment, and with acceptance of other cultures and traditions
Benevolence	kindness and being helpful, loyal, honest, and forgiving	Enhancing the welfare of close people and the need for smooth group functioning
Universalism	Being broadminded, wisdom, equality, nature, social fairness, tolerance, peace and protecting the environment	Understanding and appreciating all people and nature

Previous literature has shown correlations that consumer's personal values are reflected in their consumption behavior (Schwartz 1992; 1994), particularly in ethical, organic, and sustainable consumption (Pinto et al. 2011; Ladhari & Tchegnna 2015; Coppola et al. 2017; Kuswach, Dhir & Sahar 2019). Within the following sub-chapter,

personal values' contribution to sustainable consumption will be discussed, which further explains which personal values are linked to sustainable consumption.

### ***2.2.2 The contribution of values to sustainable food consumption***

Previous research has acknowledged a link between personal values and sustainable food purchase decisions (Thøgersen & Ölander 2002; Hauser et al. 2013). For instance, consumers to whom benevolence is a significant value, are often also concerned about how their consumption patterns affect the others in the supply chain, such as animals or other humans. On the other hand, consumers to whom security is a significant value want to consume foods that do not jeopardize their own health or well-being. (Lusk & Briggeman 2009, 185.) Conversely, consumers who hold hedonism values important, particularly appreciate their food's taste and visual aspects. Besides, consumers to whom the value of stimulation is significant are likely to be excited and willing to try new food products. (Hauser et al. 2013, 766.)

In particular, the values of security, hedonism, stimulation, universalism, benevolence, and self-direction (Schwartz 1992) are linked to consuming sustainable foods (Aertsens et al. 2009). Notably, universalism and benevolence values, such as appreciating and respecting nature, are typical values for consumers who live sustainably or aim to change their consumption patterns towards sustainable direction (Thøgersen & Ölander 2002, 623). Additionally, stimulation and self-direction values, such as being open-minded and searching for variety in life, are positively linked to increase the willingness of consumers to try new, sustainable food products (de Boer et al. 2007, 995). Therefore, it can be concluded that personal values are often linked to consumers' food choice decisions, particularly to sustainable food choices (Lusk & Briggeman 2009, 185).

As discussed, values guide how humans act and behave, based on the hierarchical structure of values. Therefore, consumers can have multiple values, but they can only act in a favor of one value, which further means that individuals need to negotiate between their personal values while making food decisions (Connors 2001; Sobal & Bisogni 2009, 43). For instance, athletes might face difficult situations while consuming ready-to-eat products (Hauser 2013, 98) if they consider both, sustainability- and convenience values important for themselves. Therefore, the essential finding of the value theory is that

consumers face the dilemma of not being able to consider all their values at once, and they need to negotiate between their values. Therefore, it can be concluded that food choices are reflected by personal values and the strategies to manage, deal, and prioritize between these values. (Hauser et al. 2013, 764-766.)

Values have been argued to have a motivational function (Rokeach 1973), further suggesting that values are similar to motives (Paasovaara 2011, 28). Therefore, personal values and food choice motives are often considered the same: however, personal values are considered more abstract compared to motives (Honkanen et al. 2006; Paasovaara 2011). Besides, the main difference between the two factors is that values are considered as beliefs about what is essential in life, whereas motives are referred as the actions or willingness of actions to behave in a certain way. Consequently, the next chapter shifts over from consumers to a specific studied group of professional athletes and explains the common food choices motives, also referred to as food choice aspects.

## **2.3 Motives for athletes' food choices**

This chapter presents the common food choice motives of athletes. Although previous studies have shown evidence on the influential role of personal values in consumer's purchase decisions, food choices also depend on the context, feelings and mood rather than rationality of personal values (Niinimäki 2010; Griskevicius & Kenrick 2013, 372). Hence, other factors, including food choice motives, and the intrinsic- and extrinsic motivations might also have an influence on athletes' food choices, which will be discussed within the following sub-chapters.

### ***2.3.1. The common food choice motives***

Food choice values are a set of considerations while making food choices, which are personally developed and can change over time. Moreover, food choice values are formed based on individuals' own beliefs and are shaped by their knowledge and experiences that are gathered throughout the lifetime. (Stepherd & Raats 2006, 7.) Like stated within the previous chapter, food choice values and motives have been often considered the same



within the previous researchers (Furst etc. 1996; Connors etc. 2001; Lusk & Briggeman 2009; Hauser etc. 2011). However, since values are referred to as personal values by Schwartz within this research, the food choice values are referred to as *food choice motives*, so that those matters will not be mixed with one another.

According to researchers, athletes' main food choice motives include sensory appeal, convenience, price, health, managing relationships, and environment (Connors et al. 2007; Shepherd & Raats 2006, 7; Thurecht & Pelly 2019, 620). *Sensory appeal* refers to the considerations regarding the sensory context of the food, including factors of texture, flavor, and appearance of the food (Birkenhead & Slater 2014, 6). Commonly, the taste motive is considered among the primary considerations while making food choices (Shepherd & Raats 2006, 7), since individuals typically prefer to consume foods that have an enjoyable taste over foods that they do not like (Honkanen & Frewer 2009; Pieniak et al. 2009; Steptoe & Wardle 1999). However, individuals have conflicting opinions on what is seen as an enjoyable taste and what is not, which further means that the views related to taste vary heavily between individuals (Furst et al. 2006, 257).

In terms of athletes, the importance of taste factor has conflicting views (Pelly et al. 2006; Smart & Bisogni, 2001). Even though the taste is important motive influencing athletes' food choices, the taste motive is often balanced by other motives, such as health- or weight concerns (Sobal & Bisogni 2009; Birkenhead & Slater 2014, 6). For instance, the health- weight- and performance-related motives often outweigh the importance of taste, particularly during the on-season when athletes need to perform on a high level and recover quickly from practices and competitions (Smart & Bisogni 2001). Therefore, the sensory appeal is a vital motive influencing athletes' food choices, but can depend on personal characteristics, perceptions on what is considered tasty, and their sports-performance goals (Robins & Hetherington 2005, 452).

*Convenience* refers to time and effort used in constructing food choices from preparing the food and cleaning the kitchen afterward. Convenience is often measured by the correlation between the effort and time used to prepare and acquire food, or by the expected benefits from eating particular food (Gofton 1995). Therefore, food choices are profoundly influenced by time and availability, which can lead consumers to favor foods that acquire convenient preparation and short cooking time. Besides, the availability and accessibility of food are essential components of convenience, and the effort used to gather food, whether it is gathered by car or by walking, influences consumers' food

choices. (Stepherd & Raats 2006, 7.) In terms of athletes, the convenience factor raises challenges in deciding what and when to eat, which, in turn, might lead athletes to favor convenience foods that are easy to prepare (Robins & Hetherington 2005, 452). Moreover, athletes' demanding, and busy training schedules often contributes them to favor foods that are convenient, quick, and easy to prepare (Birkenhead & Slater 2015, 1516).

*Price* motive refers to the cost of food, which is a significant decision criterion that is profoundly influenced by individuals' socioeconomic status, income, family type, labor status and education (Birkenhead & Slater 2015, 7.) In general, the better the overall monetary wealth individual has, the less meaningful the value of price is. Consequently, the price motive is typically more important for lower-income individuals, such as students or unemployed people, which further indicates that financial constraints and budget restrictions heavily influence individuals' food choices. (Glanz et al. 1998.) In terms of athletes, it has been argued that athletes consider price of food important, since their budget is often limited and thus, they need to make food choices that are cheap, but also healthy and convenient (Heaney et al. 2008). Moreover, research on younger college athletes has argued that athletes prioritize budget-friendly food options, which further suggests that price acts as an essential criterion while making food choices (Long et al. 2011).

*The health* component includes factors related to physical well-being, such as nutritional content of food, illness management, weight-control, and digestion matters (Stepherd & Raats 2006, 7). Individuals who consider the health factor as an essential motive typically form their food choices around "healthy foods", such as vegetables, fruits, and whole grains (Hyunju et al. 2019). Besides, individuals who consider the health motive important have also been reported to follow an overall healthy lifestyle, which includes engaging in physical activity and avoiding smoking (Ree et al. 2008). However, it is essential to note that individuals often consider the health aspect differently: for instance, the consumption of low-fat products can cause a contradiction among individuals, since some people perceive them as the healthiest option, while others believe that full-fat dairy products are more nutritious (Furst et al. 1996, 258). Therefore, the health motivations depend on various factors, including age, education, gender, and nutrient knowledge (Birkenhead & Slater 2015, 7).

Previous research have emphasized the importance of health motive (Smart & Bisogni 2001; Birkenhead & Slater 2015), since the general guidelines on sports nutrition typically highlight the importance of a healthy diet, which includes consuming nutritious foods in correct macronutrient amounts to support the overall health and performance of athletes (Rodriguez et al. 2009; Birkenhead & Slater 2015). For instance, previous research has shown evidence that football players make healthy food choices because they want to remain healthy and prevent themselves from getting diseases (Long et al. 2011). However, the importance of health motive varies between athletes depending on their gender and age, as well as their weight control need, performance-related goals, and timing of the season (Birkenhead & Slater 2015, 8).

The last motive, *managing relationships*, refers to the social aspect of constructing food choices, including family, friends, and partners while making food choices. Moreover, other people's presence often shapes the individual's food choices in particular situations, and food choices are not made as individuals but rather as a unit. (Sobal & Nelson 2003) Therefore, individual's personal needs and wants are often compromised while trying to please other people's needs, preferences, and feelings to build or maintain a relationship. For example, while being in a group setting, the urge to please other group members to maintain a positive atmosphere often influences an individual's food choices (Furst et al. 1996, 259). Therefore, supportive friends and family can contribute to individuals make healthy food choices, while other relationships may inhibit the selection of certain foods due to external pressure (Bove & Sobal 2006; Devine et al. 2003). The sub-chapter of extrinsic motivations will further discuss the influence of relationships and social group, which will explain the impact of friends, family, partner, and coaches while athletes make their food choices.

Other food motives include environmental-, religion-, quality-, mood-, safety-, waste- and ethical factors. While these factors are not considered among the most dominant components influencing a food choice, some people perceive these as the most important ones. For instance, the motives of taking care of the environment, and consuming in a sustainable way have become influential motives while consumers make their food choices. Furthermore, since an increasing number of consumers have started to emphasize the sustainable motives, the following sub-chapter will discuss the food choice motive of sustainability in detail.

### ***2.3.2 Sustainability concerns of health, environment, and animal welfare***

The motives that guide consumers to follow a sustainable, plant-based diet include three dimensions: health concerns, environmental reasons, and ethical considerations, where the *health aspects* are often considered as the main motives for consumers to make sustainable food choices (Ruby 2012, 143-144). Moreover, previous research has provided scientific evidence on the relationship between human health and plant-based food, where it was revealed that consuming plant-based foods is associated with lowered blood pressure due to the high use of fruits and vegetables, compared to diets that include large quantities of animal source foods (Yokoyama et al. 2014). Therefore, professional athletes, who are typically motivated to make food choices that support their health and performance, could be motivated particularly by the health aspects of sustainable foods. Besides, since increasing the consumption of plant-based foods has been proven to result in blood viscosity, lowered blood pressure, better weight management, and improved overall health (PRCM 2020), athletes could also be motivated to make more plant-based food choices due to these health reasons.

Besides health aspects, athletes' motives to make sustainable food choices can include the animal welfare and animal right aspects. Although ethical considerations have been suggested to be influential factors while making food choices (Ruby 2012), there does not exist much research on the importance of animal welfare considerations among athletes. However, the ethical reasons to make sustainable food choices can include the disgust over meat, the negative emotions related to meat consumption and production, and the concern over animal welfare (Radnitz et al. 2015), which can motivate athletes to make plant-based food choices.

Lastly, the environmental aspects may act as a motive for athletes to make sustainable food choices. The environmental aspects include the impacts of food production on land, water, air, and energy resources, and in general, it has been concluded that local, plant-based foods are environmentally healthier than animal sourced foods. For instance, it has been revealed that the agricultural food production required 2.9 times more water, 2.5 times more primary energy, 13 times more fertilizer, and 1.4 times more pesticides than plant-based foods (Marlow et al. 2009, 1699), which can further motivate environment-conscious athletes to make more plant-based food choices (Drewnowski 2017, 26.)

The food choice motives discussed within sub-chapter 2.3.1, and the sustainable motives discussed within this sub-chapter could influence athletes' extension to make sustainable food choices. However, there are other specific factors and motives that are influential for the consumer group of professional athletes, which influences their food choices and overall diet. Particularly, the motivations that are connected to lifestyles of professional athletes, and the motivations which arise due to the influence of their family, friends and peers will be discussed within the next sub-chapter. Therefore, the following subchapters will explain the two schools of thoughts - intrinsic and extrinsic motivations - and the impact of those on athlete's food choices and diet in detail.

### ***2.3.3 Intrinsic motivations***

Motives are commonly described as "the underlying reasons that initiate, guide, and maintain a human behavior" (Cambridge Dictionary). Consequently, motives are always goal-motivated, whether it is for the intrinsic benefits or extrinsic reward (Gillet et al. 2010, 155). Therefore, motives are typically divided into two schools of thought: intrinsic- and extrinsic motivations, where the first one refers to performing actions since they are personally rewarding for the individual itself, and the latter one refers to outside motivation such as money, prize, or social recognition (Gillet et al. 2010, 155-156). Within the context of sustainable food consumption, intrinsic motivations include the natural passion for protecting animals and the environment, whereas the extrinsic motivations include consuming sustainable products due to reward, appreciation, or approval from other people, which will be further discussed within the next sub-chapter.

Previous research suggests that athletes' intrinsic motivations to make certain food choices depend on their nutritional knowledge (Blennerhassett et al. 2019, 257), including the awareness of nutrition and applying awareness and knowledge into practice (Worsley 2002). In general, athletes might have better nutritional knowledge compared to general population, since they often receive nutritional knowledge from external sources, including coaches, nutritional experts, or other athletes (Birkenhead & Slater 2015; Spendlove et al. 2012; Trakman et al. 2016), which often leads them to make healthier food choices. Additionally, it has been suggested that the more nutrition knowledge

athletes have, the more importance they place on performance- recovery-and overall health motives (Birkenhead & Slater 2015, 1515).

Although professional athletes often have a greater nutritional knowledge in terms of health benefits compared to the general population (Spendlove et al. 2012; Trakman et al. 2016), athletes do not always act according to their knowledge. Additionally, athletes might have insufficient knowledge or misconceptions, which influences how they are able to form their food choices and overall diet (Walsh et al. 2011; Heikkilä et al. 2018). Moreover, other researchers have raised a concern that athletes do not necessarily have enough nutritional knowledge, and the knowledge is limited particularly among younger athletes and their coaches (Heikkilä et al. 2018, 522), which restricts their sustainable food consumption and could ultimately prevent them from reaching their full potential (Cockburn et al. 2014; Hoogenboom et al. 2009). Consequently, other research suggests that a high number of athletes still hold misbeliefs regarding the energy density and the need for certain macronutrients: For instance, athletes often tend to overvalue the need for protein, possibly because society has been pushing a low-fat, a low-carbohydrate, and a high-protein diet over time (Heikkilä et al. 2018). This, in turn, might lead athletes to avoid certain foods (such as foods that are high in carbohydrates), which could ultimately affect their performance and recovery in a negative way. All in all, it can be concluded that athletes aim to make food choices that support their health and performance, with the best nutritional knowledge they have (Smart & Bisogni 2001).

Competitions and games are among the core reasons why athletes take part in sports, and their diet and trainings are modified to maximize the chances of success (Lamont et al. 2012). Therefore, athletes' food choice motives are heavily dependent on performance-related factors, which means that the quality, quantity, and timing of the food relative to trainings and competitions are influential factors while athletes make their food choices (Meyer & Requant-Closa 2017, 475). Consequently, athletes often base their food choices on the perceived performance-related benefits that the food is expected to bring, and which foods make them feel healthy and energized for everyday practices. All in all, since athletes are expected to train and compete at a peak level, their diet is determined by a well-planned nutrition strategy consisting of healthy ingredients with a sufficient amount of energy and certain macronutrients (Birkenhead & Slater 2015; Pelly et al. 2018).

A macronutrient balance, which is obtained by consuming correct amount of proteins, carbohydrates, fats, and vitamins, is considered to be among the influential health

motivations that influence athletes' food choices (Birkenhead & Slater 2015, 20). Moreover, the previous research findings indicate that athletes are primarily concerned about their protein intake because they want to build and maintain a certain amount of muscle mass. Besides protein intake, it was found that athletes particularly pay attention to their carbohydrate and fat intakes to maximize their athletic performance, particularly in endurance sports. (Long et al. 2011, 691) Additionally, allergies and gastrointestinal issues, such as cramps, nausea, vomiting, and bloating, are common problems for many athletes, ultimately influencing their food choices and overall diet (see Pfeiffer et al. 2012; Rehrer et al. 1992; Worme et al. 1990).

