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Sustainability in the sporting goods industry:

How Nike, Adidas and Puma have developed company sustainability

Metropolia University of Applied Sciences

Bachelor of Business Administration

European Management LXB14S1

Bachelor Thesis

1403036

06.05.2019

Metropolia
University of Applied Sciences

Author(s) Title	Heidi Niskanen Sustainability in the sporting goods industry: How Nike, Adidas and Puma have developed company sustainability.
Number of Pages	53 pages + 2 appendices
Degree	Bachelor of Business Administration
Degree Programme	International Degree Programme
Specialisation option	European Management
Instructor(s)	Louise Stansfield, Lecturer

This thesis will be focusing on sustainability, especially on sustainability for global businesses and in the sporting goods industry. The thesis will be comparing the three leading sports brands Nike, Adidas and Puma and their sustainable efforts and how the companies have developed company sustainability.

The topic is relevant as sustainability is recognized as an important topic in today's world from the economic, social and environmental perspectives to ensure the preservation of nature's biophysical environment, natural resources and quality of life needed for future generations.

As Nike, Adidas and Puma are the world's leading sport brands, globally their impact on the economy, human beings and nature is major in the sporting goods industry. Therefore, this thesis will examine the sustainability and challenges in the sporting goods industry using the companies in comparison since their sustainable efforts differ regardless of being in the same industry and target market.

The literature review provides the reader the basic understanding of sustainability and the core areas of sustainability from which perspective the sporting goods industry is examined by. The meaning and challenges of sustainability for businesses and consumers were introduced as a relevant part to be able to compare the sports brand companies. Qualitative research methods were used in this study, using secondary sources.

More innovation, technology and design are needed to further develop sustainability in the industry. These require collaboration with other brands, support from the industry and demand from the consumer. Increased understanding of how and through which processes a proper sustainable decision can be made.

Keywords	Sustainability, Sporting Goods Industry, Nike, Adidas, Puma

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1 Introduction

The importance of this study is to discuss the different aspects of sustainability in the Sporting Goods Industry for global businesses, discussing the challenges and comparing the three leading sports brands Nike, Adidas and Puma, reflecting their efforts to the industry. As the world's leading sport brands the impact of the companies on economy, people and nature is major, therefore the author is using the companies in comparison since their sustainable efforts differ despite of being in the same market. The author's desire to conduct a research on sustainability in the industry was established after finishing an internship both in Adidas and Puma, seeking to further understand the different aspects and challenges in the sporting goods industry on sustainability, furthermore to understand the authenticity of the efforts made by the sports brands. The research is conducted by using qualitative research using secondary data sources, examining the core idea of sustainability in general, meaning and challenges for consumers, businesses and in the sporting goods industry furthermore comparing how the three brands have dealt with sustainability.

Sustainability is recognized as an important topic from the economic, environmental and social perspectives. The global population has consumed more goods and services in the last 50 years than any other generation previously, while this has led the way to economic growth and improved quality of life in parts of the population it has led to environmental degradation, over consumption and social issues. (Portney, 2015) The growing population is estimated to reach 9.6 billion by 2050, this means that the equivalent of three planets would be required to provide the natural resources needed to sustain the current lifestyles and consumption culture. (United Nations, 2019) It can be considered that the current and previous models of human consumption and industrialisation do not support the world's growing population or nature (Portney, 2015) Sustainability conveys the idea that the earth's capacity to generate products and absorb externalities is limited and concentrates on balancing the competing needs of humans moving forward technologically and economically while protecting the environment and society. Sustainability examines the long-term effects of human actions and the possible improvements which enable meeting the present needs without compromising the ability of future generations to meet their needs. (Epstein, 2014)

The huge impact that the Sporting Goods Industry has on these factors, contrasts with the world's leading brands to appear more responsible, as consumers are becoming increasingly conscious on sustainable matters and on their own consumption behaviour. Consumers are expecting businesses to provide ethical goods and services, share their values and employers to act responsibly.

The industry faces many challenges as sporting goods are focused on performance-based products requiring complex materials and processes to enhance the product quality causing environmental harm. Furthermore, the leading sport brands have outsourced their production to Asia and developing countries with cheap labour workforce, often facing social responsibility issues. Despite the challenges in the industry the leading brands have received recognition in several sustainability indexes, investing in technologies and innovation to further develop issues criticized in the industry.

2 Research Methodology

Research methodology refers to the procedure and techniques used to select and process information on the topic researched, which enables the researcher to critically evaluate the validity and reliability of the study. (Saunders, 2009) The author aimed to investigate whether sustainability exists in the Sporting Goods Industry due to the increasing trend of sustainability in the market, furthermore forming the research question "Does sustainability exist in the sporting goods industry or is it only a publicity stunt?".

The topic of sustainability in the industry with its various perspectives, has been largely researched previously. Therefore, the best approach for a comprehensive global understanding was to use qualitative research through secondary data sources. The author carefully selected the relevant and quality information for this study. Furthermore, to enable a comparison between the chosen sports brands and compare these to the industry in general. The literature discussed forms a foundation for the research based of secondary data analysis.