Besides the perspectives of health and macro-nutritional intake on performance-related motivations, the intrinsic motivation of weight control has been argued to influence athletes' food choices. However, the weight control motive could be seen as extrinsic and intrinsic motivation, depending on whether the motive for weight control is due to external influence and reward (e.g., coaches or fitting into a certain weight class) or intrinsic motives (wanting to feel good in own skin). For instance, Smart & Bisogni (2001) presented findings that coaches sometimes set individual body-fat goals for athletes, which ultimately affected their food choices. In that study, athletes recognized that their athletic performance is not dependent on their body fat percentage, but they still adjusted their food choices to obtain a lower body fat and to look leaner. From the intrinsic motivation point of view, the weight motive can be a significant factor influencing athletes' food choices if they believe that lighter weight would improve their athletic performance (O'Connor, Olds, & Maughan 2007, 57-59). However, the weight motive factor is more influential in sports where weight and low body mass are required to maximize the chances for success, such as in weight-category and aesthetic sports (Byrne & McLean 2002; Rodriguez et al. 2009).

The intensiveness of practices and competitions and the daily practice schedule profoundly influence the food choices athletes make, not only to meet the energy demands but also to feel energized and healthy before and after training and competitions. In general, the more critical phase of the season is (for instance, playoffs), the more emphasis is placed on the food choices. This can be explained through the fact that athletes typically need to consume optimal food during the important competition season to reach the maximized performance and to recover their bodies. Conversely, athletes do not necessarily follow certain nutritional guidelines during the off-season, when the athletic

performance is not as critical as during the peak competition season. (Robins & Hetherington 2005; Thurecht & Pelly 2019.)

The type of sport and the culture around it is considered among the intrinsic motivations that reflect in athletes' food choices. Previous research suggests that athletes' food choices are determined by the type of sports they play and their competitiveness level. In general, the higher the league or competitiveness level, the more importance is placed on the food choices. (Pelly & Burkhardt 2014, 34.) Besides, athletes from skill-based or heavy-weight sports tend to place less importance on their food choices compared to athletes from endurance or weight-category sports. (Pelly et al. 2018, 176-178.) This also supports the findings from other studies, where research has provided evidence that energy demands and eating behavior vary between athletes from different sport types, which in turn reflects in their food choices and overall food consumption patterns (Rodriguez et al. 2009). Therefore, it is essential to consider the type of sports athletes participate in and the culture around it while exploring athletes' food choice motives.

Although some previous research suggests that athletes' are typically motivated to make the most frequent and appropriate food choices for themselves (Pelly & Thurecht 2019, 11-13), other research argue that athletes' food choices are also influenced by their extrinsic environment (Smart & Bisogni 2001; Long et al. 2011). Consequently, the extrinsic motivations can be as influential, or even more influential than intrinsic motivations while making food choices, which will be discussed within the following sub-chapter.

#### ***2.3.4 Extrinsic motivations***

As the social cognitive theory suggests, people act as active representatives who influence and are influenced by their extrinsic environment (Bandura 1986). Therefore, consumers' purchase decisions are not only motivated by intrinsic factors, but are also influenced by their extrinsic environment, which can either act as a contributor or barrier for making certain food choices (Wang 2014, 746-747). The extrinsic motivations refer to being motivated by extrinsic factors, and the behavior is regulated through expected outcomes, such as such as seeking appreciation or approval from others (Ali et al. 2020, 282). Deci



& Ryan (1985) developed a Self-Determination Theory, which is a motivational theory explaining four extrinsic motivational types: external regulation, introjected regulation, identified regulation, and integrated regulation (Gillet et al. 2010, 155-156), which are further explained in table 2.

Table 2 Extrinsic motivations (adapted from Gillet et al. 2010, 155-156)

Type of motivation	Explanation
External regulation	Behavior or action is motivated to receive appraisal or award
Introjected regulation	Behavior motivated by internalized, pressuring voice
Identified regulation	Engaging in action due to individuals' own will, although the activity is not attractive in itself
Integrated regulation	Behavior motivated by personal values and beliefs

For instance, an example of external regulation could be that athletes would make particular food choices to gain recognition from their coaches, family, or friends. Similarly, introjected regulation refers to making certain food choices to avoid the feelings of shame, guilt, or anxiety in a group setting. The motivation of introjected regulation could arise while being on the road games with team, if athletes would make certain food choices just because they want to please their teammates and they would not want to draw any attention to themselves with their food choices. In contrast, identified regulation refers to engaging in behavior due to athletes' own will, if they would have recognized that doing that action would help them to develop, for instance in terms of athletic performance. Consequently, athletes could voluntarily make certain food choices to support their health or performance, although the taste of the food would not be considered good. However, they would still do the "healthier" food choice because they believe that consuming such foods would lead to significant improvement of athletic performance. Lastly, an example of integrated motivation could be when athletes make a particular food choice solely because it is in line with their values and needs. However, previous research has found evidence that the most influential extrinsic motivations influencing athletes' food choice motives are the introjected regulation, where the behavior is motivated by pressuring voice of external sources, including family, friends,

coaches, other athletes, and media, which will be discussed within this sub-chapter. (Gillet et al. 2010, 156)

The influence of family in individuals' food choices has been a widely researched area, and a significant relationship between home environment and food choices has been found (Larson & Story 2009, 57). Research suggests that the habits and eating behavior learned in childhood continue to influence the food choices of individuals in later stages of life (Arean et al. 2007; Contento et al. 2006, 575). Besides, the impact of extrinsic environment goes beyond family members, including close friends and partners, where the behavior, attitudes, and feelings of them while eating as a unit impacts individuals' food choice (Larson & Story 2009, 58). In particular, several studies have presented findings that partners, and roomies influence individuals' food behavior, particularly for males (Schafer et al. 1999; Hannon et al. 2002). Furthermore, it has been argued that women may have a positive influence on their spouse's food choices, whereas men rarely have an influence on their wives' diet (Hannon et al. 2002, 77). Therefore, friends, family and partners often act as an extrinsic motivation for individuals' food choices, whether they want to seek approval by pleasing other people, receiving acknowledgment, or getting a reward or attention from surrounding people (Kubik et al. 2005, 498).

Besides the influence of family, friend and partners, athlete's motivations and attitudes are considered to be influenced by their sports coaches. Moreover, previous research has shown evidence that one of the most influential extrinsic motivations of athletes' is the need for approval from coaches by following the advice and knowledge received from them (Smart & Bisogni 2001; Mageau & Vallerand 2003; Long et al. 2011; Birkenhead 2015). Since coaches are sometimes the only source of information for nutrition-, recovery-, and exercise factors, athletes' food choices can be heavily influenced by the knowledge and experiences received from coaches (Long et al. 2011, 693-694). Therefore, since athletes might place a high value on their coaches' opinions, knowledge, and beliefs, it is essential that they have sufficient, up-to-date knowledge on sports nutrition to share the correct nutritional information without causing any damage (Ozdogan & Ozelik 2011, 1-2).

Besides coaches' influence, fellow athletes are likely to motivate athletes' food choices (Ono et al. 2012; Smart & Bisogni 2001). For instance, peer presence, habits or example can influence athletes' food choices, where the feelings associated with eating as a unit, and the interaction, perceptions, and beliefs of others can influence the food choices that

athletes make in certain situations. Besides, athletes are argued to be more likely to try new foods and food combinations if there are other athletes participating in the eating occasion. Therefore, a conclusion can be drawn that being a part of a team and eating as a unit in a social environment influences athletes' food choice and the overall diet. (Smart & Bisogni 2001, 61-63.)

Social media has become the prominent source of information and communication, which could further mean that consumers' knowledge and information from nutrition and food is also gathered through various media channels (Arnold 2019). Therefore, the influence of media, particularly social media, has been proven to have an effect on consumer behavior and buying behavior, both positively and negatively (Simeone & Scarpato 2020, 5). In terms of athletes, social media might act as an extrinsic motivation: the enormous amounts of information and knowledge received from media, and the influence of ads and posts that are seen daily can both influence athletes' formation of food choices. Previous research suggests that influence of media is more powerful with younger individuals and adolescents (Vaterlaus et al. 2015 151-152), but the impact of social media on adults' food choices is still an under-researched area (Hoogstins 2017, 24). Therefore, the influence of social media requires more research and scientific evidence, and thus, further conclusions cannot be suggested on the effect of social media on professional athletes' food choices.

## **2.4 Synthesis of the theory**

The theory section began with presenting the food choice process model, which introduced how life course, various influences, values, and motives contribute consumers to construct their food choices. The second theme of the relationship between values and food choices first explained the Schwartz values, including ten fundamental values that are universal for all people, regardless of cultural or demographical backgrounds. During this section, it was concluded that values are beliefs that guide human behavior, and values are formed based on the hierarchical structure which allows consumers to only act in a favor of one core value while making food choices. Moreover, the sub-chapter of personal values' contribution to sustainable consumption revealed that the values of universalism and benevolence - which stand for preserving and enhancing others' welfare

and appreciating and protecting the welfare nature - are often associated with sustainable food choices.

After the chapter of personal values, the athletes' food choice motives were discussed, which presented the motives of price, convenience, health, taste, and managing relationships. However, since an increasing number of consumers have started to emphasize sustainability matters, the sustainability concerns were discussed as their own sub-chapter. Consequently, the sustainability concerns were divided into three main sections: environmental aspects, health benefits, and ethical considerations of animal welfare, and it was discussed how the increased knowledge on sustainability matters and the negative environmental- and health impacts of livestock production could influence the motives of consumers to make sustainable food choices.

Although personal food choice motives are suggested to be among the main influences on consumer's food choices, the intrinsic and extrinsic motivations have also been proven to influence athletes' food choices. The sub-section of intrinsic motivations presented the core motivations for athletes' food choices, including the performance-related motives, nature of sports, health and weight concerns, and the influence of nutritional knowledge. Moreover, the sub-chapter explained the causal relationship of food choices and athletic performance, which is considered among the most influential motives for athletes' food choices within the previous research (Smart & Bisogni 2001; Long et al. 2011; Thurect & Pelly 2019). Lastly, extrinsic motivations' sub-section explained four types of motivations, and presented the most significant extrinsic motivations influencing athletes' food choices, including the existence of awards and the influence of family, friends, partners, and coaches (Deci & Ryan 1991; Fredrick & Ryan 1995). Therefore, it could be assumed that the influence, opinions, and knowledge from extrinsic environment, as well as the perceived benefits for the individual itself, could act as influential motives for athletes' sustainable food choices.

In conclusion, figure 2 demonstrates how the previous literature and concepts discussed in the theoretical background are connected and how those contribute professional athletes to construct sustainable food choices, which leads to the research problem:

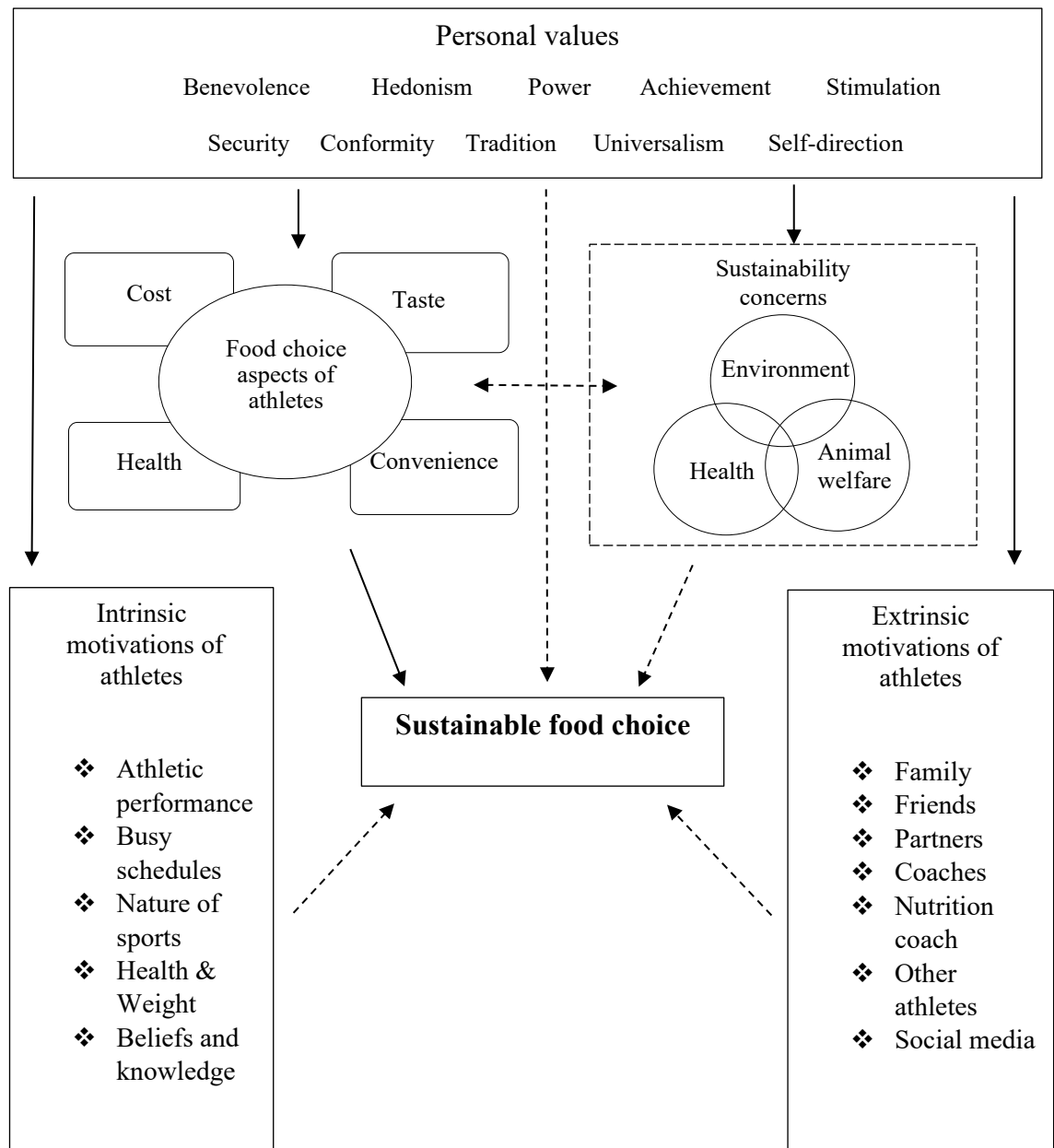


Figure 2 Initial framework

The figure has components of all the theories presented within the theoretical section, including personal values, food choice aspects of athletes, and intrinsic- and extrinsic motivations. The figure's components are placed from up to bottom based on the theoretical section's structure and the perceived importance that previous research has suggested those to have on athlete's food choices. At the top of the figure, Schwarz's personal values act as a core base for constructing a food choice. The theoretical section explained the close relationship between values and food choice motives, which further

justifies why athletes' food choice aspects, including price, taste, convenience, and health, are connected with an arrow from the box of personal values. The motives of sustainability concerns are on right side of the food choice aspects surrounded by intermittent box, since it is yet unknown how athletes consider the sustainability aspects while making sustainable food choices, and whether environment, health or animal welfare motives are among their food choice aspects. Besides, athletes' intrinsic and extrinsic motivations could be rooted from their personal values: therefore, the personal values are connected to the boxes of intrinsic and extrinsic motivations with arrows on both sides of the figure. However, the common intrinsic and extrinsic motivations are placed on the side of the figure, connected to the box of sustainable food choice with intermittent arrows, since the influence of those motivations to sustainable food consumption is yet to be discovered. All in all, it has remained unknown whether and how all the factors - including personal values, food choice aspects, sustainability concerns and intrinsic and extrinsic motivations - reflect on athletes' motives to make sustainable food choices. Moreover, the intermittent box of sustainability concerns, and intermittent arrows from personal values, and intrinsic-, and extrinsic motivations represent the research problem and sub-problems of the study: Why do athletes eat sustainable food, and what are the different aspects that influence professional athletes to make sustainable, plant-based food choices?

### **3 RESEARCH DESIGN**

The research design chapter explains the research approach which is used for the study. The chapter describes the chosen method to approach the data, followed by the section on data collection with an overview of the research participants. After that, the chapter explains the data analysis that is used for this study. Lastly, this chapter will present how the reliability, trustworthiness, and ethical aspects are considered within the research.

#### **3.1 Research approach**

Scientific research aims to collect evidence for the study and produce findings that are not determined in advance (Mack et al. 2005, 1). There are two types of research methods typically used for scientific research: qualitative- and quantitative methods (Rutberg & Bouikidis 2018, 1). Qualitative method can be defined as "an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (Creswell 2014, 4), and the aim of a qualitative study is to develop concepts and understandings for a phenomenon rather than to confirm hypotheses (Tayloe et al. 2015, 18). Therefore, the qualitative method is chosen as a research method for this thesis, since the purpose of this research is to explore and understand why athletes consume sustainable food. Moreover, the thesis's basis is not to make generalizations based on statistical findings but rather to understand and discover the motives and values of athletes on a deeper level. Besides, qualitative research is particularly effective for a research which aims to explore values, opinions, or behaviors of particular population. (Mack et al. 2005, 1-4) Consequently, the qualitative approach was chosen for this study, since it helps to discover, explore, and explain the values and motives of athletes to make sustainable food choices.