Qualitative research uses information that is subjective and non-numerical. Secondary data sources refer to data which is already published and collected for other purposes, then reanalysed for the research. (Crabtree, 1999) The data is categorised into three different main groups which are documentary, multiple source and survey (see Figure 1). (Saunders, 2009)
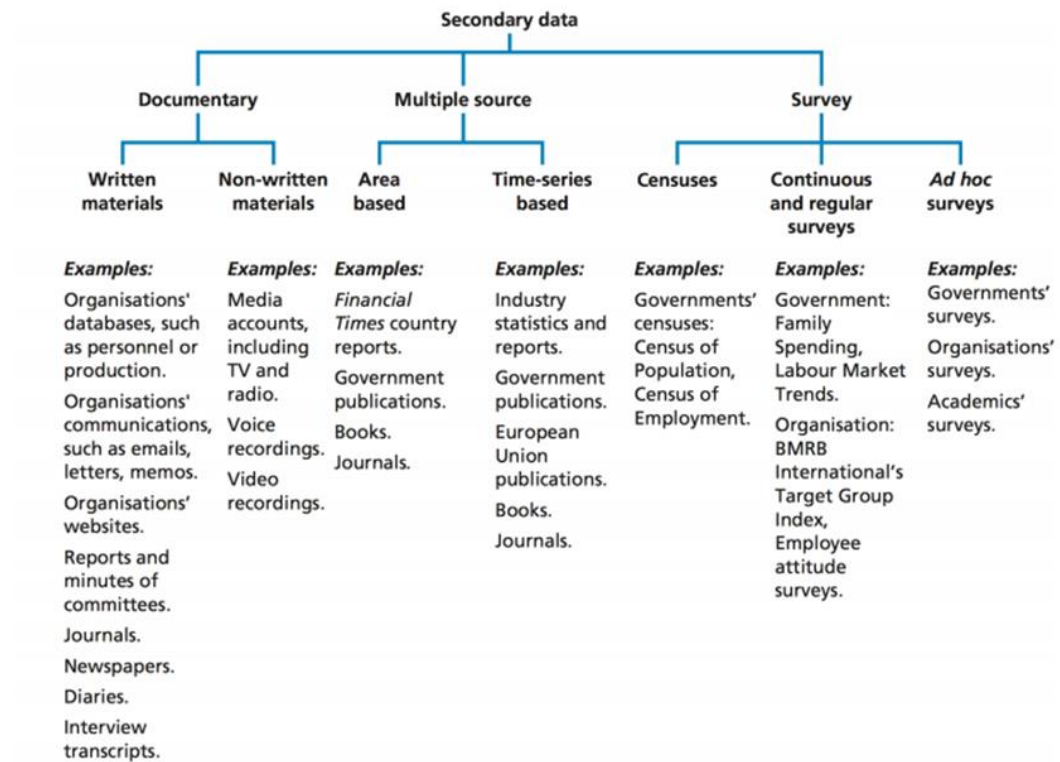
Figure 1. Types of secondary data. (Saunders, 2009)

The author gathered data for this study from scientific researches, published reports, journal articles, peer reviewed journal articles, books, e-books, websites, news channels, surveys and corporate social media channels.

After collecting the data, the author will analyse the relevant secondary data for the final research results. The next section will discuss the literature review of the research paper.

3 Literature review

This section of the research will focus on literature which forms the theoretical frame work for the research paper. The literature review will discuss the main aspects around sustainability that are relevant in the sporting goods industry and for sports brand companies. Furthermore, looking into specifically the three leading sports brands in the world, which enables the author to compare the sustainable efforts of Nike, Adidas and Puma, examine the motives and challenges for the brands to develop company sustainability from a sporting goods industry perspective. Therefore, explanation of the theory is necessary to comprehend a whole picture.

The information is gathered mainly from reliable journal articles, peer reviewed journal articles and books by authors which have received recognition on the related fields of knowledge, gathering information through many sources with different view points further strengthens the reliability and claims made. Companies' own publications have been used mainly to gather facts from the companies operations, as there is no access to further inside information one must rely on the companies to report accurately on their actions, which is generally expected from global companies as the failure to due so might lead to severe consequences, however one must critically view the information gathered to draw conclusions in comparison to other information available. Furthermore, also publications by non-governmental organisations and intergovernmental organizations have been used, as the organisations have great pressure to publish fact-based publications due to their position. The next section will further discuss sustainability and how it is generally understood.

3.1 Sustainability

The World Commission on Economy and Environment in 1987 described sustainability with the definition of "sustainability is economic-development activity that meets the needs of the present without compromising the ability of future generations to meet their own needs". (United Nations, 1987) The definition served as a convenient starting point when starting to understand the abstract concept and term that may seem ambiguous. The term sustainability has become to own a number of specific meanings and gone through a substantial evolution since then. (Portney, 2015)

The Earth Charter defined sustainability later in 2000 as a "global society founded on respect for nature, universal human rights, economic justice and culture of peace" referring that developing a sustainable model is crucial and needed for the human`s and the earth to survive. (The Earth Charter, 2000)

The term sustainability has included several different definitions used in literature throughout time, however the concept of sustainability is generally understood to have many dimensions including environmental, ethical, economic, social, cultural, psychological and equity perspectives, which have still stayed present when talking about sustainability. (Portney, 2015 pp. 21) The widely accepted definition includes three main areas of social responsibility, economic practice and environmental protection. (Hutchins & Sutherland, 2008) The precise meaning of sustainability depends very much on the context and fields, it owns different meanings in the contexts of ecology, energy, environment, population, agriculture, economics and demographics (Portney, 2015 pp. 55)

In general sustainability concentrates on balancing the competing needs of the human society on moving forward technologically and economically and the needs of protecting the environment, health of the society and ensuring no areas of life or people suffer as a result. Sustainability examines the long-term effects of the actions of humans and how these can be improved to meet the present needs without compromising the ability of future generations to meet current needs. (Epstein, 2014 pp. 20) It is about finding a steady state which allows the Earth to support the human population and economic growth, taking into consideration the condition of the Earths biophysical environment and respect to the use and depletion of natural resources. (Portney, 2015 pp.3)

It is important to first understand how sustainability is generally understood and defined before going further into the topic of what the three main areas of social responsibility, economic sustainability and environmental sustainability mean.

3.1.1 Environmental Sustainability

Environmental sustainability refers to the respect of nature, efficient and economical use of natural resources, ensuring the conservation of water, soil and air, controlling global warming, maintaining and supporting natures biodiversity and responsible production of goods and services, taking nature into consideration without causing harm to it (Niskala & Tarna, 2003). Finding sustainable solutions not only to the current situation but also to maintain environmentally sustainable development in the future is part of environmental sustainability, being prepared for the consequences and changes that are predicted to occur to the environment. Environmental sustainability deals with finding alternative solutions to for example various human and industrial activity, limiting the types and amounts of toxics and hazardous substances leading into the nature as by-products. (Portney, 2015)

The different organizations responsible for the environmental sustainability and innovation are governments, intergovernmental organizations (IGOs), non-governmental organizations (NGOs), companies and corporations as well as individual human beings. Each government, organization, team or individual have different levels of authority in regards of sustainability. Governments, IGOs and NGOs can drive and create agreements or partnerships or laws and targets which can be collaborated with or imposed on companies and individual human beings. Companies need to obey certain agreements and laws as well as individuals; however both are able to create their own strategies, targets and actions or drive environmental sustainability and innovation further on top of the requirements set from governmental or IGO level. (Young & Dhanda, 2012)

It is important to understand the general idea of environmental sustainability and participants involved sharing the responsibility, as it is interlinked to economic sustainability further discussed next.

3.1.2   Economic Sustainability

All economic value is derived from the nature or the society, therefore economic sustainability is interlinked with ecological and social sustainability. (Ilkerd, 2012) States'

gross domestic product (GDP) improvement is crucial for the country's wellbeing, meaning the usage of natural resources needs to continue even with the risk of increasing environmental degradation. Within this model the improvement of human condition comes with the compromise of depletion of natural resources and harm to the environment. (Portney, 2015 pp. 21) However looking to the long term in case the nature or society are not sustainable, neither is the economy. The economy to be able to have long term sustainability the economies must do more than simply meet individuals needs and contribute to the greater good and ethical well-being of society. (Ilkerd, 2012) An economy that fails to sustain itself is not able to contribute to the good of the society or humanity. To ensure long term economic investments in nature and society, actions based on ethical and social values need to take place, these are important for environmental, social and economic sustainability. (Ilkerd, 2012 pp. 12) The challenge of economic sustainability is finding the balance for ethical economic, social and environmental dimensions for human wellbeing for a sustainable way of life.

As economies around the world continue to advance economically they tend to put stress on nature and its ability to deal with damage such as high level of pollutants which are created as part of the economic growth. Modern economies try to combine the ambitious economic development with the obligations of preserving the natural resources and ecosystem, traditionally the two can be considered to have a of conflicting nature. (Munasinghe, 2007 pp. 3) Although the belief is that governments make optimal choices for their countries, governments' objectives are usually as well connected to being re-elected, where political parties consider economic benefits as the greater importance as these are more visible than the results of sustainable or environmental policies, taking even centuries to measure. (Lin & Zheng, 2017) Finding efficient alternative solutions and feasible substitutes need to be innovated, to ensure the growth of the world's economies without the expense of the environment. (Munasinghe, 2007 pp. 3)

Sustainability conveys the idea that there is no compromise between the good for the environment and the good for the economy, which is based on the idea that depleting natural resources and harming the environment tend to depress the economic growth and development in long term. (Portney, 2015) Sustainable economic relationships must be beneficial mutually, if organizations or individuals exploit or extract continuously, resources to extract and people to exploit will run out. (Ikerd, 2012 pp. 36) The global population is estimated to reach 9.6 billion in 2050, which would require the equivalent

of close to three planets to be able to provide the natural resources needed for sustaining the present lifestyle and consumption culture. (United Nations, 2019)

Sustainability brings the idea that people and policies should be more proactive and think forward on what is required to maintain and improve wellbeing of growing and large number of people. Furthermore, the link between sustainability and economic development began to emerge as an important policy issue and in the late 1970s and it made its way to works of the Intergovernmental Organization United Nations (UN) Environmental Programme. In the late 1980s UN World Commission on Environment and Development created a report "Our Common Future" which was designed to create an international agenda for protecting the global environment, sustain and expand environmental resource base in the world. The idea of an international agenda has been taken further in recent years via pursuing sustainability in smaller geographic areas as well as cities, concentrating on a small number of targets in hopes of that leading toward global growth and liveability. (Portney, 2015)

Economic sustainability should meet the current economic needs without putting into danger the economic opportunities for the future. Economy that fails to meet the basic needs of its society is unstable and volatile politically and economically, which cannot be a sustainable economy. A sustainable economy needs to be able maintain its productivity and value to the society. (Ikerd, 2012 pp. 1-2)