Since qualitative research attempts to explore and discover the studied phenomenon, the study- and sub-questions should be formed in a way that clearly articulates which perspectives and matters the researcher aims to explore (Agee 2009, 432). Subsequently, the research- and sub-questions for this research are formed in a way that helps to understand the experiences and opinions of professional athletes' by using questions such

as "why" and "how" (Mack et al. 2005, 4). Although research questions and sub-problems are usually set at the beginning of the research process, the qualitative questions are commonly redefined and developed in all stages of the research (Agee 2009, 432). Within this study, the research question acted as a navigation tool for conducting the research. Still, the sub-problems were modified later down the line according to what is learned, and if unexpected research problems arose during the reading and writing process. Moreover, the next sub-chapter further explains the data collection process, the interview structure and the participant information.

### **3.2 Data collection**

The qualitative research can be conducted via multiple ways, but the qualitative method used for this thesis is one-on-one interviews. While other qualitative methods - such as participant observation and focus groups - aim to explain a specific group's phenomenon with similar thoughts, the interviews aim to dive deeper to each individuals' different experiences and point-of views for a particular phenomenon. (Mack et al 2005, 29.) Within the research problem of assessing the athletes' motives for the particular social issue, previous research have mainly used questionnaires as a research method (LaChausse 2006; Mallet & Hanrahan 2004). Consequently, exploring the phenomenon in rich detail through one-on-one interviews is lacking, which justifies selecting the qualitative method of interviews for this thesis.

Qualitative interviews can be conducted in different settings and structures, such as via unstructured, semi-structured, or structured interviews, or as a group-interview (Mack et al. 2005, 3). A semi-structured interview is chosen for this study since it enables participants of the research to share their beliefs, knowledge, and stories in a natural setting (Hennink et al. 2020; Wong 2014), and the interaction between the participant and the researcher has greater spontaneity and adaptation (Mack et al. 2005, 4). Consequently, a semi-structured interview allows for sufficient flexibility and does not follow strict guidelines, although it is based on a list of interview questions (Appendix 1). Contrarily, a structured interview would have limited the flexibility of discussions since it does not allow the researcher to ask follow-up questions in regard to the participants' responses, and the list of interview questions is carefully designed beforehand (Fossey et al. 2012).



Additionally, group interviews would not provide a detailed understanding of individuals' beliefs and motives since the group pressure or group dynamics could damage the respondent's honesty and sincerity during the interviews, which further justifies the selection of semi-structured one-on-one interviews.

The study's operationalization framework formed this study's interview guide, presented in table 3. The interview themes were developed based on the previous findings and themes that arose during the interviews.

Table 3 Operationalization plan

Research question	Sub-questions	Theories	Themes
Why do professional athletes consume sustainable, plant-based food?	How do athletes' values shape their consumption patterns?	Personal values	Price
			Taste
			Convenience
	How do the intrinsic motivations contribute to athletes' sustainable food choices?	Health- and environment motivations	Knowledge
			Beliefs
		Performance-related factors	Perceptions on suitability for pro-athletes
	How do the extrinsic motivations reflect on athletes' sustainable food choices?	Intimate circle	Family
			Partners
			Friends
		Environment of athletes	Coaches
			Peers
			Media
	Challenges of environment		

The semi-structured interview's goal is to make the interviewee feel as comfortable as possible during the discussions so that they feel open and accepted to share their beliefs and experiences of the phenomena (Mack et al. 2005, 30). While conducting interviews,

the interviewer's role is to guide the conversations and to ensure that each theme of the research is covered. Therefore, while conducting the semi-structured interviews, the researcher's role is to encourage the participants to openly share their thoughts by creating a safe and authentic environment for an honest discussion. Even though the interview setting can quickly turn into a deep conversation, it is essential to strictly leave the study participants to share their beliefs. Therefore, the researcher did not share their own opinions, and the interviews were not a two-way communication setting but rather an open space for the participants to share their views on the studied phenomenon. (Austin & Sutton 2014, 437-438.)

The research's general structure and interview questions were formed before conducting the interviews, where the interview consisted of a mixture of closed- and open-ended questions. Besides, the interview questions were tested with one potential study participant, and the interview structure and questions were modified afterwards according to the shortages noticed within the test round. Moreover, the interview's main themes follow the preliminary guidelines, and the sub-questions and follow-up questions were formed during the interview according to each respondent's reactions, insights, and responses. Besides, since respondents had differing backgrounds and sports fields that could potentially change the course of the interviews, the researcher may notice other potential sub-themes related to the main topic while conducting the interviews (Mack et al. 2005, 29.)

The first interview theme includes the influence of values in athlete's food choices. The theme's goal is to understand what kind of values athletes have and how their food choice motives guide their consumption patterns. The second theme of intrinsic motivations discovers athletes' knowledge and beliefs regarding sustainable food and importance of diet in general. Also, intrinsic motivations include performance-related factors, health- and weight control factors, and other specific factors that contribute to athlete's food choices. The second theme's goal is to understand how beliefs and knowledge motivate athletes to eat sustainable food and to identify the specific intrinsic motivations of athletes that influence their food choices. Besides, the second theme gives respondents a free space to explain what motivates them to consume more sustainable food.

The last theme of extrinsic motivations includes all the factors of the extrinsic environment, such as friends, family, coaches, and media, and how those are reflected in

athletes' motives to make sustainable food choices. The last theme's goal is to identify how the extrinsic environment influences professional athletes' food choices and which kinds of factors they have identified as barriers to make certain food choices. Therefore, the goal is to identify everyday life situations that influence athletes' food choices and to explore how those challenges prevent athletes from consuming sustainable food. At the end of the interviews, there was room for free discussions to bring up other potential matters that might have arose during the discussions.

In order to obtain accurate findings from the qualitative research, a careful participant selection is essential (Hirsjärvi & Hurme. 2004, 163–165). The participants for this study were gathered via snowball criteria, which is commonly used when researcher uses their own social networks to gather the study participants. Although snowball sampling includes recruiting study participants, it is essential to note that study participants took part in the study due to their own willingness and interest towards the subject. Within this research, the study participants were gathered via researchers' social networks, since the studied group of professional athletes is not easy to recruit via other participate selection methods. (Mack et al. 2005, 17-18.)

Besides, the participants should be familiar with the subject and have experience on the matter to comprehensively explain their thoughts and opinions (Taylor et al. 2015, 18). The main criterion for selecting respondents was that the primary income source comes from their sports, meaning that the respondents are either professional athletes or half-professional athletes. The additional criteria were that respondents needed to be familiar with plant-based, sustainable foods to share their thoughts and beliefs regarding the subject. Since the research goal is to receive an understanding of professional athletes' motives, the sports they play, gender, or age were not seen influential while choosing the group of participants. However, to receive versatility for the research, participants from different sports and both genders were considered.

Overall, a total of ten people was interviewed for this research to receive an adequate amount of varying information and knowledge from respondents, but also to avoid repetition. The thesis's scope includes interviews with professional athletes from Finland, with representatives of different sports, including basketball, football, golf, orienteering, and cross-fit. A majority of the respondents (4) were basketball players, aged between 22-29. The interviews were recorded individually, and the researcher took the observation and hand-written notes during the interviews. The interviews lasted from 40 minutes to

75 minutes and the interviews were reported anonymously. However, some of the demographical information, including the age and gender of the respondents, were mentioned to receive an understanding of the participants' backgrounds. The respondents, their field of sports, years as a professional, gender, age, and the interviews' length and date are concluded in table 4.

Table 4 Conducted interviews

Person	Field of sport	Years as professional	Gender	Age	Length (min)	Date
1	Basketball	4	Female	28	57	20.12.2020
2	Basketball	4	Male	27	48	21.12.2020
3	Golf	3	Female	24	61	5.1.2021
4	Basketball	3	Female	22	75	5.1.2021
5	Football	2	Male	23	40	7.1.2021
6	Football	3	Female	23	50	7.1.2021
7	Orienteering	3	Male	23	56	7.1.2021
8	Cross-fit	3	Female	26	46	6.1.2021
9	Basketball	5	Female	29	51	5.1.2021
10	Basketball	1	Female	24	62	5.1.2021

Before conducting the interviews, each participant was being asked for a permission to record the interview for the purpose of future analysis. The interviews were conducted mainly via Skype due to the different locations of the researcher and respondents. Besides, to guarantee both researcher's and participants' safety and health during the global Covid-19 pandemic, the interviews were mainly conducted remotely instead of a face-to-face setting. However, two interviews (respondents 1 and 4) were conducted face-to-face due to the practical reasons, since the researcher and the study participant were naturally in the same physical location. All of the interviews were conducted in the respondents' mother tongue (Finnish) to receive accurate responses and enable participants to analyze

the subject comprehensively. Afterward, the interviews were transcribed, which is discussed in the following chapter of data analysis.

### **3.3 Data analysis**

Thematic analysis is one of the many methods to analyze textual data (Forman & Damschroder 2007, 40), which is used for identifying and analyzing themes that arise from qualitative data (Duschinsky 2014, 1948). The thematic analysis aims to clarify and condense raw data into a written form while preserving all the necessary information that arise from the material (Eskola & Suoranta 1998, 138). Within this research, the raw data was divided into various themes and categories based on the researchers' own interpretations (Forman & Damschroder, 2007, 40). Therefore, thematic analysis was chosen for the study since it allows for great flexibility while interpreting the data and allows the researcher to easily approach the data by sorting data into themes (Duschinsky 2014, 1948). The themes and categories that emerge from the data were further sorted through researchers own careful reasonings and comparisons while analyzing the data (Zhang & Wildemuth 2005, 2). Therefore, themes do not simply emerge from the data (Braun & Clarke 2006, 82), but researcher needs to use their own interpretations while constructing and generating the themes.

Besides, thematic analysis is the proper fit for this study since it is often used when the research question addresses people's views, opinions, or experiences to a specific matter, and when the research is conducted through a qualitative method of interviews. However, it is essential to note that thematic analysis has a subjective aspect, and it relies on the researcher's own views and knowledge, which leaves a risk of misinterpreting the data and making claims that are not truthful (Braun & Clarke 2014, 25). Therefore, a lot of attention was put into the reflection of the researcher's own choices, and throughout the data analysis process, interpretations were carefully made to ensure the trustworthiness of the findings.

The thematic analysis process starts with the qualitative interviews, where interviews were conducted and recorded individually, and handwritten notes were made throughout the discussions. During this stage some themes already arose, and the themes were further developed after careful listening to the interview material. After listening, the recordings

were transcribed and written out, and utterances were cleared out to make the text more coherent (Flick 2013, 299.) Consequently, the interviews were converted into 4-5 pages of congregating summaries, based on the predefined themes and research questions on the operationalization plan. This process familiarized the interviewer with the topic and research questions, and it allows for quicker analysis, and limits the unnecessary data.

Since the themes often arise from the data analysis process and not directly while interviews are conducted (Hirsjärvi & Hurme 2004, 173), the inductive approach was used as a thematic analysis approach for this research. The themes were classified into themes regarding the theoretical framework and previous researchers, which provided a sufficient understanding of what kinds of themes could be expected from the research. However, although the themes and theories were formed based on previous studies' findings, the research themes were modified during the interview process. Therefore, new themes emerged from the conversations, while some other themes were discussed less or dropped out entirely during the interview process, if the theme was not relevant for the research findings section.

Lastly, the re-evaluation of labels and themes was undertaken, and the most important themes that arose from the interviews are presented within the findings section. The initial factors influencing professional athletes' food choices, including the food choice motives, and the intrinsic and extrinsic contributors and barriers for consuming sustainable food, are listed below:

Table 5 Themes from the data analysis

Theme	Explanation
Price	Low prices and reasonable offers encourage athletes to make food choices
Taste	Good taste contributes athletes to make certain food choices, and based on the taste, the decision of whether the food product will be consumed in the future will be evaluated
Convenience	Athletes want to consume foods that are quick and easy to prepare, and does not require much planning
Health	Sustainable food choices are healthy, and makes feel light and nourished
Environment	The lack of motivation for making food choices that consider environmental aspects
Lack of knowledge	Limited knowledge on the sustainability matters
Beliefs	Perceptions towards plant-based diet: questions regarding the suitability of sustainable, plant-based foods for athletic lifestyle
Extrinsic influence	Influence of family, friends, partners, and other athletes while making food choices
Challenges	Challenges with combining athletic lifestyle and sustainable eating

To analyze the data, all the participants of the study were numbered to anonymize the material. Then, the material was again processed by the researcher, where the discussions regarding the above-mentioned themes were highlighted on the written data to answer to the research question and sub-problems. The participants' direct quotes are used within the findings section to convince the existence of the gathered data and to illustrate the themes and findings in a trustworthy manner. (Saaranen-Kauppinen & Puusniekka 2006, 78-80.) However, since the interviews were conducted in Finnish, the direct quotes used within the findings section were translated from participants' mother tongue to English. Besides the collection and presentation of the direct quotations, the interaction with the theoretical background was done throughout the presentation of the findings, where



careful reflection and comparison are presented in the light of the previous research data (Eskola & Suoranta 1998, 176), which are further discussed in chapter 4.

### **3.4 Evaluation of study**

This subchapter explains how the research's trustworthiness is reached by using Lincoln and Guba's evaluation criteria (1985). The evaluation criteria is chosen for this study since the criteria is widely used, particularly in qualitative research. According to Lincoln & Guba (1985), the research's trustworthiness can be obtained by following the four principles of credibility, transferability, dependability, and confirmability (Lincoln & Guba 1985, 300). Additionally, this research followed TENK's ethical principles, which are further discussed later within this chapter.

*Credibility* refers to how the data gathered from research corresponds to truth and reality (Lincoln & Guba 1985, 296). Moreover, credibility factors include how the researcher interprets and represents the data gathered from both the previous research and research participants (Cope, 2014, 89). The credibility of this research is ensured by gathering the information from various databases and literature sources, which are trustworthy and reliable. Besides, the interview process is well structured and planned according to the theoretical framework and previous findings. Moreover, the interview structure is tested before conducting the actual interviews, which increases the trustworthiness of the research. It is essential that the researcher uses the participants' knowledge and experiences carefully when making observations and conclusions on the studied phenomenon (Fossey, 2002, 724). Therefore, it is important to note that while the research subject deals with respondents' habits, the avoidance of socially desirable answers cannot be completely ensured. However, since this research uses anonymous measures for storing the data, the socially desirable responses can be limited, and the participants may explain their experiences, views, and opinions in a trustworthy, open manner.

*Transferability* refers to the broader context in which the results apply to other study fields (Lincoln & Guba 1985, 296–297). Moreover, transferability is reached when the research results are also applicable to individuals who are not part of the studied group (Cope, 2014, 89). The transferability of this research is enhanced by providing a careful

explanation of the research context, studied phenomenon, and the research participants, which aligns with the previous findings and applies to a broader context. However, since the protection of participants' privacy is ensured via anonymization measures, the study's transferability is weaker, but in turn, the credibility of the study is higher.

The *dependability* refers to reliability of the data, and how the research phenomenon is presented during the whole research process (Lincoln & Guba 1985, 299). To reach the research's dependability, the researcher should clearly describe and demonstrate the research steps from the beginning until reporting the findings (Korstjens & Moser 2018, 121). Within this research, each step of the research process is documented by providing detailed descriptions of the participants' demographics and the data collection methods. Moreover, the descriptions of methods are presented in detail and in an understandable matter from the readers' point of view, which increases the dependability and trustworthiness of the research and the findings. However, even though the phenomenon of consuming sustainable, plant-based foods was explained carefully to respondents before conducting the interviews, it was still often mistaken for a vegan diet, which decreases the dependability of some parts of the findings.

Lastly, *confirmability* refers to the researcher's interpretations and objectivity during the research process (Lincoln & Guba 1985, 300). Furthermore, the researcher should demonstrate that the conclusions and interpretations received from the study are purely formed based on the theoretical knowledge. Therefore, the results should be strictly obtained from study participants, meaning that the researcher's own values, personal experiences, and thoughts should be excluded from the study. The confirmability within the research is reached by including rich quotes from participants from each emerging theme and supporting the quotes and findings with evidence from previous research.

The TENK ethical materials and principles are used to enhance the ethical aspect while conducting research. Moreover, TENK guidelines are used for this study, since the materials are commonly used for thesis writers and supervisors to ensure that thesis work complies with the ethical principles (TENK 2009, 3). The guidelines are developed by National Advisory Board on Research Ethics, and the purpose of the guidelines is to provide researchers a model to ensure that the research is conducted in a responsible, honest, and trustworthy manner. The principles further require researchers to consider ethical considerations within all stages of research, including the planning and performing the interviews, storing the data, and presenting the findings of the research. Moreover,

since the process of conducting the research includes searching information from the other researchers' findings and achievements, those need to be carefully expressed in an appropriate way. (Räsänen & Moore 2016, 1-2.)