Unlike governments and individual people, corporations' main purpose is dedicated purely to economic purposes meaning they are not able to purely form ethical or social values or decisions for the benefit of society or humanity. Most of the corporations which dominate today's global economy are large multinational publicly traded companies which are legally obligated to serve the common interests of their stockholders and need to make rational economic decisions. Furthermore, it is hard to have any common social or ethical values with such huge corporations, where the stockholders are scattered around the world in variety of nationalities, religions, cultures and ideologies, the combining value is to enhance the economic value of individual investments through appreciation in market value or dividends. (Ikerd, 2012 pp. 9-11)

Corporations make investments and decision making which results in economic benefit for individual members of society. Contributions for the wellbeing of nature, communities

and societies are often realized with the expectation that it will gain greater economic value in return to the company. Individual people are able to make non-economic decisions based on their ethical beliefs or commitments to sustainability, which enables economic organizations to gain economic value by responding to the sustainable needs, wants or values of their customers or shareholders. The corporation could be moved towards more sustainable production for example if their consumers are willing to pay premium prices for sustainably produced products, which gives the corporation an economic incentive. However, corporations could exploit this choice of the consumers by for example charging higher prices for products that claim to be sustainable, yet the production is not in reality following sustainable means. This is where society and governments need to impose constraints on economic exploitation to ensure economic sustainability. (Ikerd, 2012 pp. 9-11) Economic sustainability is further interlinked with social responsibility which affects the same stakeholders, further discussed in the next section.

3.1.3 Social responsibility aspect in sustainability

Social sustainability covers the areas of social responsibility, human wellbeing and health, human rights, employee wellbeing, good practices within communities and in the corporate network, labour rights, equality, children, indigenous people, social justice, cultural competence and adaptation and education. It comprises the efforts individuals, governments, organizations, companies and employees are giving back to the community. (United Nations Global Compact, 2019)

Sustainable social responsibility means contributing to the society or community in ways that helps to develop social standards in the society and furthermore in a way which can continue for future generations. (Blowfield & Murray, 2008) It is the efforts of governments, individual humans and companies that contribute to the wellbeing of the society. (Munasinghe, 2007. pp. 4-5) The topic is truly interlinked with economic sustainability as well as environmental sustainability. The ideology of sustainability is the path that enables humanity as a whole to maintain and extend the quality of life through the diversity of life. The core concept of sustainability is the importance of future generations, meeting human needs now, which needs to be linked to the fulfilment of all global citizens basic needs in the future. (Adams, 2006 pp.13)

The meaning and impact of social sustainability depends on context, since the motives for social responsibility differ as individuals are able to act purely from an ethical perspective, whereas corporations are driven by business motives as discussed previously in economic sustainability. Due to the fact that big global corporations operate in communities, employ people and produce services and goods, the expectations from consumers, society and governments in the contributions are higher, as companies can impact a huge amount of people with their operations. (Hutchins & Sutherland, 2008)

Social sustainability in corporations is managing and identifying the positive and negative business impacts on people. Companies affect directly or indirectly what happens to the employees, workers in the value chain, local communities and customers, therefore proactive management is crucial. The company's stakeholders, consumers as well as national pressure has a major impact on the motives for social responsibility and the sustainable development of it. (United Nations Global Compact, 2019)

The idea of sustainable communities has risen with the understanding of the social and economic elements of sustainability, building a community as a form of social capital relating to people's wellbeing and ability to handle issues in order to become more sustainable. (Portney, 2015)

The three main areas of sustainability environmental sustainability, economic sustainability and social responsibility aspects are interlinked. The three main aspects full fill each other in the over lapping "three pillars of sustainability" theory by John Elkington (see Figure 2). In a strong and whole sustainability approach, sustainability lives in the middle of the circles. Especially in global corporations as they leave a mark on each area most often with the business practices and actions. (Elkington, 1998)
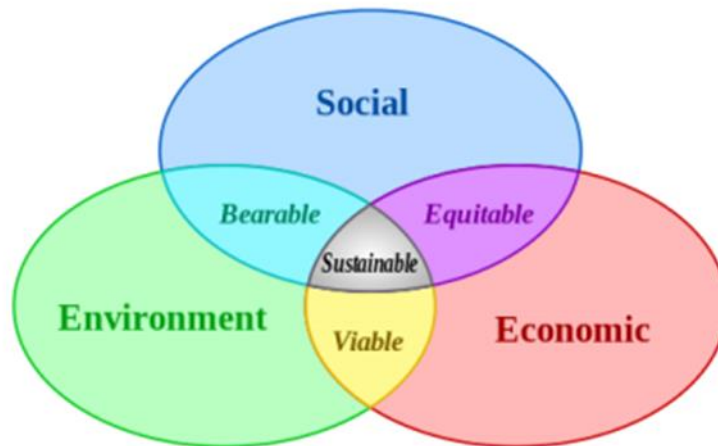
Figure 2. Three pillars model of sustainable development (Thatcher, 2015)

The "three pillars" theory of sustainability calls for balance between the dimensions labelling these as requirements for ideal sustainable development stating that once the pillars are working together development is achieved and if one pillar is unbalanced this exposes the system to a potential collapse from a holistic view. However, the model does not fully take into consideration time dimensions. (Thatcher, 2015)

The main aspects of sustainability must be discussed individually and how they are interlinked before moving into sustainable consumption, as the aspects affect consumption behaviour and sustainable thoughts around consumption.