The ethical principles are divided into three main categories of 1) Respecting the autonomy of research subjects, 2) Avoiding harm, and 3) Privacy and data protection. The first principle, respecting the autonomy of research subjects, involves a voluntary participation for the study, ensuring the participants' privacy, and providing information to participants regarding the research subject and the nature of data collection. For this research, research participants were voluntarily gathered for the study via polite request, where the participants registered themselves as study participants after hearing the research subject from the researcher via social media. Besides, the participants' privacy was protected throughout the research process by reporting findings of the interviews anonymously. Additionally, the research subject was familiarized for the respondents before conducting the interviews, and the concrete terms for participating in the research as well as the length of the interviews were carefully explained. (TENK 2009, 5-7.)

The second dimension, avoiding harm, includes avoiding mental, social, and physical damage, including treating subjects with respect and respectfully reporting the findings of the study. The interview situations can consist of discussions that may lead study participants to feel different emotions, including sadness, embarrassment, shame, or frustration. Therefore, careful protection of participants' mental state was ensured by emphasizing their free willingness to participate in the study. Besides, all the subjects within the interviews were discussed in a polite manner and with respect to participants' human dignity. Additionally, the financial and social harm from publishing the findings without giving a negative picture of the participants is avoided by anonymizing the names of the study participants. Moreover, the research findings are presented in a truthful way that are solely based on the systematic analysis of data. (TENK 2009, 8-10.)

The last principle of data protection and privacy refers to presenting the study's findings in an open manner, but also handling the data with confidentiality. Only the study participants' necessary data were gathered, and the research data was carefully protected and not given to any external sources. For this study, the direct identifiers of the participants, such as name and their address, are protected, but the indirect identifiers, such as field of sport, age, and years as a professional, are expressed within the study through participants' own willingness. (TENK 2009, 10-12.) All in all, this research was

conducted in an ethical manner from the beginning of the research until highlighting and analyzing the findings, which are presented within the next chapter.

## **4 ATHLETES' MOTIVES BEHIND SUSTAINABLE EATING**

This section presents the research findings, which are divided into three main topics: food choice motives, intrinsic motivations, and extrinsic motivations, but all of the main topics are divided into smaller sub-themes. The first chapter covers the food choice motives of price, taste, and convenience. Afterward, the intrinsic motivations behind athletes' food choices, including the performance-related factors, beliefs, knowledge, and concern for health and environment, are presented. Lastly, the findings from the influence of external sources, such as other athletes and coaches, family, friends, and media, will be discussed in the last section.

### **4.1 Common food choice motives of athletes**

One of the centric themes of this research is the food choice motives of athletes, and thus this section reveals how those reflect on athletes' food choices. Moreover, this section shows how the food choice motives contribute athletes to consume sustainable food, or whether those act as a barrier for sustainable food choices. Based on the interviews, respondents' most influential food choice motives were the price, taste, and convenience-related factors, which will be discussed in the following sub-sections.

#### ***4.1.1 Consumption patterns are influenced by price***

Similar to findings from previous research, the price was found to be among the core personal food choice motives for many athletes (Connors et al. 2007; Shepherd & Raats 2006, 7; Thurecht & Pelly 2019, 620). Moreover, all of the respondents thought that the price influences their food choices and daily purchases at least to some extent. It was mentioned that respondents buy foods that have a reasonable price, and they often favor foods that are cheap, regardless of the product attributes. Furthermore, many respondents stated that they usually buy food based on what is on sale, and they make the buying decision while being in the grocery store, meaning that food choices are often made on

impulse when products are relatively cheap. In conclusion, it could be suggested that food quality is a secondary thing as long as the food is cheap or on sale.

Based on the interviews, it seemed that with food products that athletes consume in large quantities, such as grains, eggs, and dairy products, the low price is the main criteria, whereas while buying foods that they do not consume a lot, such as ice cream and other comfort foods, they are willing to pay a higher price. Therefore, all in all, it seems that with some food products, the brand or the quality does not matter as much, and athletes are solely looking for foods that are cheap, healthy, and support their athletic performance. One respondent said the following, which further states that price is one of the core motives while buying food, along with performance-related factors:

*"There are situations on a daily basis where I go to a store and do not buy certain products if those are too expensive or do not have the optimal nutrient content which I need for my development and recovery." (R4 Female basketball player, 5.1.2021)*

Moreover, respondents were asked about their perceptions regarding the price of sustainable food in particular and how they would compare that to the cost of animal-source foods. This discussion aimed to highlight whether price acts as a barrier to making sustainable food choices. Based on the interviews, most of the respondents stated that they do not buy sustainable foods or organic products because of the higher price compared to animal-sourced foods. This further aligns with previous research, which suggests that consumers would be willing to consume more sustainable food products if those would be cheaper (Hoek et al. 2011):

*"I think sustainable products are almost twice as higher in price than animal-source foods, and the price difference is probably the main reason why I often buy meat over sustainable foods. I remember one time when I wanted to buy a plant-based burger meat alternative, and I went to a store only to realize that one package of veggie patties costs 8 euros. I am not willing to pay that much for a meat alternative and that resulted me to leave the product to the store". (R7 Male orienteering, 7.1.2021)*

The general perceptions were that sustainable foods are often higher in price, especially for the meat alternatives, as mentioned by the respondent. Remarkably, the organic foods were seen higher in price, and almost all respondents agreed that currently, they do not have the resources or financial stability to favor organic foods over "regular" foods. This aligns with the previous studies, which have argued that price can act as a barrier to purchase sustainable foods, and it was concluded that the price for sustainable food products is often over 10-30 percent higher than for the "regular" food products (Al-Swidi et al. 2014, 1562). However, one respondent stated that if the price was the exact same for animal source foods and sustainable foods, they would always choose the sustainable option. Lastly, few respondents mentioned that for some food products, they are willing to pay more, but for some products, it acts as a barrier:

*"The price acts as barrier for making sustainable choices and buying fair trade products. If I need to pay 30 cents more of a sustainable cheese that is absolutely fine, but if I need to pay 6 euros per kilogram for tomatoes in comparison to 3 euros per kilogram of regular tomatoes, I will choose the cheaper one". (R1 Female basketball player, 20.12.2020)*

Even though the respondents' common opinion was that the price is often higher for sustainable products, few respondents thought that the sustainable options are cheaper in many cases. For example, respondent 5 noted that soy protein is often cheaper than meat, and respondent 6 thought that sustainable foods, such as grains, beans, and vegetables, are more affordable in general than animal source foods. Besides, respondents who described themselves as sustainable, plant-based eaters thought that animal source products and plant-based products are the same in price, compared to respondents with omnivorous diets whose general opinion was that sustainable foods are higher in price. This further suggests that the perceptions towards a sustainable diet are different between athletes who mainly eat plant-based foods and athletes who consume large amounts of animal source foods. However, respondent 8, who follows an omnivorous diet, stated the following, which suggests that price is not a barrier for sustainable food choices, regardless of the diet:

*"I have never left a plant-based product to a store because it would be more expensive than meat. If I want to eat plant-based meal, I will buy it regardless of the price". (R8 Female cross-fit, 6.1.2021)*

Although the general perception was that price is one of the core food choice motives for athletes, few respondents stated that the price factor did not influence their buying decisions at all. One respondent said that the price matters in a way that they try to choose seasonal products or vegetables whenever possible, but it does not determine whether they will buy a product or leave it to the store. However, all of the respondents mentioned that the price or the price-quality ratio is important aspect for them while purchasing food, which further suggest that athletes want to buy foods that are as cheap as possible and as high-quality as possible. Besides, few respondents thought that the taste factor often surpasses the price, further meaning that they will buy foods that taste good regardless of the cost, which will be discussed within the next sub-chapter.

#### ***4.1.2 Athletes want to consume food that tastes good***

In general, previous researchers on food choice motives suggest that consumers tend to choose foods that they enjoy eating (Eertmans et al. 2011; Hoek et al. 2011; Bryant 2019), which further means that the taste motive is commonly seen among the core motives for food choices. Regardless of low price, nutrient content, or health aspects, food is not likely to be eaten if it does not appeal to individuals' senses (Hetherington & Rolls 1996). Therefore, even when the price factor or health benefits would be important factors influencing athletes' food choices, the taste of the food often surpasses the other factors. Moreover, since athlete's lifestyle and training schedule usually requires them to eat in a specific way to perform at a peak level, the diet optimization often outweighs the taste value of food. (Smart & Bisogni 2001; Lamont et al. 2012.)

During the interviews, many respondents stated that taste is one of the core food choice motives while buying food. Respondents said they want to consume food with a "good taste", but which are still seen as somewhat healthy. This follows the findings from previous research, which has outlined that, in general, athletes want to eat food that tastes good but is also made from healthy ingredients (Smart & Bisogni 2001). Therefore, even



when athletes consider the taste motive important for themselves, it does not mean that they would consume foods that are traditionally considered tasty, such as highly processed foods that have high amounts of sugar or fat. Instead, they follow their own food preferences and eat foods that they consider having a good taste, but are also healthy:

*"I want to eat good food. Food that tastes good and does not taste like sand. However, I feel like I am "easy to please" if you could say so, because I basically eat everything, and I am not picky". (R1 Female basketball player, 20.12.2020)*

The attitudes and opinions towards taste of sustainable, plant-based foods are widely positive, where a large number of respondents agreed that they enjoy the taste of sustainable foods. Interestingly, some respondents thought that the taste is sometimes better compared to animal source foods: sustainable meals were described as flavorsome and fresh, and sustainable meals allow for great versatility. Furthermore, respondents explained that sustainable food's overall taste is often better due to correct seasoning, especially if they choose a sustainable meal in the restaurant. One respondent, who is a plant-based eater, explained the taste of sustainable products as follows:

*"Often the taste is quite similar with sustainable products and meals cooked from meat, and in many cases the taste is even better. Some people use the argument of seasonings: However, I feel like you have to use seasonings with everything, and it doesn't matter whether you cook sustainable, plant-based products or chicken or meat". (R6 Female football player, 7.1.2021)*

However, few respondents raised concern over food seasoning since it requires more attention and careful planning than simply seasoning meat or chicken. Respondents stated that through their experience, they have learned which seasonings suit for animal source proteins, but they are not quite familiar yet with seasoning sustainable foods, which further acts as a barrier to buy those types of foods. Previous research supports this finding, where it has been argued that the familiarity of the food is essential while making sustainable food choices, and it might prevent consumers from buying products that are

unfamiliar for them (Hoek et al. 2011; Lea & Worsley 2003). Besides, respondents brought up their bad experiences while cooking sustainable meals, where they have thought that the taste was lacking something. These bad cooking experiences have in turn led respondents to try different ways of cooking sustainable products, and some respondents still do not have the knowledge on how to properly cook sustainable meals. The challenge with cooking has further turned some athletes to avoid certain sustainable food products due to the negative and challenging experiences:

*"The problem with the sustainable foods is that you just have to try it out, and there is no guarantee that it is going to taste good. I have had many occasions, where I have cooked a dinner, and thought afterwards that there was something missing, and it did not taste as good as I thought it would."* (R2 Male basketball player, 21.12.2020)

Besides the problems with seasoning the food correctly, some respondents raised concerns regarding the overall taste of sustainable food, where some respondents considered the taste to be worse than with animal source foods. This also aligns with previous research findings, where the taste has been identified as a factor that prevents consumers from buying sustainable products or meat alternatives (Bryant 2019; Hoek et al. 2011; Lea & Worsley 2003). For instance, some of the respondents particularly enjoyed the taste of meat and chicken, and they further stated that they want to eat those foods simply because the taste is better than with sustainable food options. Therefore, the taste motive acted as a barrier to buy sustainable food and was seen as an influential motive while constructing food choices, particularly for those respondents who considered the taste of the sustainable foods as bad:

*"It is hard to replace for example chicken in some recipes. It is simply just not the same because the taste is different. And if it's the case that the price is cheaper, and the taste is better, I just don't think that the ethical issues would prevent me from eating meat or chicken."* (R2 Male basketball player, 21.12.2020)

Interestingly, one plant-based food product that seemed to have an overall negative opinion about was tofu, where nearly every respondent mentioned the bad taste of it. Respondents thought that many of the plant-based food recipes include tofu, which leads them to avoid those types of recipes. Besides, few respondents added that sustainable foods' texture differs from meat or chicken, leading them to prefer animal source foods over sustainable foods. Moreover, some respondents stated that they would never repurchase certain sustainable food products due to the bad taste:

*"I have not bought some sustainable food products again because of the taste: I once tried frozen soy products, and it tasted so bad that I never want to buy soy products again."* (R6 Female football player, 7.1.2021)

Overall, the taste of the food was seen essential for athletes regardless of the gender, sports, or competition period, as opposed to previous research on athlete's food choices (Smart & Bisogni 2001; Lamont et al. 2012). Only a few respondents thought that the taste of the food does not influence their food choices at all, but they were also not considered as picky eaters, and they also mentioned that they followed an extremely strict diet overall. Generally, despite few negative opinions, the taste of sustainable foods was seen quite positive, and all respondents were open and willing to try those types of food products, especially their friends or family had tried the food before or had recommended that to them. This further suggests that familiarity of the food is particularly important while making sustainable food choices. Besides, sustainable food's appealing taste contributes to consuming more sustainable food products, especially if those are also cheap and easy to prepare, which is discussed within the following sub-chapter.

#### ***4.1.3 Athletes value convenient food***

The third sub-theme of food choice motives is the convenience factor, which was considered as the core motive for majority of the respondents. The findings on the importance of convenience factor go in line with the previous literature, where it has been suggested that athletes tend to consume foods that are convenient and quick to prepare due to their busy schedules (Smart & Bisogni 2001; Robinson & Hetherington 2005;

Long et al. 2011). Based on the interviews, most of the respondents seemed to consume and buy foods that are easy to prepare, and which do not require long preparation times. Besides, the majority of the respondents thought that cooking sustainable food requires more time and effort than cooking meals from animal source foods. Additionally, the lack of variety was mentioned by many, as well as the difficulty of choosing sustainable foods that would have the same amount of protein as animal source foods. Interestingly, only one respondent thought that convenience is not a barrier to consume sustainable food: Therefore, it can be concluded that the convenience factor is among the most significant food choice motives, which influences the overall food consumption patterns of athletes. Table 5 presents the challenges with sustainable food from the convenience point of view, that were mentioned by the study's participants.

Table 6 Challenges with convenience value to consume sustainable food

Barrier	Quote from respondent
The lack of variety	<i>The biggest barrier for me is the variety factor and what to cook. If I would now try to be plant-based eater and I would go to a store, I would not really know what to buy. Yes, of course there are things such as tofu, vegetables, and beans, but besides those, I don't really have the knowledge base on what to buy and how to prepare the food. (R8 Female cross-fit, 6.1.2021)</i>
The difficulty to cook	<i>I have had problems with cooking sustainable foods, such as tofu: it just always ends up having a bad taste. There are of course other meat alternatives, but sometimes those are challenging and time-consuming to cook: I don't understand why do you have to dry, stew, and do all the extra preparations to make it taste decent? (R10 Female basketball player, 5.1.2021)</i>
Required time	<i>Even though I am a professional athlete, and I should have time for cooking, I just do not have the effort to make fancy meals that take a lot of time. Cooking meat or chicken is often much faster than cooking sustainable meals, so it is just more convenient to cook those types of foods. (R10 Female basketball player, 5.1.2021)</i>
Busy schedule	<i>Sometimes I'm in a hurry and I need to get lunch quickly. When you are a flexible eater who doesn't have any restrictions, you can basically get anything you want if you need to grab something quickly. (R8 Female cross-fit, 6.1.2021)</i>  <i>The biggest challenge is to cook the meal properly. Once you arrive from practice back to home, you just don't have the time or the willingness to cook anything that requires too much effort, because you are so hungry and tired. (R2 Male basketball player, 21.12.2020)</i>
Protein intake	<i>I do eat sustainable products, but I often eat it with animal-sourced products: I find it easier to receive all the proteins from meat and other animal-sourced proteins. (R8 Female cross-fit, 6.1.2021)</i>

The lack of variety with sustainable foods was mentioned by many respondents, where a general opinion was that there are not enough sustainable, plant-based food options that would suit for athletes. Few respondents thought that the only sustainable food options are either soy-based products or tofu, which further leads them to prefer animal source foods due to larger availability. Therefore, it can be suggested that athletes would be willing to make sustainable food choices, if there would be more healthy, cheap, and tasty food options within grocery stores.

Almost every respondent's common opinion was that plant-based, sustainable foods are not as convenient as animal source foods: the cooking times are longer, and those are more difficult to prepare. Previous research suggests that poor cooking skills have been identified as barriers to making certain food choices (Heaney et al. 2008), and it seems that the required effort in cooking also prevents athletes from making sustainable food choices. For instance, one respondent stated that the overall time spent preparing a sustainable meal is a lot longer than preparing a meal from animal source foods. They further suggested that it requires more planning with seasoning the food correctly, and that it requires more time at the grocery store to find the correct products. Lastly, they added that it takes more time to cook the actual meal when there are many additional cooking phases with stewing or drying certain sustainable food products. Therefore, it could be concluded that poor cooking skills act as a barrier to buy and consume sustainable foods, since food preparation skills are seen essential while cooking sustainable meals that have a good taste.