3.1.4 Sustainable consumption

Sustainable consumption is defined by Choudhury as:

> The consumption of goods and services that have minimal impact upon the environment, are socially equitable and economically viable whilst meeting the basic needs of humans, worldwide. Sustainable consumption targets everyone, across all sectors and all nations, from the individual to governments and multinational conglomerates." (Choudhury, 2018)

The global population has consumed more goods and services in the last 50 years than any other generation previously, which has led the way to economic growth and

improvements in quality of life for parts of the population; however at the same time environmental degradation globally. The wealthiest one fifth of the world's population is responsible for 86% of the global consumption, whereas the less fortunate one fifth of the population is only responsible for 1%. This indicates that the consumption patterns between developed and developing countries is significantly different. (Choudhury, 2018) Economics is largely based on promoting growth in the consumption of goods, whereas sustainable economic development is based on understanding the effect of such growth to ensure the ability of future generations to experience improved well-being. The dominant development model based on meeting the unlimited consumer needs and wants leads to over consumption and harmful by-product waste, which are a powerful driving force increasing a global risk. (Portney, 2015 pp. 8 – 45)

It can be considered that at a global level the current and previous models of human consumption and industrialization do not support the world's growing population or nature with the current consumption culture. (Portney, 2015 pp. 21) The earth's capacity to keep up generating products for human consumption, produce ecosystem services and the space to absorb externalities is limited. (Adams, 2006 pp. 8-11) The core principle of sustainability, where the earth's resources cannot be used endlessly, applies here along with the factor that such exploitation undermines the ability of life to persist and thrive in the long term. (Portney, 2015 pp. 21). The current unsustainable consumption patterns show in depletion of the stock of natural resources, destruction of nature, distribution of resources in an inequitable manner, social problems, poverty and holding back the efforts of sustainable development. (Choudhury, 2018) To ensure natural resources, economic growth and quality of life needed to thrive and reducing the waste by-product causing irreversible harm to the earth, a sustainable approach to living is needed.

A sustainable consumption approach from the demand perspective helps sustainable practices in production as well as on an individual level and in waste management. (Choudhury, 2018) Consumption in terms of products or resources is often associated with environmental degradation by consumers, therefore the care for the future motivates consumers in efforts to limit their consumption. Sustainable consumption requires not only limitation of consumption but different kinds of consumption innovations and alternative options. Enabling this on the private sector sustainability needs to be motivated by eco-development; the idea where corporations and industries

engage in the production, internal business management and sustainable marketing to consumers considering the biophysical effects. (Portney, 2015) Understanding environmental limits is central in understanding the challenge of sustainability and the failure to understand this or for humans to live within limits can be considered a significant reason why the current patterns of development are not sustainable. (Adams, 2006 pp. 13-14)

The challenges in sustainable consumption is creating a structural change in consumption against immediate or short-term interests. This is true in sustainable efforts in general in other fields of sustainability as well with businesses in the current markets, politics and financial institutions with the idea that maintaining shareholder value is their only purpose. The wealthier and middle-class of the society which is responsible for most of the consumption globally play a key role in structural change towards sustainable consumption, although it is important to understand that those in a comfortable position with vested self-interests with "more to lose" tend to oppose change more strongly than the ones who share a vision for change. While the less fortunate are concentrating on basic human needs, food and shelter, leaving less room for matters beyond basic survival in consumer behaviour. (Adam, 2006) The barriers to sustainable consumption appear also as lack of support from the community, industry or governments. Reducing consumption levels is often perceived by many governments as challenging the goals of economic growth, tech innovation or international competitiveness, making it harder for IGOs driving the need to reduce consumption levels, to have the support reaching tangible results. NGOs act on sustainable consumption debates, mainly campaigning change in consumer behaviour and raising awareness, however NGOs lack the power that the IGOs and business actors have for significant impact and wide reach. The barriers to sustainable consumption also appear in the lack of awareness or training, deep unsustainable behavioural patterns and thinking or lack of alternative sustainable products and services offered for the consumers. (Choudbury, 2018)

The efforts to structural change in sustainable consumption are dependent on not only consumers themselves but the industry, decision makers, governments, NGOs, IGOs, educators, economists and business in general. (Choudbury, 2018) However three billion consumers mainly in developing markets are estimated to be entering the middle-class by 2050, desiring and expecting the "western" lifestyle characterized by intense resource use and prominent consumption, which puts even greater pressure on sustainable supply

of goods and services but furthermore focus on the demand side. (World Economic Forum, 2013)

One approach to present and market sustainable consumption to the wealthier and middle-class consumers is through innovation as the driver of positive change in society, instead of global degradation and threats. The future possibilities sound more effective and appealing than risk to consumers. (Adams, 2006) The current language of sustainable consumption often comes off as reflecting sacrifice, making consumers think they need to give up something in order to be sustainable, which can be demotivating to them. Shifting the conversation when presenting and marketing sustainability to consumers towards the extra value they will receive, and tangible benefits sustainable products and services can offer, works in a more engaging way. (World Economic Forum, 2013)

The market has a unique power and efficiency: as a human institution it can drive massive changes quicker in human opportunity and environment, in comparison to individuals, governments or organizations. The performance of that economy is interlinked with human aspirations and subsistence, engaging with the power of the markets is a crucial way in securing sustainable consumption mentality. Sustainability should be understood as a fundamental cultural idea and future of sustainable consumption depends on the kind of culture of consumerisms built. One aspect is redesigning current economies through innovations where people can get more yet consume less and one considered approach is services over objects, which generate value and less waste. Businesses play an important part and offering choices to consumers must be a combination of enterprise, the market and regulation. (Adams, 2006 pp. 13-14)

Understanding the different aspects of sustainable consumption, challenges and approaches for consumers, to have a comprehensive understanding is important furthermore as the topic is related to why sustainability is relevant for businesses. This is discussed next as consumers play a key role in business activities.