Long food preparation times are difficult to combine with athletes' busy schedules, and many respondents thought that they do not have enough time to cook meals that require a lot of time or effort. In general, respondents' common perception was that cooking animal source foods is easier and faster than cooking plant-based foods. However, it seems that athletes would be willing to consume sustainable food if they would have more time or if someone else would cook for them:

*"I don't have the same resources as some other athletes might have. I would definitely eat more plant-based foods if it would be more convenient, and I would have a personal chef like LeBron James probably*

*has. It just requires more time, money, effort, and focus, and I just don't have those right now."* (R10 Female basketball player, 5.1.2021)

Lastly, it was mentioned that it is more convenient to eat animal source foods because it is easier to receive all the essential proteins from meat, chicken, or fish than from plant-based foods. Moreover, respondents added that it requires more planning to form sustainable meals that cover the needed protein intake without consuming too many other macronutrients, such as fats or carbohydrates. For instance, some of the new sustainable food innovations are high in protein, but those are also higher in fats and carbohydrates than chicken or meat. One respondent stated the following, which suggests that right now, there are no similar products within the markets that could replace the nutritional content of chicken or other animal source foods:

*"I feel like it would be challenging to replace eggs and dairy products with sustainable options, because there are no similar alternatives that would replace the nutritional content of those. I feel like you cannot really replace egg whites with something that would be as convenient, cheap, light and high in protein".* (R4 Female basketball player, 5.1.2021)

Therefore, it could be suggested that athletes would be motivated to consume more sustainable food products if food companies would have a wider selection of plant-based foods with similar nutritional content as chicken or other low-fat meats have. On the same subject, the importance of protein intake and the protein source for athletes are further discussed within the next chapter of intrinsic motivations to consume sustainable food.

## **4.2 Intrinsic motivations to eat sustainable food**

This section highlights the main intrinsic motivations of professional athletes to consume sustainable food. Numerous motivations arose during the interviews, which were divided into three main sections: beliefs, knowledge, and sustainable factors of health and environment, which are further discussed within the following sub-chapters.

#### ***4.2.1 Performance-related motivations guide athletes' overall diet***

According to previous research, performance-related factors are among the key motives influencing athletes' food choices (Smart & Bisogni 2001; Robins & Hetherington 2005; Rodriguez et al. 2009; Long et al. 2011), which aligns with the findings of this research. Moreover, the performance-related factors seemed to heavily influence athletes' food choices, where respondents emphasized the importance of food choices that help them to reach maximized athletic performance. Besides, their field of sport seemed to influence their overall food choices in terms of nutritional content, quantity, and timing of the food.

Almost all of the respondents said that they train from 3-5 hours a day, meaning that they need to eat in large quantities and have correct amounts of certain macronutrients to have energy for the practices:

*"I try to optimize my eating in a way that I feel good and energized for the practices. There are few things I consider: I do not want to feel too full so that it would disturb my performance, such as in the morning practice. On the other hand, I also need to eat a lot and have enough energy so that I won't gas out in the evening practice". (R4 Female basketball player, 5.1.2021)*

Additionally, the importance of diet for optimal recovery was mentioned, meaning that diet optimization is not only needed to perform during practices and games, but it is also essential after practices to recover from intensive training. Therefore, the overall diet and food choices during a long period of time all influence athletic performance and were considered as essential motives influencing respondents' food choices. Moreover, few respondents stated that they had noticed a difference in their competition performance when they have eaten in an optimized way over a long period of time. The improved performance has further motivated them to eat in a way that supports their performance, particularly during the competition season. This goes along with previous researchers' findings, which argue that performance-related motives are heavily dependent on the competition period, where athletes are generally more motivated to eat optimally during the competition season compared off-season (Smart & Bisogni 2001). This finding was



further supported by study respondents, and it was mentioned that they had noticed a relationship between their food choices and athletic performance during the competition season, which further influences them to make certain food choices:

*"My trainings are very intense, so if I don't eat enough, I just don't have the energy to train or recover optimally. This is extremely important when it's the competition season, because then it matters what you have been eating over a long period of time". (R8 Female cross-fit, 6.1.2021)*

Based on the interviews, in sports where weight does not influence sports performance, diet optimization is not seen necessary in terms of macronutrient calculations or calorie counting. Furthermore, respondents mentioned that weight fluctuation between few kilograms is perfectly fine, and that their weight does not matter as long as their performance remains the same. Besides, the game intelligence is seen as an essential part of sports such as basketball and football: therefore, it is possible to compensate the weaknesses in skills or physique with high sports IQ. This further means that the optimal diet is not as influential in sports like basketball and football, where looks or weight do not influence the athletic performance, which also aligns with findings from previous research (Smart & Bisogni 2001; Pelly et al. 2006).

*"Since basketball is not a weight category sports, you can definitely eat a lot and it is perfectly fine if your bodyweight fluctuates between 1-2 kilograms. I feel like basketball is a great sport in a way that you can be on top no matter what your body looks like. For example, when I played in Europe, there was a player in Turkey league, who was the same height as me but was 30 kg's heavier, and she was one of the best players in the league. In basketball, you may compensate your physical feature "weaknesses" with other things, such as with different basketball skills and game IQ, which plays a huge part in basketball." (R9 Female basketball player, 5.1.2021)*

On the other hand, for sports where the game IQ does not play an important role, diet and food choices were considered more important. However, the quantity of the food and

eating enough macronutrients was seen more important than the food's actual content, especially in endurance sports. Respondent 7, whose field of sports is orienteering, stated the following, further suggesting that the food choices are heavily influenced by the sports they play and what their required energy- and macro nutritional quantities are that match their consumption:

*"Orienteering is an endurance sport, which means that the need for right kind of nutrition is extremely important. It's different for example with 100-meter runners: I've heard that Usain Bolt eats chicken nuggets before his competitions, but I feel like with condition sports you cannot do that because your performance lasts for much longer. It is important to note, that if your performance lasts longer than 30 minutes, your body will start to use fats for the energy instead of carbohydrates, meaning that you need to pay attention to the amount of macronutrients you eat, based on the sports you play". (R7 Male orienteering, 7.1.2021)*

Consequently, each respondent had differing views on what is an "optimal diet", since a common statement from the respondents was that each individual should eat in a way that works for them, and everyone should find the optimal diet for themselves by trying out different ways of eating. However, the common nutritional recommendations which guide athletes' food choices, such as consuming healthy ingredients in large quantities, was mentioned by each respondent while discussing how respondents form their food choices in general. As a conclusion, the performance-related motivations continue to be among the core food choice motives of athletes', and if the athletic performance would remain the same or improve, athletes would be open to make more sustainable food choices. Particularly, when the sustainable way of eating is seen as a positive thing for athletes, the likelihood to make sustainable food choices increases, which will be discussed within the following sub-chapter.

#### ***4.2.2 Perceptions regarding sustainable way of eating***

Food purchase decisions and consumption patterns are formed based on individuals' beliefs, perceptions, and knowledge of the perceived benefits of buying and consuming foods (Stepherd & Raats 2006, 7). Moreover, previous research suggests that beliefs regarding the perceived benefits on health and athletic performance may be particularly influential for athletes while constructing their food choices (Birkenhead & Slater 2015, 1515). Based on the interviews, a common belief among respondents was that it could be challenging to combine sustainable, plant-based eating and daily training since sustainable foods are often lighter and have a lower amount of energy, which means that sustainable foods should be eaten in larger quantities compared to animal source foods:

*“I tried once to eat sustainable, plant-based foods for most of the time, and I noticed that I needed to eat much larger quantities than with a regular diet”.* (R1 Female basketball player, 20.12.2020)

Previous research suggests that consumers would be willing to eat more sustainable food products if those would have better nutritional content, such as more protein, vitamins, and fewer calories (Hoek et al. 2011). Likewise, the food quality seemed to matter for professional athletes, particularly from the macro nutritional point of view, where some respondents raised a concern on whether they can receive enough protein and vitamins from sustainable foods. Moreover, respondents who consumed high amounts of meat, dairy, and eggs were concerned whether they could receive enough iron and other nutrients solely from sustainable foods, and they were also concerned that limiting the consumption of animal-source foods would cause vitamin deficiencies in their bodies. However, almost all respondents added that they thought that it is possible to receive all needed nutrients and vitamins from sustainable foods, but it would require more knowledge on how to construct meals properly:

*“Sometimes I wonder whether I receive enough protein, and nutrients such as B-12 from my diet, but I think it is absolutely possibly to receive all the needed macronutrients and vitamins from sustainable diet if I pay attention to it.”* (R6 Female football player, 7.1.2021)

Many respondents thought it might be challenging to receive enough protein solely from sustainable foods, and it would require more planning to obtain all the needed proteins that humans need. For instance, one respondent said that although athletes could receive enough protein from sustainable foods, the amount that they would need to eat, for example, chickpeas compared to meat, is different. Furthermore, it means that they would need to eat larger quantities to receive all the required proteins from sustainable, plant-based sources. One respondent explained the protein ratio of sustainable foods as follows:

*"You need to focus pretty much on the protein intake quite a lot if you eat sustainably: I know that there are proteins in plant-based foods as well, but the ratio is not the same. For example, you might need to eat the whole package of pulled oats in order to receive all the protein from plant-based meals, but if you eat minced meat, the half package is enough". (R7 Male orienteering 6.1.2021)*

Therefore, it could be concluded that some athletes are concerned whether sustainable foods have all the needed proteins to remain their athletic performance and to maintain overall human health. However, some respondents thought it is possible to receive enough protein from sustainable foods. For instance, few respondents, who consider themselves as plant-based eaters, argued that it is possible to obtain enough protein from sustainable foods because sustainable foods, including oat and grains, also contain a lot of protein, which many consumers do not realize. Moreover, some respondents added that consuming protein in overly large quantities is not needed for professional athletes:

*"You can get the needed proteins from sustainable diet. I checked that there are 19,9 grams of protein per 100 grams of chickpea pasta alone, and your body even cannot take more than 20 grams of protein in each meal. Therefore, if you eat more than that, it is just extra work for your kidneys. It is nonsense to drink a protein drink that has over 30 grams of protein, because your body cannot take it". (R9 Female basketball player, 5.1.2021)*

Besides the beliefs regarding the protein intake and vitamins, the general beliefs regarding the suitability of sustainable foods to athletes' lifestyle were discussed with respondents. Many of the respondents used to have a thought that consuming sustainable food is predominantly for ecological and vegan eaters, which still seem to come into their mind while thinking about plant-based eating:

*"When I think about sustainable diet and plant-based foods, it makes me think about hipsters and certain type of people. The stereotype I have of sustainable eaters is that they want to tell it to everyone and try to make other people to eat plant-based". (R7 Male orienteering 6.1.2021)*

However, nowadays, sustainable, plant-based eating is seen widely positive, even for athletes. The respondents believed that sustainability is an ongoing "trend", making it more acceptable for athletes to eat in a sustainable manner. Moreover, one respondent who follows an omnivore diet stated that sustainable eating is a positive and common way of eating, and she feels embarrassed if other people notice that she does not consume sustainable foods. Additionally, a large part of the respondents mentioned that documentaries, especially documentaries with athletes, have changed their general perceptions regarding the suitability of plant-based nutrition for athletes, which has contributed them to consume more sustainable foods:

*"I used to think that sustainable diet is only for skinny green hippies, but the Game Changers document made me think that sustainable diet actually could work for athletes as well". (R10, Female basketball player, 5.1.2021)*

Therefore, it seems that, in general, professional athletes' perceptions and beliefs regarding sustainable, plant-based foods have turned more positive within recent times. The positive perceptions have shifted many athletes to try foods that they would not usually have tried, and it has contributed athletes to make more sustainable food choices. However, even though athletes have positive perceptions and beliefs regarding sustainable food, there is a question of whether they have enough knowledge regarding

the sustainability factors to form food choices that combine athletic performance and sustainability, which is discussed within the next sub-chapter.

#### ***4.2.3 Lack of knowledge regarding sustainability factors***

Besides beliefs and perceptions, nutrition knowledge also acts as a driving motive for consumers food choices (Furst et al. 1996; Parmenter & Wardle 1999; Croll et al. 2006). Based on the interviews, it seemed that many of the respondents do not have a proper knowledge on the positive or negative influences that their food consumption causes for their health or the environment. One respondent said the following, which suggests that in general, athletes do not have enough knowledge on sustainability matters:

*"I've heard that sustainable foods are good for your health, but I don't know specifically what aspects makes it healthier." (R5 Male football player, 7.1.2021)*

Most of the respondents said that they have the knowledge on what they should eat to maximize their athletic performance: they know which foods give them energy, which foods helps them grow muscle, and which vegetables they should eat to receive all the needed nutrients for the human body. However, most of the respondents did not have enough knowledge about the contributions that their food consumption causes to the environment. For instance, when respondents explained their knowledge and views on meat- and dairy production's influences on human health and environment, only those respondents who primarily consumed plant-based foods were able to provide a prompt answer. One respondent stated the following, which suggests that the lack of knowledge acts as a barrier to consume sustainable food products, and it often contributes athletes to prefer foods that are familiar to them. This also aligns with the findings from previous researchers, which suggests that the familiarity is among the primary barriers to consume plant-based meat alternatives (Hoek et al. 2011; Lea & Worsley 2003):

*"I feel like I don't have the knowledge on what meat alternatives or sustainable foods to eat that would have the needed proteins from the food*

*I eat. I just don't know what to eat. When I was a child, I feel like my parents were telling me that meat, chicken, and fish are the only ways to go with and there wasn't actually that many plant-based meat alternatives back then." (R3 Female golf, 5.1.2021)*

Based on the interviews, it seems that the sources where athletes gather their nutrition knowledge are either from school, family and friends, or the internet. Additionally, as already discussed within the previous section, the documentaries on food production have given athletes information and knowledge regarding the influence that their food choices have on the environment, and how sustainable eating is applicable for athletes. The documentaries were described as "wake-up calls", where athletes felt like those immediately influenced their consumption behavior, and they wanted to change their eating habits after watching those documentaries. Therefore, it could be concluded that the more knowledge athletes receive regarding the nutrition and influence of their food consumption on the environment and their own health, the more willing they are to consume sustainable food:

*"While I was studying in United States, I participated in environmental ethics courses, which gave me knowledge on the environmental impacts that our consumption causes on the planet health. Besides, many of my friends and teammates followed a plant-based diet, which influenced me to try that as well. They also "forced" me to watch all the vegan documentaries, which made me more informed about the topic, even though those are always quite provocative." (R10 Female basketball player, 5.1.2021)*

Besides, articles and posts in social media seemed to be the channels for many athletes to gather knowledge on sustainable eating, which indicates that media, television, and documentaries are among the primary sources of information for many athletes. Respondents mentioned that gathering the knowledge through those channels is easy, convenient, and does not require much effort. However, respondents thought it is essential to have good media literacy skills while gathering information online from social media

posts or commercialized documentaries since the data is not always accurate, and it is vital to do some own research before making any conclusions.

Besides, it seemed that athletes do not have enough knowledge on the benefits of consuming sustainable food from the health or environment perspective. One of the respondents' most common statements was that they do not know the most sustainable food option from an environmental perspective since there are so many food products in the grocery stores. Additionally, sustainability is a broad term with different dimensions, which includes considering biodiversity, water, animal welfare, plant health, and food waste (FAO 2018), meaning that there are a broad variety of factors to consider while pondering with what is the most sustainable food choice:

*"If you have the knowledge, it is easy to make the sustainable choice. However, I often feel like I don't even know what actually the most sustainable or ethical option is. Are tofu or soy-products better for the environment than locally produced meat? I feel like it is hard to know as a consumer, what is actually the most sustainable option." (R1 Female basketball player, 20.12.2020)*

It seems that the level of education influences how much knowledge athletes have regarding sustainability and diets. One respondent stated that if an athlete does not have a university education, it can be challenging to make sustainable food choices. Based on the interviews, it seemed that those respondents who had gone to university after high school were more educated about food production and sustainability in general. This also aligns with previous research findings, which suggest that consumers who are highly educated are also more likely to consume plant-based foods (Hoek et al. 2011). However, respondents were open and willing to receiving more information on nutritional matters, and they would particularly like to receive more knowledge on sustainability, environmental issues, and the contribution of food to overall health, which could further make them more motivated to make sustainable food choices. Moreover, the health motives of athletes to consume sustainable food is discussed within the following subchapter.