3.2   Sustainability for businesses

Global businesses share responsibility in sustainability as they impact a large amount of people and earth with their business practices. Significant financial and organizational commitments to environmental and social sustainability are expected from any business and large multinational global companies are leading the way. (Epstein, 2008) Whether companies should consider their sustainable impacts in their practices is no longer up for discussion. The discussion has shifted from "if" to "how" to incorporate the three pillars of sustainability to the company strategy and daily business. (Epstein, 2014) Whether the companies are motivated by economic profit, government regulations, investors, stakeholder pressure or the genuine concern for society and environment, "good intentions" are hardly enough meaning businesses need significant continues effort to effectively manage their economic, environmental and social impact and to remain competitive. (Epstein, 2008 pp. 19-20) Businesses are expected to be profitable, further fund innovation and increase market share while finding sustainable solutions. The strategies often include support in employee wellbeing and promoting fair trade, preserving the environment and natural resources, maximizing long-term profitability or promoting growth. These come across in sustainable efforts in production, supply chain, reducing waste, minimizing energy consumption or using alternative sustainable energy, creating sustainable, environmentally friendly or fair trade products, using ecolabel, recycling past products, using the elements of sustainably friendly marketing, eco-friendly management of facilities and transportation. (Portney, 2015)

Thus, as discussed previously corporations operate on the basis of economic value and most sustainable decisions are based on either legislative requirements, agreements or with a strategy that sustainable efforts will bring economic value, reduce costs for the company or enhance brand image. The three main pillars of sustainability have become more important to customers and employees, influencing their expectations, therefore many companies are trying to show their efforts through sustainable reporting and furthermore continuing to develop their sustainable programs, trying to manage simultaneously the improvement of corporate sustainability and financial performance. (Epstein, 2014) In order for an organization to advance its sustainability efforts, engagement needs to be consistent with strategic thinking, approach and management and integrated with overall organizational strategy as this will help to understand the micro and macro enablers to action. (McCullough, 2015)

Many companies struggle to evaluate the financial value gained from their sustainable efforts, which can be hard to measure. (McKinsey & Company 2017) Most of the time businesses and private sector organizations focus on the next fiscal year or quarter when it comes to economic value having the responsibility to report to their stockholders. Therefore, the main focus stays in shorter term and on immediate improvements meaning that often most are not able to value benefits or impacts for the business occurring in ten or twenty years, which can clash with the ideology of sustainability. (Portney, 2015 pp. 207)

McKinsey & Company's latest survey on sustainability with many global companies from different industries reveals that companies no longer question the importance of sustainability. However, they are not necessarily succeeding in implementing it. Among the top five reasons for companies to address sustainability were: goals, mission or values, consumer expectations and attracting and retaining employees, which have grown in the last 5 years. Other reasons in the top five were; improving company reputation and new growth opportunities (see Figure 3). The importance order of sustainability topics depends on industry and field of business; in this survey one can examine the general trend among different industries. (McKinsey & Company, 2017)

Top reasons why organizations are addressing sustainability topics,[1]
% of respondents

2012
2014
2017

Align with our **goals, mission, or values**	30 / 43 / 46
Ensure **our ability to grow**[2]	23 / 21 / 21
Build, maintain, or improve **reputation**	35 / 36 / 32
Attract, motivate, or retain **employees**	10 / 15 / 21
Meet **consumers' expectations**	20 / 19 / 24
Make **tangible, positive impact**	13 / 17 / 20
Develop **new growth opportunities**	25 / 22 / 24
Meet **industry norms or standards**	6 / 10 / 15
Improve **operational efficiency**	36 / 26 / 22
Meet **investors' expectations**[3]	n/a / n/a / 12
Respond to **regulatory requirements**	27 / 20 / 22

[1]Out of 14 reasons that were presented as answer choices. In 2012, n = 4,145; in 2014, n = 2,905; and in 2017, n = 2,422.
[2]In 2012 and in 2014, choice was "Strengthen competitive positioning (eg, securing essential inputs to production, responding to competitive pressure)."
[3]"Meet investors' expectations" was not offered as an answer choice in 2012 and in 2014.
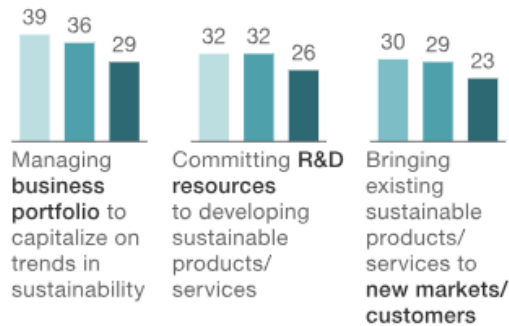
Figure 3. Top reasons why organizations are addressing sustainability topics (McKinsey & Company 2017)

The interesting fact that the survey analysis shows is that the top current reasons for the companies' sustainable efforts however do not match with the actual current sustainable actions in growth (see Figure 4). The prioritisation of sustainable actions apart from the increased marketing of sustainable products or services and engaging employees, has not increased successfully, in comparison to previous years. The results indicate a gap between values and action.
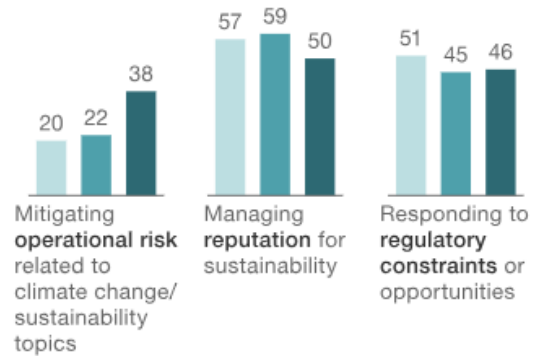
Pursuit of sustainability by business area,
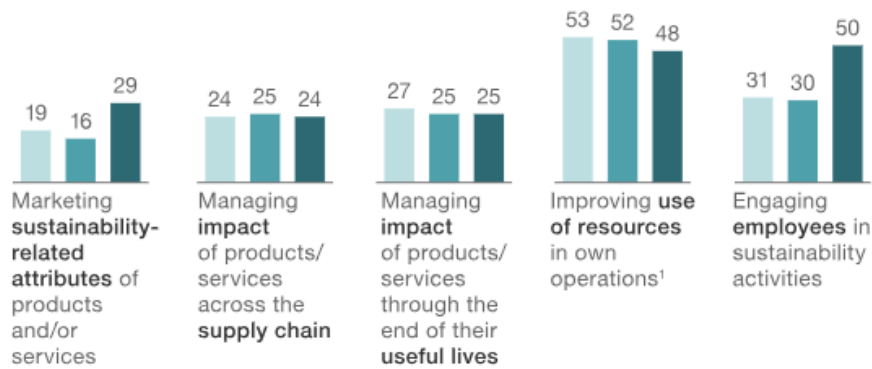% of respondents

■ 2012, n = 3,847 ■ 2014, n = 2,904 ■ 2017, n = 2,422

Growth

Managing **business portfolio** to capitalize on trends in sustainability: 39, 36, 29

Committing **R&D resources** to developing sustainable products/ services: 32, 32, 26

Bringing existing sustainable products/ services to **new markets/ customers**: 30, 29, 23

Risk management

Mitigating **operational risk** related to climate change/ sustainability topics: 20, 22, 38

Managing **reputation** for sustainability: 57, 59, 50

Responding to **regulatory constraints** or opportunities: 51, 45, 46

Return on capital

Marketing **sustainability-related attributes** of products and/or services: 19, 16, 29

Managing **impact** of products/ services across the **supply chain**: 24, 25, 24

Managing **impact** of products/ services through the end of their **useful lives**: 27, 25, 25

Improving **use of resources** in own operations[1]: 53, 52, 48

Engaging **employees** in sustainability activities: 31, 30, 50

[1]For example, water, energy, or waste.

Figure 4. Pursuit of sustainability by business area (McKinsey & Company 2017)

According to the survey made by McKinsey & Company, companies in general have struggled to pursue sustainable activities with the highest potential value. They also find it difficult to measure the exact financial impact accurately. One quarter of the respondents mentioned that the financial benefits are not clearly understood across their organizations. The companies which had measured financial impact were as likely to say that sustainability is a cost as that it creates value. (McKinsey & Company, 2017) The benefits and costs of sustainable strategies are often cross-dimensional and spread over the company, therefore intangible economic benefits from sustainable initiatives are difficult to measure. (Epstein, 2014 pp. 157)

The environmental impacts of the company can be easier to measure when broken down into smaller targets and goals, such as the amount of hazardous waste generated,

amount of energy saved using renewable energy or producing and selling an environmentally friendly product to the consumer. Whereas the impact or the return on investment in society is much harder to measure, especially when trying to convert the impacts into monetary terms. However, businesses recognize the expectations and importance of stakeholder engagement, the consequences for businesses that do not effectively consider the impact of their actions on society are often substantial. The measurement can be done from a risk point of view where negative sustainability impact if not minimized can cause a huge risk for the reputation of the company. Leading companies are examining the impacts on their services, products and activities more broadly with a comprehensive understanding that broad set of stakeholders have a numerous impacts on company profits such as customers desire to buy from the company, employees desire to work for the company and community to permit licenses for the company to operate to mention few. (Epstein, 2014)

However, sustainability management needs to be transparent and authentic to the stakeholders, only a public relations approach to satisfy stakeholders will in the longer term create risk as well since stakeholders expect actions and results. Therefore, leading companies are integrating sustainability to the way a company does business and larger companies have dedicated teams focusing on sustainability. (Epstein, 2014) The leading companies often transform the information into sustainability reports, 93% of the 250 largest companies in the world are reporting sustainability. (United Nations, 2019) Reporting helps internal leaders to understand whether effective processes and efficient operations take place in the monitoring and measurement on an organizational level. To be transparent, part of the data is then communicated and shared with the stakeholders, investors and customers. (Choudhury, 2018)