#### ***4.2.4 Health motivations as contributor to eat sustainable food***

Health reasons and the perceived benefits from the human health perspective are among the core intrinsic motivations to make sustainable food choices. Previous research has presented scientific evidence on the influence of diet on human health, where heavy consumption of meat is associated with negative impacts on health, whereas the consumption of plant-based foods contributes to improved health (Tuso et al. 2013; World Cancer Research Fund 2013; Godfray et al. 2018). The health reasons include various dimensions, such as nutritional content of food, illness management, weight-control, and digestion matters (Stepherd & Raats 2006, 7). Besides, the health reasons also include how athletes feel after eating food and which types of foods make their bodies feel nourished and energized. During the interviews, it was noticed that many of the respondents did not have proper knowledge of the health factors, but the light and energized feeling in their body was among the core reasons which motivated them to eat in a sustainable way. Additionally, the improved digestion was mentioned by athletes to be one of the motivating factors to consume sustainable foods:

*"I try to have one or two sustainable eating days per week, because it makes me feel light. If I would eat meat every day, I just would not feel good. I know that if I eat meat, the things that the animal has eaten will contribute to my health as well, and I am aware of that fact. Therefore, I often think how eating meat contributes to my health and overall well-being". (R3 Female golf, 5.1.2021)*

However, respondents' concerns regarding the suitability of sustainable foods for athletic lifestyles was mentioned, where many of them thought that they feel weak during the practices if they solely consume sustainable foods. Moreover, few respondents also mentioned that they needed to stop consuming sustainable foods because they were always hungry during the practices. However, these respondents also added that they did not optimize their macro-nutritional intake, and they did not have the proper knowledge on which foods they should eat to feel better. This further supports the importance of nutritional knowledge while making food choices, as discussed within the previous sub-chapter:

*"When I eat plant-based foods, I'm just always left feeling hungry. It makes me feel weaker during the practices and my energy levels have not been as high than with a "regular" diet". (R7 Male orienteering, 7.1.2021)*

Many of the respondents stated that they think sustainable foods have higher amounts of nutrients and vitamins and that eating plant-based foods helps maintain health and avoid high blood pressure and diabetes. Another respondent added that she believes that plant-based foods help with curing inflammations, and therefore it could also positively contribute to recover faster from injuries and to maintain a healthy body. Some respondents who followed mainly a plant-based diet had also noticed a difference in their overall health, and they thought that eating sustainable foods improves their athletic performance. Moreover, these respondents further explained that once they started to consume more sustainable products, the health benefits that contribute to their overall athletic performance - including better sleep, clearer mind, and fully recovered body - are among the core intrinsic motivations which makes them to consume sustainable foods. Also, some respondents stated that they would be motivated to eat sustainable foods if they would have the scientific evidence that it would positively correlate to their athletic performance and overall health:

*"The most influential thing of me sticking with eating the plant-based foods is the feeling in my body that I've had once I cut out meat. When I eat plant-based foods I rarely have the feeling that I need to sleep after my dinner, which is often how I feel if I eat meat. I've also noticed a difference in my energy levels during practices". (R2 Male basketball player, 21.12.2020)*

Although many athletes said that the overall well-being motivates them to eat sustainably, there were also arguments against it. For instance, one respondent noted that they did not notice any difference in how they felt (R9). One respondent raised their concern regarding the health-aspect of sustainable foods as follows:

*"I am not sure how much healthier a vegan minced meat is for you since it is very processed and does not seem like a natural food to eat. I'm not sure*

*if plant-based meat alternatives are necessarily the best option health-wise, even though it would be better for environment". (R10 Female basketball player 5.1.2021)*

All in all, the intrinsic motivations of maintaining and improving health were seen as important while making food choices. This also aligns with previous research, which suggests that health is an influential motive for athletes, particularly if the health benefits are associated with greater athletic performance (Pelly et al. 2018). Therefore, it can be concluded that the perceived health benefits and the feeling in athletes' bodies from consuming sustainable foods could be among the main motivations for athletes to make sustainable food choices. Finally, the last sub-chapter of the intrinsic motivations discusses about the importance of environment factors, which possibly influences athletes' food choices. The last section will reveal how essential athletes consider the ecological impacts of food consumption, and how they consider ethical aspects while making food choices.

#### ***4.2.5 The environment matters do not motivate athletes***

Previous research has argued that there is a strong relationship between environmental motives and buying behavior: In general, the more environmentally concerned a consumer is, the more likely they are to buy sustainable foods (Grunert & Juhl 1995). Therefore, it could be concluded that consumers who do not consider environmental factors and planet health important, are not as likely to consume sustainable foods as environmentally conscious consumers (de Boer & Aiking 2011; Hoek et al. 2011). Besides, it has been argued that consumers who do not have strong ethical value orientations are likely to favor meat over plant-based meat alternatives (Hoek et al. 2011).

The general perception was that considering nature and taking care of the environment is an important matter, and everyone should somehow contribute to taking actions towards a healthier planet. However, in general, the environmental- and animal welfare factors were not seen influential factors that would change the food choices of athletes. Moreover, almost all respondents thought a sustainable way of living is necessary, but

they were not willing to change their eating habits solely because of environmental factors. Few respondents explained their view on the ecological factors while making food choices as follows:

*"The health reasons and the perceived health benefits for sustainable foods are more important for me than the environmental aspects. I would not sacrifice my health for the environment." (R10 Female basketball player, 5.1.2021)*

*"I am aware of the issues regarding animal welfare and environmental effects related to meat consumption, but at the end of the day I choose what I eat based on the feeling that I have and what makes me feel good." (R3 Female golf, 5.1.2021)*

*"I know I should be making more ethical and environmentally healthy food choices, and I think it is an extremely good and positive thing if someone follows a plant-based diet. However, unfortunately those factors alone will not influence me to change my diet." (R4 Female basketball player, 5.1.2021)*

Besides, respondents mentioned that they believe it is essential to consider sustainability aspects while making other everyday consumption decisions, such as choosing to walk or bike instead of using a car and limiting flying with a plane. Some respondents thought that those environmental acts are more influential and effective for the environment than paying attention to the sustainability aspect while making food choices:

*"I feel like the environmental things are not as important to me, and that would not solely be the reason why I would limit the consumption of meat. I know that there are many other things that also negatively influences the environment, and therefore I would maybe try to do other things to contribute to healthier environment, such as limiting the use of cars and other transportation ways." (R8 Female cross-fit, 6.1.2021)*

However, some athletes thought that considering environmental aspects while making food choices is vital for athletes as well, and it is not only a matter of "green" consumers. Some respondents mentioned that making sustainable food choices is a relatively easy way to contribute to a healthier environment than other forms of environmental acts. For instance, some respondents thought that athletes already live a reasonably unsustainable lifestyle: they use motor vehicles in their everyday lives while they drive with a car, bus, or plane to competitions and practices. Therefore, respondents believed that it does not require much effort to consider environmental factors while making food choices, since that is something that they are actually able to influence on:

*"I feel like athletes often live already pretty unsustainable lifestyle, since we travel a lot by car and plane. That's why I think it is important to compensate that somehow, and that's why I tried at first to limit my meat intake and eat as sustainable as I can". (R6 Female football player, 7.1.2021)*

Based on the interviews, the environmental aspects were seen as more essential for those who already primarily consumed plant-based foods, compared to athletes who mainly eat animal source foods. These respondents mentioned that they are particularly concerned about the influence on the environment that human consumption causes, and in general, they thought that each consumer could contribute to the health of the environment with their food choices:

*"I think that environmental factors are more important than health reasons. I don't remember the numbers correctly, but I've heard that if one individual would eat one plant-based meal during the day, it saves almost 200,000 gallons of water per year. Therefore, I feel like food choices in general are important and it is good to make better food choices each day, but you don't necessarily need to be on a strict diet." (R9 Female basketball player, 5.1.2021)*

Besides, some respondents thought they do not have the proper knowledge of how their diet contributes to the health of the environment, and what is the most sustainable options from the environmental perspective. However, even though athletes would have the knowledge, it seems that environmental aspects are not enough alone to make athletes motivated to make more sustainable food choices. Thus, it can be concluded that the health motives, the feeling in athletes' bodies, and other food choice motives are more influential motives that influence athletes' sustainable food choices, particularly for those athletes who do not already follow a plant-based diet.

### **4.3 The influence of extrinsic motivations in athletes' food choices**

The last chapter of the findings covers the impact of athletes' extrinsic motivations to consume sustainable food. Based on the interviews' findings, the extrinsic motivation is divided into three main themes: 1) friends, family and partners, 2) coaches and other athletes, and 3) the environments as a whole. The last theme also includes the influence of media, which was shortly discussed with respondents.

#### ***4.3.1 Influence of friends, family, and partners***

The first sub-theme covers friends and family's influence on athletes' food choices and motivations to eat sustainable food. Previous research suggests other people influence individuals' eating behavior, and people tend to modify their food choices according to the context and their external environment (Bublitz et al. 2010; Herman, Roth & Polivy 2003). Besides, it has been found that consuming meat alternatives and plant-based products depends on the perceived appropriateness of others (Herman, Roth & Polivy 2003). However, it has been argued that individuals who are intrinsically motivated and are self-driven to consume sustainable food products are not as prone to be influenced by external factors (Ali et al. 2020, 282-284).

Overall, respondents thought that the family's impact is not significant, primarily because athletes already live by themselves, or alternatively with their friends or partner. Therefore, many respondents' common thought was that family does not significantly

influence their food choices anymore. Still, there are certain habits learned from childhood that act as guidelines for their food choices:

*"I remember while I was little that my dad emphasized the importance of vegetables. We always needed to have one half of the plate filled with vegetables, and I don't even remember times when we wouldn't have to eat those. Therefore, it is one of my core things when I form my food choices nowadays." (R1 Female basketball player, 20.12.2021)*

Some respondents mentioned that their food choices depend on the social context, meaning that they construct their food choices depending on the company they eat with. For instance, respondents mentioned that they do not want to refuse to eat certain foods when someone else has cooked for them. This further means that while eating as a unit, family members' feelings and the urge to please them can be more influential factors than individual's own needs and wants while making food choices. Furthermore, it was mentioned that while eating with family, respondents are willing to eat anything available and offered to them, even though they would not choose to eat those foods if they were alone. On the other hand, few respondents mentioned that their own food choices had contributed to their family members changing their dietary habits, and nowadays, their families also consume more sustainable foods because of them. One respondent said the following regarding the influence of family:

*"I eat differently when I am at home: my mom usually cooks recipes she likes and my brother works in slaughterhouse, meaning that we also eat meat when I am at home. I do not want to say no to their cooking, so then I just eat whatever I get." (R10 Female basketball player, 5.1.2021)*

Therefore, it could be concluded that family influence in food choices is only influential while eating as a unit. However, friends' impact while making food choices was seen more influential: many of the respondents explained that they often discuss about their diets with their friends, which might contribute athletes to eat similarly to their friends. Consequently, respondents explained that if someone from the friend group is a plant-based eater, it affects the whole group to eat similarly. For instance, one respondent

who is a plant-based eater but occasionally eats meat stated that their food choices depend on who they spend time with: if they spend time with vegetarian friends, they are also likely to eat plant-based foods. Another respondent stated that they often feel inspired after cooking plant-based meals with friends, and that they are more willing to try new plant-based food recipes, if they have already cooked the meal before with the same ingredients. Therefore, it seems that friends' extrinsic influence, combined with the familiarity aspect of food, could contribute athletes to consuming sustainable foods. Additionally, it appears that the transition towards a more sustainable overall diet is often originated from friends and the people athletes spend the most time with, such as roommates:

*"I have limited my consumption of red meat, mainly through the stigma around it. I just rarely buy it and now when I live with my roomies who eat plant-based, it has influenced me as well to eat more plant-based foods."*  
(R4 Female basketball player, 5.1.2021)

Besides friends, most respondents identified the influence of their partners in their food choices. Many respondents stated that their partner had introduced them to sustainable eating, which had influenced them, in turn, to continue to eat that way, even if they would not live together anymore. Additionally, almost all respondents agreed that they would consume plant-based products if their partner would do the same, since it is convenient and saves time, which is essential for athletes as suggested by previous research (Smart & Bisogni 2001; Robinson & Hetherington 2005; Long et al. 2011). Therefore, athletes are not as likely to cook sustainable food if they only cook for themselves, because it is more time-consuming and requires a lot of effort. Few respondents explained the influence of partners as follows:

*"If I would have a partner, who would be an athlete as well and he would eat plant-based foods, I would definitely eat plant-based as well."* (R4 Female basketball player, 5.1.2021)

*"My ex was a vegetarian, and with her I got introduced to plant-based eating and the environmental impacts of diet. We once tried a "Vegan-*



*Challenge" where we ate plant-based foods for one month. After one month we just basically continued to do that because it was quite convenient, and it felt good. After our breakup I just continued to eat in a similar way because it was already a habit of mine." (R2 Male basketball player, 21.12.2020)*

*"There aren't many friends of mine or athlete friends who would eat plant-based foods, and the ones that are, are mainly "forced" by their girlfriends to eat that way. If my girlfriend would put me on a plant-based diet and would help me to cook the meals, it would not be a problem to eat plant-based foods. When you live alone, it is harder because you would need to cook all the meals by yourself, which is time-consuming." (R7 Male orienteering, 7.1.2021)*

Therefore, it can be concluded that athletes would be motivated to eat in a more sustainable way if their friends or partners would also eat similarly. Athletes thought that following a similar diet as their partners or friends is convenient since it saves time and money, further supporting the finding that athletes' most influential food choice motive is convenience. Moreover, it seems that the taste, price, or the need for optimal food in terms of athletic performance are not as influential food choice motives as thought (Smart & Bisogni 2001; Long et al. 2011; Thurecht & Pelly 2019), since all of the respondents agreed, that the external environment of friends and partners influences how they form their food choices in certain situations. Besides friends, family and partners, the influence of coaches and peers are discussed within the second sub-theme of the extrinsic motivations.

#### ***4.3.2 Influence of coaches and other athletes***

Coaches' influence is mainly considered as the advice and guidance on nutrition, which is received during the different phases of athletes' career (Smart & Bisogni 2001; Long et al. 2011). For instance, advice can include the quantities that athletes should eat, which foods they should consume, and which foods they should avoid. Findings from previous

research suggest that coaches' advice influences athletes' diet (Long et al. 2011), but the existing studies have mainly focused on young athletes, who could be more prone to external pressure than adult athletes are.

A majority of the respondents stated that they rarely receive nutritional advice from coaches, and the only examples they could recall were from their childhood. In general, athletes thought that the advice they have received is not thought through to the end, and coaches do not often realize the importance of an individualized way of eating: the diet that works for one athlete does not necessarily suit another athlete. Besides, few respondents mentioned that they had received feedback and advice on weight control during their adulthood. These respondents further stated that coaches should not give any feedback or advice on weight control or diet optimization matters because it always requires a professional to give correct advice and knowledge on such issues:

*"I remember one time when I received nutritional advice from our coach, and it did not consider how different our bodies were and what did each individual needed. First of all, we were all different height, and our body compositions were so different. I feel like I have got a trauma from that, so I would not listen to that kind of things anymore. If someone would advise me now, I would need more facts behind it, and I would not blindly believe what they are saying and follow it." (R10 Female basketball player, 5.1.2021)*

Furthermore, this suggests that athletes feel like they have better nutritional knowledge than their coaches, which further means that they have more trust in their own knowledge than external sources. Moreover, it could be concluded that athletes already have a solid way of eating, and they know how to make food choices that support their athletic performance. Therefore, respondents raised concerns about whether coaches even have the correct nutritional knowledge. Therefore, it was emphasized that athletes should be careful with whom to listen to and to be critical on what kinds of advice to follow from coaches:

*"I listen to coaches and I do appreciate their opinions, but if you are not a professional with correct knowledge, I would not necessarily want to have advice on that field. I would rather like my coach to send me to a nutritionist who would then give me the right advice I need." (R4 Female basketball player, 5.1.2021)*

However, all of the respondents said that they had not received any guidance anymore now when they are professional athletes. This further suggests that once athletes are adults and the athletic performance remains at the top level, coaches do not want to intervene on athletes' food choices. Therefore, it could be concluded that coaches can trust that athletes make the correct food choices that support their athletic performance, meaning that they do not give nutritional guidance to them anymore, and thus, the influence of coaches in athletes' sustainable food choices is relatively small.

Besides advice from sports coaches, the influence and advice from nutritional coaches were discussed. Most of the respondents had received guidance from nutritional coaches at some stage in their careers, mostly when they were either in high school or in college. Two respondents who had studied in the United States stated that in general, athletes in Finland already have a solid knowledge base on what is the "correct nutrition" for athletes. Besides, they thought that Finnish athletes eat reasonably sustainable and healthy compared to athletes from other countries.

Additionally, some respondents stated that they would change their food choices and food consumption towards more sustainable if they would receive a ready-made meal plan from a professional. Moreover, if a nutritional coach would make a plant-based diet for athletes, which would be planned according to their consumption and energy intake needs, athletes would at least try it. However, most of the respondents thought that even though a nutritional specialist would make a plant-based meal plan for them, they would not follow it if they would notice negative impacts on their bodies or athletic performance. Therefore, it seems that athletes already know the quantity and quality of the foods that work for their bodies, which further suggests that professional athletes would not simply consume more plant-based foods due to extrinsic influences of coaches or nutritional coaches:

*"I once received a meal plan from our physio coach, but the meal plan did not fit for me and I felt like it wasn't formed correctly. Sometimes it seems like the coaches, or even professionals who have knowledge on the nutritional matters, do not have enough understanding of the individual needs and what is suitable nutrition for each athlete." (R1)*

Lastly, the influence of other athletes was discussed during the interviews. The impact from fellow athletes was generally seen as more influential than coaches or nutrition coaches: the respondents thought they are more likely to be influenced by peers because they know that the main motives influencing their diet also aims to maximize athletic performance. Moreover, athletes mentioned that they would be likely to try different foods or modify their eating patterns if they noticed a positive difference in other athletes' performance due to following a sustainable diet. Interestingly, only one respondent stated that they would not be influenced at all by other athletes' food choices (R7), but otherwise, respondents agreed that other athletes could affect their food choices:

*"If it would be someone from my team whose positive results I could see from a close distance, I could for sure try a plant-based diet. Then the price, convenience, or anything other won't matter since the main thing for me is the optimized performance factor. If I would get a plant-based diet plan from someone that would guarantee as good performance as I get from animal-sourced foods or even better performance, there would not be any reason why I would not eat it then." (R4 Female basketball player, 5.1.2021)*

*"If an athlete who I know would tell me that they eat sustainable foods and that they feel it contributes positively to their performance, I would maybe try it. However, if for example LeBron James would follow a certain diet, I would not necessarily try it, because our bodies and calorie needs are totally different." (R10 Female basketball player, 5.1.2021)*

However, few athletes mentioned that although they could possibly modify their food choices according to their fellow athletes, they emphasized that each athlete needs to

figure out what works for their body and not blindly change their whole diet based on the fact that it works for someone else. For instance, one respondent said that they would try plant-based foods if other athletes consume or suggest those for them; however, the decision on whether they will eat it in the future depends on the feeling they have on their bodies after consuming it.

Lastly, the influence of media on athletes' food choices was discussed during the interviews. Moreover, media's impact includes how ads, social media accounts, and posts on nutritional guidance influence athletes' food choices. During the discussions, respondents emphasized the importance of good media literacy skills while spending time on social media. For instance, many professional athletes have commercial sponsors, which means they need to promote certain food products on their social media accounts. In general, respondents thought that social media and ads in other athletes' accounts do not influence their diet and food choices since they have good media literacy. Moreover, one respondent said that they know how commercial some of the social media posts are, and well-planned posts in social media do not represent the whole truth regarding what people eat. Another respondent added that they would not change their diet or modify their food choices according to what people say on social media because they already know what works for them, and it does not matter what other people eat:

*"Many cross-fitters show in their social media accounts what they eat daily, and many of them are doing meal prepping, calorie and macronutrient counting, and follow a strict, well-planned diet. I can see how it could influence many athletes to eat in a certain way, but thankfully it has not influenced me since I feel like I like to do things in my own way and I know what works for my body and myself. You always need to have some sort of filter when you look at the advice on social media or ads."*  
(R8 Female cross-fit, 6.1.2021)

All in all, it seems that adult professional athletes are familiar with ads in media, and the influence of media on athletes' food choices is close to none. Moreover, while asking about social media's contribution to athletes' food choices, the conversations were short since everyone stated that it does not influence their food choices or overall diet.

However, more detailed research on the influence of media could be done in the future to better measure the impact of different media channels on athletes' food choices.

### ***4.3.3 Challenges of the external environment***

The last section of extrinsic motivations covers the challenges of the external environment in athletes' food choices. During the interviews, the respondents were asked to explain the challenges they face in their everyday lives if they eat or want to eat sustainable food. Three main themes arose from the conversations: challenges while visiting home, challenges during the away-game trips, and the negative vibe around plant-based eating. For instance, some respondents felt they were forced to modify their food choices when visiting their family, because they do not want to cause any difficulties or hurt family member's feelings if they would refuse to eat certain foods. Therefore, even though there are no physical barriers that would prohibit athletes from refusing to eat meat, the need to avoid negative feelings among other people acts as a motivator to make certain food choices. This finding goes along with findings from previous research, which suggests that people are likely to adapt their eating behavior according to their peers (Higgs & Thomas 2016):

*"If I go to visit my family, I might eat meat occasionally. I have told them that I don't personally buy meat, but I can eat it, because I do not want to refuse if they cook for me." (R6 Female football player, 7.1.2021)*

Another external challenge mentioned by respondents was the game trips and the limited options within restaurants. Many respondents stated that their salary consists of a free meal, meaning that they get a free lunch or dinner from their sports club every day. These respondents further explained that the food options are limited in those restaurants and that they often do not have the opportunity to choose between a "regular meal" and a plant-based meal. Moreover, they added that it depends on the country they live in on whether they can make sustainable food choices. For instance, one respondent stated that there are plenty of sustainable options in Nordic countries in both grocery stores and restaurants, but in other countries, such as the Czech Republic, the whole culture revolves

around meat, which makes it challenging to make sustainable food choices. However, even though the geographical location influences food choices, most of the athletes agreed that regardless of the country, the most significant external challenges arise from away-game trips, when the restaurants do not offer many options for sustainable eaters. One respondent stated the following:

*"Following a strict plant-based diet feels a little bit too extreme and can be difficult to follow. Being a flexitarian is much easier: then whenever we would have a game trip and we would go to eat food after the game, you can just order whatever you want to eat. If you have to choose the plant-based option every time, it can actually be pretty challenging. Can you get enough nutrients and is the food actually healthy?" (R1 Female basketball player, 20.12.2020)*

Furthermore, many respondents added that even if restaurants would offer sustainable food options, they often choose animal source foods just because they do not want to cause any attention, negative feelings, or inconvenience to others. They further explained that choosing to eat a sustainable meal can lead them to feel anxious if they need to justify their reasons for choosing plant-based foods to other people. Moreover, respondents said that they do not want to cause any difficulties to other people, for instance, regarding the price of food. Respondents explained the feelings associated with choosing sustainable meals during their game trips as follows:

*"I've said to my team that I didn't want to eat red meat, but sometimes you just have to eat whatever is given to you. Sometimes I am afraid to say that I don't want to eat a minced beef, and then I usually just stay silent because I don't want to draw any attention on me or be difficult." (R6 Female football player, 7.1.2021)*

*"If we go to a restaurant to eat after our games, I don't want to draw any attention on me or my special diet. I don't want others to ask questions like "why are you eating that kind of food"." (R2 Male basketball player, 21.12.2020)*

*"I don't want to bother anyone else with my vegetarian food choices. Especially when someone else is paying for my dinner, I just don't want them to feel disrespected if I would be picky and not eat the dish I get for free. Also, sustainable options are often more costly, so I don't want their money to be wasted on my specific diet." (R10 Female basketball player, 5.1.2021)*

Lastly, the negative stigma around sustainable eating was discussed during the interviews. Even though plant-based eating is widely accepted nowadays, and many people have started to eat more sustainably, there are still negative feelings associated with plant-based eating among athletes. Moreover, opposing opinions from others often arise while eating as a unit with fellow athletes. Besides, some respondents explained that there is still a negative "vibe" around plant-based eating: people might not necessarily share their negative opinions, but they can act passive-aggressively and question whether it is a correct way to eat for athletes. One respondent stated the following regarding the matter:

*"It is alright for me if people don't cook plant-based meals for me if I go to spend time with my friends or if I go to a party. However, I hate the negative vibe that I receive from others if I refuse to eat meat. The fact that other people are so negative about it makes me really upset." (R6 Female football player, 7.1.2021)*

However, it was widely agreed that even when other people would have negative opinions regarding plant-based eating, it does not solely influence athletes to change their diet or food choices due to external sources. Often, it can even arise the opposite impression in them, as one respondent stated:

*"When I announced that I tried a plant-based diet, I only received negative feedback from others. People only made fun of it or even "bully" me: I used to receive comments that "it is such a gay thing to do" or something other which is so out of context- -This made me think like, "why do you have such*



*negative feelings about it, have you ever tried it?" But then I just think like okay, they are probably not the type of person who I want to have this conversation with if the things they say are on that low level. It has not influenced me to not eat plant-based foods, but I just wonder why they have such strong feelings on someone else's diet." (R2 Male basketball player, 21.12.2020)*

Overall, it seems that the extrinsic motivations have some influence on athletes' food choices when the impact comes from a close distance, including friends, partners, or teammates. Moreover, the negative feelings associated with plant-based eating can act as a barrier to consuming plant-based foods, if athletes spend time with people who have strong opinions towards that. Moreover, it seems that athletes do not want to cause difficulties for others, and their urge to please people around them can outweigh their intrinsic motivations to eat in a certain way. Therefore, it can be concluded that some challenges of the external environment act as a barrier to consuming sustainable food, further suggesting that athletes consume more plant-based foods when they only need to consider themselves or if they spend time with people who eat similarly.

## 5 CONCLUSIONS

This chapter outlines the conclusions of the study based on the original research questions and theoretical framework. Consequently, the theoretical contributions and the managerial implications are presented, as well as limitations of the study and suggestions for future research.

### 5.1 Discussion

Professional athlete's motives for consuming sustainable food were found by exploring multiple factors, including personal values, food choice motives, and intrinsic- and extrinsic motivations. As the food choice decision process by Furst et al. (1996) suggests, food choices are complex processes that are influenced by the individuals' life course, various influences, and personal food choice motives (Furst et al. 1996, 256). Research has shown evidence that the fundamental values - for instance, the universalism and benevolence values - could contribute to increased sustainable food consumption (Pinto et al. 2011; Ladhari & Tchegna 2015; Coppola et al. 2017; Kuswach, Dhir & Sahar 2019). However, this thesis could not contribute to such findings, since the interviews could not go as deep to the subject of the influence of core personal values on food choices. Nevertheless, as suggested by the value theory of Schwartz, consumers face the dilemma of not being able to consider all their values at once while making consumption decisions. Therefore, consumers need to negotiate between their values, which is contributable to the field of food choice motives as well: consumers can only act in favor of one food choice motive based on the hierarchical structure of importance, which further indicates that athletes need to prioritize between their personal values and motives while making food choices. Consequently, it could be suggested that athletes who consider the environment motives as the most important for themselves, are also motivated to make sustainable food choices.

Previous research argue that athletes' food choice motives are heavily dependent on intrinsic motivations, such as performing at the peak level in trainings and competitions (Smart & Bisogni 2001; Long et al. 2011; Meyer & Requant-Closa 2017, Pelly et al.

2018). Besides, performance-related motives also include the dimensions of health and weight, such as maintaining a healthy weight and making food choices that support athletes' overall health, which is among the core intrinsic motivations of athletes' (Smart & Bisogni 2001; O'Connor, Olds, & Maughan 2007). Although the health- and weight motives have been argued to be among the most influential factors influencing consumers' food choices, the weight-motive, in particular, was not a significant motive for athletes. This could be explained by the fact all of the respondents were from skills- and endurance-based sports, where the weight or looks do not influence the athletic performance as much as in weight-category or aesthetics sports (Byrne & McLean 2002; Rodriguez et al. 2009).

Although some researchers argue that consuming plant-based food contributes to better human health (Yokoyama et al. 2014), it does not motivate athletes to eat more sustainably, which seems to be due to limited knowledge on nutrition and impacts of diet to their own health and environment. Furthermore, food choices and the motives for food choices are suggested to heavily depend on nutritional knowledge (Blennerhassett et al. 2019), which is often limited among athletes (Cockburn et al. 2014; Hoogenboom et al. 2009). Therefore, the lack of knowledge can act as a barrier to make certain food choices, which further indicates that limited knowledge in sustainability factors can act as a barrier for making sustainable food choices. This aligns with the findings from this research, where the lack of knowledge regarding sustainability matters was among the key barriers that prevent athletes from consuming sustainable food. Besides, the influence of knowledge in athletes' food choices was even more essential than previously thought (Heaney, O'Connor & Michael et al. 2011; Spronk, Kullen & Burdon et al. 2014), and it seems that the lack of knowledge may outweigh the other common food choice motives, which are discussed within the next sub-chapter.

## **5.2 Theoretical contribution**

The main food choice motives influencing athletes' food choices have been argued to be taste, convenience, price, health, managing relationships, and environment (Connors et al. 2007; Shepherd & Raats 2006, 7; Thurecht & Pelly 2019, 620). Within this research, the motives to eat sustainable food were further divided into three dimensions: values, intrinsic motivations, and extrinsic motivations. This study's findings do not disprove the

previous findings but instead provides new perspectives and specifications, illustrated in figure 3. This study suggests that the food choice motives of price, convenience, and taste were found to have a likewise importance as presented in previous research on athletes' food choice motives (Smart & Bisogni 2001; Long et al. 2011). Besides, this study supports the common understanding of athletes' food choices that intrinsic motivations, including performance-related motives, nature of sports, and athletes' busy schedules (Smart & Bisogni 2001; Long et al. 2011; Meyer & Requant-Closa 2017, Pelly et al. 2018), are without a doubt among the key factors influencing athletes' sustainable food choices. Besides, the previous findings regarding the influence of extrinsic motivations, such as family, friends, partners, and other athletes in athletes' food choices, seemed to have a more minor impact than previous research suggest (Smart & Bisogni; Mageau & Vallerand 2003; Long et al. 2011; Ono et al. 2012) although the external sources seem to reflect on athletes' sustainable food choices in certain occasions.

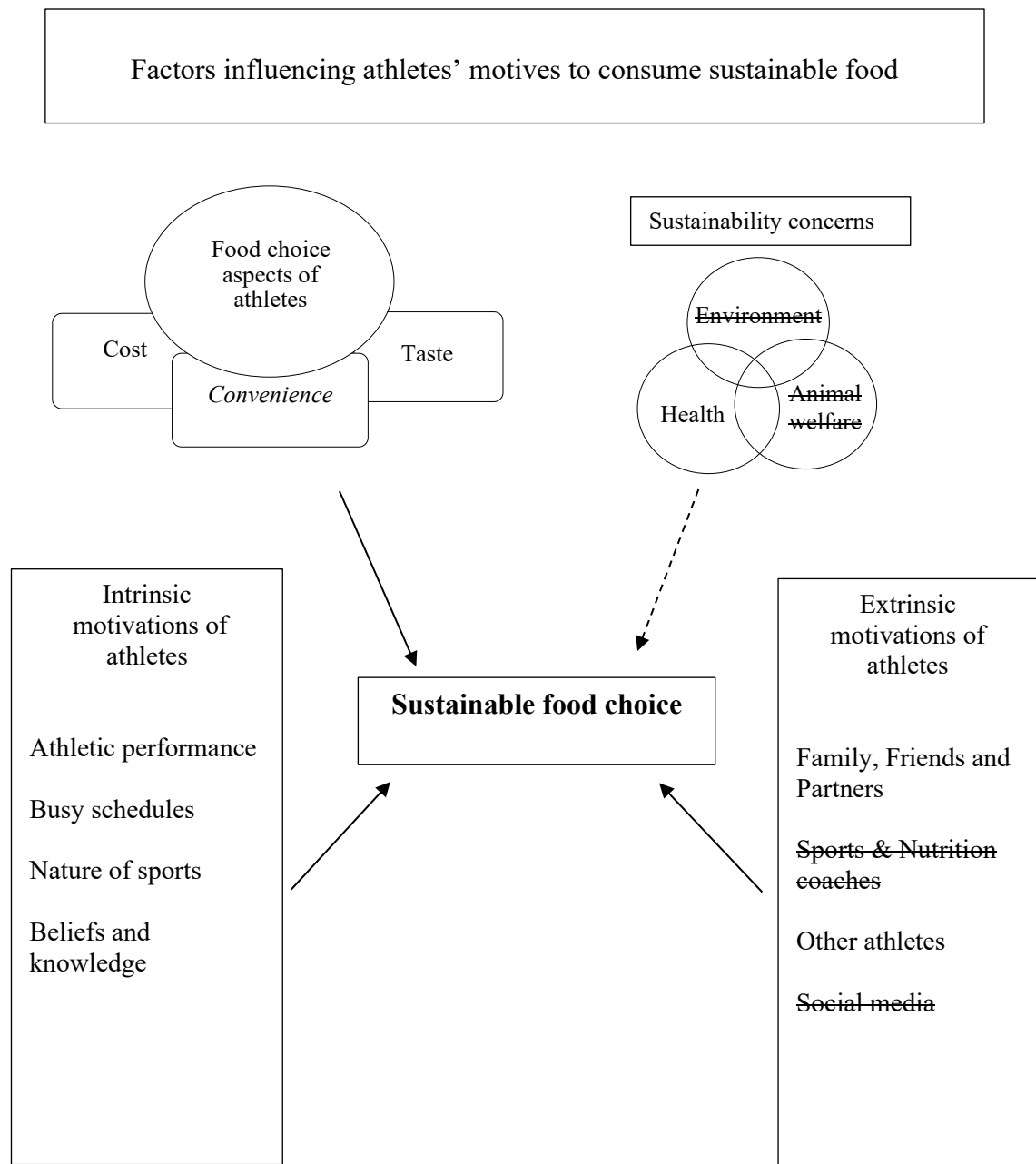


Figure 3 Revised version of the theoretical framework

An updated version of the theoretical framework has received additions, and some of the parts are dropped out. The food choice motives of convenience, taste, and price motives remain at the figure since those motives were considered to have the greatest influence in athletes' sustainable food choices. Both price and taste, were found to have a

significant influence on athletes' food choices: moreover, those two motives seem to be interconnected, where athletes want to consume foods that have a combination of low price and high quality in taste. Based on the findings, it can be concluded that high cost seems to discourage athletes from buying sustainable foods, and many athletes wish that plant-based foods would become cheaper in the future. However, the taste of plant-based foods is considered enjoyable, flavorsome, and tasty, which encourages and motivates athletes to buy and consume those kinds of foods.

The most influential motive influencing athletes' extent to consume sustainable food is convenience, which is in italics within the figure to demonstrate the importance of that motive. It seems, that athletes want to consume foods that are easy to prepare that do not require long cooking times. Therefore, professional athletes are not motivated to cook meals that require a lot of time, and they are not willing to put in more effort to cook sustainable meals, if those are more difficult to prepare than animal source foods. Additionally, it could be suggested that athletes are open and willing to buy sustainable foods, as long as it is convenient for them. Besides convenience, the intrinsic motivations, mainly performance-related factors, were proven to significantly influence athletes' food choices, which aligns with the findings from previous research (Smart & Bisogni 2001; Long et al. 2011; Meyer & Requant-Closa 2017, Pelly et al. 2018). Therefore, the possibility for improved athletic performance or improved overall health due to consumption of sustainable foods, further motives them to make more sustainable food choices.

Within the figure, the sustainability factors of environment and animal welfare are strikethrough since those motives could not be enough alone to motivate athletes to make sustainable food choices. The health motive stays within the figure, since it was concluded that the health factors can motivate athletes to consume sustainable foods. However, since the food choice motives of convenience, taste, and cost, as well as intrinsic and extrinsic motivations seem to outweigh the value of health, the health motive is connected to the box of sustainable food choice with an intermittent arrow. As discussed, it could be concluded that the gaps in knowledge regarding sustainability matters act as a barrier to buy sustainable food products, where many athletes ponder which kind of food choices they should make to foster the health of the environment. Therefore, although sustainable factors are essential for athletes, they do not have enough knowledge or tools to construct

the most sustainable food choices that would improve their health and athletic performance.

Although athletes' have a limited knowledge on sustainability matters and cooking skills, they would like to receive more knowledge on how to make sustainable options, primarily if it is obtained from convenient sources, such as media. For instance, most of the athletes have watched the Game Changers documentary, which has influenced them to view sustainable foods as a potential contributor for an improved athletic performance. This, in turn, has motivated athletes to change their eating patterns, and it can be concluded that the more accurate information athletes receive from external sources, the more likely they are to change their eating habits towards more sustainable. On the other hand, although athletes would be informed on environmental matters, it would not be solely enough to change their consumption habits towards more sustainable. Therefore, the knowledge on the health- or athletic performance benefits that consuming plant-based foods would give to athletes, could be more motivating than providing information on environmental factors.

Generally, the attitudes and beliefs that influence the intrinsic motivations to consume sustainable foods have changed for the better, which has ultimately led athletes to eat more sustainable foods. The general opinion regarding sustainable, plant-based eating is positive, which has encouraged athletes to consider the sustainability aspects while constructing their food choices. Consequently, the need to please or receive appreciation or approval from external sources can surpass athletes' intrinsic motivations, which further suggests that the external environment influences athletes' food choices to some extent, particularly while being spending time with teammates, visiting family, or spending time with close friends. Therefore, it could be concluded that the influence of external environment depends on how strong the other food choice motives of athletes are. This further means that if athletes consider maintaining social relationships value as the most important while making food choices, they are likely to be more influenced by the social aspects than their intrinsic motivations.

A positive support and encouragement from external sources, such as from friends, family, and partners, can contribute athletes to make more sustainable food choices. In particular, the influence of partners seems to encourage athletes to eat in a more sustainable way, particularly if their partner cooks for them. Therefore, the other motives of price, taste and health-factors are often surpassed by the convenience factor, and it can

solely be the only factor which matters while athletes make their food choices. Closely to that, the familiarity of the food, and previous experiences with sustainable foods seemed to influence the athletes' motives to consume sustainable foods, where athletes are more likely to consume sustainable foods, if they have previously eaten it with their family, friends, or partners. Moreover, the positive experiences of eating and cooking sustainable products contributes athletes to make more sustainable food choices, if they have noticed that the foods have a good taste, and it is easy to prepare. On the other hand, if they have had negative experiences with certain sustainable food products, they are likely to avoid those in the future as well, and their likelihood to try new sustainable food products drops. Therefore, cooking and trying out sustainable foods as a unit, and the positive experiences from that contributes athletes to make more sustainable food choices, which further suggests that extrinsic sources have an influence on athletes' sustainable food decisions.

Lastly, although previous research highlights the influence of coaches, other athletes, and media while making food choices (Smart & Bisogni 2001; Long et al. 2011; Birkenhead 2015), this research found that those factors do not influence athletes' sustainable food choices much. This could be explained by the fact that the study respondents were professional athletes, meaning that the information received from coaches at this stage of athletes' careers is close to none. Besides, the interviews could not go deep into the subject of influence of media, and it seems that athletes have good media literacy skills which lowers the impact of media. Therefore, the factors of media and coaches were strikethrough within the figure's extrinsic motivations dimension, and the influence of partners was added to the figure.

As a conclusion, the study has several theoretical contributions for the field of sustainable eating of professional athletes. Although findings of the importance of convenience, taste and price have been also found from the previous studies, this research provided new perspective where the convenience motive seems to outweigh the other motives while athletes' make sustainable food choices. Besides, it has been unknown what could motivate professional athletes to eat in a more sustainable way: this study suggests that the environmental motivations are solely not enough to motivate athletes, and therefore the knowledge on other sustainability aspects, such as impacts in athletes' health or athletic performance, motives athletes to eat sustainable food. Therefore, the intrinsic motivations of athletic performance are arguably influential for athletes, and it could motivate them to make food choices that brings them the greatest success for sports



but are also sustainable. Knowledge, experience, and the availability of sustainable foods have a greater influence on athletes than previously thought. Moreover, applying those to practice to encourage professional athletes to make sustainable food choices is discussed within the next sub-chapter.

### 5.3 Practical implications

The study's practical implications are primarily directed to domestic companies within the food industry, as well as coaches and sports organizations. Firstly, this study's findings could potentially *help companies within the food industry to create and develop food products that fulfill athletes' needs*. Although creating sustainable food products with the combination of food attributes that athletes' value is quite demanding, it also gives a lot of opportunities for R&D departures to innovate products that fills the athletes' needs and wants. As suggested within the previous chapter, the combination of factors that would motivate athletes to eat more sustainably includes reasonable price, convenient and easy cooking, supporting health and athletic performance, and having a satisfactory taste. It could be concluded that, in general, *athletes are not willing to consume sustainable food products if they perceive that they can get the same benefits from animal source foods for a lower price, better taste, or with an easier way to prepare the food*.

Although athletes want to eat foods that taste good and have a reasonable price, the performance-related motives and convenience factors outweigh the taste and price motives. The identified barriers that prevent the athletes' consumption of sustainable foods include the long cooking times and challenging preparation, and the lack of cooking skills to cook tasty meals. Therefore, it could be beneficial for domestic food companies and *grocery stores to expand their selection of sustainable food products that not only have a satisfactory taste but are also convenient and quick to cook*. Additionally, although the food price is important for athletes, it did not act as a barrier to buy food. Therefore, it could be concluded that sustainable food products that are a bit higher in price and have a satisfactory taste are enough to fill the athletes' needs as long as they are convenient to cook and support their athletic performance.

From the marketing point of view, it could be *beneficial for the companies to highlight the easiness to cook*, the nutritional content, and how consuming the product are

connected to improved health while marketing sustainable food products. Therefore, if food companies would brand and sell their products by *highlighting the food functionalities that benefit athletes from the athletic performance point of view*, it could, in turn, lead athletes to consume more sustainable food. Besides, since athletes are not aware of all the possibilities within the sustainable food options, companies, and grocery stores could better market and advertise their products to increase their sales of sustainable food products. Athletes are, without a doubt, motivated to eat more sustainably, and to consume plant-based products, and they mainly hold positive perceptions regarding the taste and quality of plant-based foods, as well as the suitability to athletes' overall diet. However, since athletes are not well aware of the possibilities that food sections in the grocery stores have, *improving and enhancing the marketing planning and product development could be beneficial for food companies in the future*.

Since one of the barriers for athletes' sustainable food consumption is the lack of knowledge, the sports dietitian experts - who are the professionals to ensure the awareness, knowledge, and skills of professional athletes - could encourage athletes to consume in a more sustainable manner. Therefore, if sports dietitians would promote sustainability practices and expertise among athletes, coaches, and teams, it could in turn lead athletes to make more sustainable food choices. Moreover, particularly for the future generations and younger athletes, *it is essential to integrate the sustainability practices into sports nutrition as well to foster the health of the environment*. This could be done by focusing on teaching and providing the opportunities and tools for athletes via food literacy, which could focus on the skills and procedures related to cooking, and information on where, how, when, and from whom food is produced (Meyer et al. 2020, 153-154).

Besides the sports nutritionists, it is the responsibility of teams and sports institutions to include sustainability into their practices. Based on this study's findings, athletes consider the challenges of the environment, such as eating out with the team, among the barriers to eat sustainable food. Therefore, it could be helpful *for teams to generate their own sustainability plans on how they could ensure environmentally friendly eating practices while being on the road as a team*. Besides, teams could come up with procedures on how they could reduce their food and package waste and prioritize restaurants that offer sustainable food options while traveling as a team.

However, sports institutions and federations can have the most significant influence in incorporating sustainability practices into athletes' everyday lives. For instance, *sports federations could improve their food procurement processes and ensure a greater variety of sustainable options in sporting events*. This could be done by paying more attention to greater integration on how they procure food policies that include sustainability practices. As this research suggests, professional athletes are motivated to consume sustainable food, but the external environment causes barriers to make sustainable food choices in certain occasions. Therefore, sports institutions could change the eating practices towards more sustainable, which could make the consumption of sustainable food more convenient and easier for athletes. Previous research have suggested that although nowadays there are options in many sporting events, athletes are not always informed about the sustainable alternatives, and the options are often narrow (Pelly et al. 2014). Besides, the challenges within the sustainable food availability while eating in restaurants, for instance, during the road game-trips, further suggest that *improving food availability, food services, and food access could motivate athletes to consume more sustainable food*.

Although other athletes' and family's influence on food choices is not as influential as thought, the role of the external environment should not be underestimated. Furthermore, it is crucial to keep in mind that athletes want to consume food products that are easy to obtain and those that other athletes or family members consume as well. Altogether, athletes' willingness to consume sustainable food heavily depends on their nutritional knowledge, importance of performance-related factors, and which food attributes they value the most – whether it is price, convenience, health reasons, or environmental matters – and there is no easy answer to be provided to what could be done to change those personal values of athletes.

## **5.4 Limitations and future research**

There are some limitations to consider for this research and the findings. Firstly, since this research aims to explore why professional athletes consume sustainable, plant-based food, the findings could be different if the purpose of the study was to find the motives to

follow a strict plant-based or vegan diet. Additionally, since the data is collected through interviews, which give a subjective view from the participants, the findings are based on participants' personal thoughts, feelings, and experiences, not proven facts. Besides, it is essential to note that the study focused on a small number of Finnish athletes, meaning that the findings could be different if the study respondents would include athletes from other fields of sports or countries. Therefore, professional athletes' motives to make sustainable food choices cannot be generalized to all athletes as such.

While this study focuses on discovering professional athletes' motives to consume sustainable food, sustainability and ecological consumption are not only limited to that field. Sustainability is a broad concept, combining packaging, logistics, materials, and technology, but this study focuses on the nutritional content aspect of sustainability. Therefore, there is a potential for further studies regarding the topic considering the other sustainability components. Likewise, the subject of sustainable innovations and motives for sustainable diets can be distributed to other fields, which makes the topic relevant and valuable in international business.

Lastly, the influence of broad environment on athletes' sustainable food choices could be an area of future research. The availability of food and food labeling has been suggested to influence food choices (Burkhart & Pelly, 2013b, 2014), but the nature of the environment and how availability and accessibility of food reflect food choices is yet to be discovered. Besides, sponsorships might also contribute to athletes make certain food choices, which could be an area of further investigation.

## 6 SUMMARY

Sustainable eating is not only a rising trend but a way of eating in the future. Moreover, sustainable eating is not solely a matter of consumers who hold green values close to their hearts, but it has increasingly become a new norm for all kinds of consumers. Even though sustainable eating is a trend indeed, it has remained unknown whether professional athletes, who are typically motivated to follow a diet that supports athletic performance, are motivated to eat sustainably. Moreover, it has been unknown whether sustainable factors motivate this specific group of health-conscious consumers in the first place, and whether they are willing to consider the sustainability aspects while making their everyday food choices. This study aims to explore why professional athletes consume sustainable, plant-based food, and the sub-questions are formed to find out the different motives of professional athletes to eat sustainable food: to highlight the relationship between values and food choices, and to understand their intrinsic- and extrinsic motivations to make certain food choices.

Food choices are complex decisions, which are influenced by consumers' lifecycle and experiences, eating context, other people, as well as personal values and motivations. In particular, certain personal values - such as benevolence and universalism - have been suggested to contribute to sustainable consumption, which further refers to taking care of the nature and increasing the well-being of others. Besides, the food choice values - which are referred to as food choice motives early on within this thesis to frame the reference to eating motives - are proven to be particularly influential while athletes make their food choices. The motives that commonly guide their food choices include low price, taste, and easiness to cook. Additionally, the intrinsic motivations of professional athletes, which often include the performance-related factors, contribute athletes to make food choices that supports them to perform at peak level and to remain healthy during the season. Lastly, the people whom athletes spend their time with, such as friends, family, and other athletes, do not only act as a source of knowledge and information, but also influence the food choices athletes make in different contexts.

This research was conducted as a qualitative study of semi-structured interviews, and the interviewed respondents were ten Finnish professional athletes from different demographical backgrounds and sports. In general, the findings indicated that

professional athletes who were aware of the environmental and health impacts that a sustainable or omnivore diet has on their health and environment, were also motivated to eat sustainable food. Moreover, professional athletes are generally motivated to make sustainable food choices, but the convenience factor is the most influential food choice motive, meaning that the food needs to be easy and quick to prepare. Besides, the values of health and taste were among the most influential motives, and in general, the taste of sustainable, plant-based foods is widely liked. Additionally, lower prices could increase the likelihood to make sustainable choices, and therefore it could act as a contributor for athletes to make more sustainable choices in the future if the price of those would be lower.

The performance-related factors were seen as the core intrinsic motivations, and athletes are motivated to consume sustainable food if it positively correlates to their athletic performance. Although the environmental factors were seen as essential for all athletes, it is solely not enough to contribute athletes to eat more sustainably: therefore, the most motivating factors for athletes are not related to environment, but more so to maximize their athletic performance. However, in general, athletes do not have enough knowledge on which kinds of sustainable products grocery stores have, and they also lack on knowledge on environmental matters and how their diet contributes to the health of the environment. Therefore, with proper guidance and correct education on nutrition and sustainability matters, athletes could be motivated to consume sustainable food in the future.

Although the extrinsic environment of friends and family was not seen as influential while making food choices, the extrinsic environment's role should not be forgotten: it can be argued that the opinions of people who matter to athletes the most influence their food choices in certain situations. Furthermore, the findings of this study presented that partners are one of the greatest motivators for professional athletes to make sustainable food choices, due to convenience related factors. Additionally, while cooking with friends or while visiting family, athletes often feel pressured to eat in a certain way that does not cause difficulties or negative feelings for other people. Therefore, the external challenges, which also arise while being on away-game trips, can be a barrier to make sustainable food choices, even when athletes would have the motivations to make sustainable food choices.

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## APPENDICES

### Appendix 1 Framework for semi-structured interview questions (Originally in Finnish, translated into English)

#### 1 Background questions

- 1.1 What is your background with sports and how long have you played professionally?
- 1.2 How do you see your future with sports?
- 1.3 How would you describe your diet and eating habits in general?
- 1.4 How important do you consider diet in your specific sport?

#### 2 Values

- 2.1 Which kind of values do you have?
- 2.2 How are your values in relation to your consumption?
- 2.3 What food related values do you have and how important do you consider them?
- 2.4 What is the role of your values while making buying decisions?

#### 3 Sustainable values

- 3.1 What does sustainability mean to you?
- 3.2 How do you consider sustainability while purchasing food?
- 3.3 How do you feel that your values prevent you from consuming sustainable food?

#### 4 Internal motives of athletes

- 4.1 Which kind of beliefs and knowledge do you have on sustainable, plant-based food?
- 4.2 Why is the diet important to an athlete?
- 4.3 Which factors should athletes take into account while structuring a diet?
- 4.4 In which way does your knowledge on food and the importance of diet in athletic performance contribute to your food choices?
- 4.5 Which factors would motivate you to consume sustainable food?

4.6 Which factors would discourage you from consuming sustainable food?

5 External influence

5.1 Which kind of eating habits do you have?

5.2 Why have your eating habits shaped to the form they now are?

5.3 How does your family influence your eating habits?

5.4 How does your friends influence your eating habits?

5.5 How does your environment you are in (living alone or with someone) influence your eating habits?

5.6 How does the guidance and information from coaches affect your food choices?

5.7 How do other athletes influence your food consumption?

5.8 What are the facilitators that contribute you to consume sustainable food?

5.9 Could you identify barriers that prevent you to consume sustainable food?

5.10 In which way do you feel that the professional athletes in media affect your food choices and overall diet?