Transparency is important as consumers tend to be sceptical towards sustainability claims. In a research made in the United States by the World Economic Forum in 2013 only 44% of consumers answered that they trust companies' sustainability claims. The reason for scepticism yields from consumers feeling that companies are not showing the full picture, wanting to appear better than their actual efforts, as well publishing fake claims, and a lack of consumer understanding of the sustainability contributions. An analysis of environmental claims in consumer goods found that 95% of the products had at least one false claim out of 5 296 products. The main issue was that the environmental claims on the product could not be reliably justified. (World Economic Forum, 2013)

Measuring company sustainability in businesses can be challenging, as there are many variables to consider and it can depend on the results of the company's own targets and agreements with other external parties or in comparison to other competing companies. However, in the end it is the public, consumer and employee perception whether a company is sustainable or which company is more sustainable than another, which often brings the most value to the business. (Bruun & Langkjaer, 2016) The next section will discuss reasons why consumer behaviour is pushing further businesses to adapt and communicate their sustainable efforts.

3.3 Consumer behaviour pushing sustainability

Ethical values, transparency and authenticity for consumers are becoming increasingly essential as they are seeking products, services and brands that meet their expectations and aspirations in the highly competitive market environment. There is growing awareness of the impact that consumption, companies and other factors have on people and the environment furthermore, with fast access to information through internet and technology. Majority of the middle class and western society are now being satisfied with the overall standard of living, therefore consumers are questioning their place and purpose in the rapidly changing world and how they can become more rounded as individuals, through their contributions to the society and impact by sustainable choices. The culture has shifted to consumers desiring to be viewed as responsible in their consumption choices by their peers and the society, which is no longer a niche market of activist concerned of sustainable factors or the earth's wellbeing. (Beard, 2008 pp. 453-455)

The generation of millennials, people born between 1981 and 1996 (Dimock, 2019) have become the dominant consumer group representing 25% of the global population. Stated as the "biggest spenders", spending more than 2,45 trillion USD annually in the United States alone, millennials are the world's most influential shoppers. Brands are personal identifiers for millennials and brand loyalty is a matter of trust for the generation. Beyond price and quality the millennial consumer is looking for brand characteristics relating to sustainability, including trust 78%, environmental friendliness 71%, ethical practices 71%, social factors 61% and 44,61% seek to buy environmentally friendly products when possible. The consumer and stakeholder relationships need to be

built on trust, therefore gaining the loyalty of millennial consumers is by displaying ethical practices and sharing information transparently to earn their respect. Millennials are also conscious about modern attractive employers sharing their values. (World Economic Forum, 2013)

The average consumer hardly has time to fully study what is genuinely ethical from what is not, due to the hectic environment of living between work, responsibilities, home and leisure. This puts further pressure on companies to communicate clearly and simply, especially product related ethical or sustainable efforts, as well as marketing the stories happening behind the scenes on their efforts. Product labelling is an effective way to communicate a simple message to the customer that can be easily recognized as well as marketing campaigns, pushing the interest of companies to communicate more beyond traditional sustainability reports. These can prove to be extremely beneficial as in the case of the British multinational fashion company Marks & Spencer, which had its most successful consumer campaign ever called "Look behind the label", highlighting its use of fair trade cotton and food products. (Beard, 2008) However as much companies need to be cautious with communication as sustainability can be hard to measure, any misleading claims can create a major negative scandal harming company reputation, spreading faster than ever with social media and the internet.

On top of their own claims' brands need to be aware of private organizations focusing on sustainability topics, which may have the time to further investigate the business activities and bring these to the public. A great example is Greenpeace's Dirty Laundry Campaign in 2011, which investigated numerous brands from the fashion and sporting goods industry. The investigations brought to the attention that many of the brands were not matching their promises on hazardous chemical usage and the significant residues of hazardous chemicals were used in the textile manufacturing within the major global brands. The chemical residues would then be released into the water system when fabrics were washed, turning into an even more toxic form, polluting the water and causing harm to the humans as well as nature. (Greenpeace, 2011) One of the world's largest fashion brands Zara as an example faced a major backlash from consumers, as Greenpeace launched a post campaign called Detox, which went viral in the social media leaving thousands of Zara's "fans" commenting on their Facebook page urging the company to take action and to detox from the harmful chemicals. More than 300 000 fans signed up for a petition called "Detox Zara", emailed and tweeted Zara directly

demanding for change. The consumer pressure led to Zara committing to eliminate the harmful chemicals from their supply chain by 2020, as well as promising that 100 of their suppliers would make the information regarding the hazardous chemicals publicly available for the consumers and the media to show transparency. (STG Group, 2017)

The millennial consumers are not only interested in reading the great sustainable efforts of the company or scandals, they want to be convinced that the products and services they consume are offering a greater value to themselves. The expectation is that products are affordable, perform better and match with their values to be attractive. The increasing demand for personalized products and services has led the leading companies to figure ways of showing how sustainability can be directly related to the consumer by purchasing products or adopting a sustainable lifestyle. (World Economic Forum, 2013) Consumers want to be inspired instead of feeling guilty, which the leading companies have discovered as a great marketing tactic. (Beard, 2008)

The fashion and sporting goods industry has received major attention from consumers due to major volume of production, usage of chemicals and the fact that major part of the production is carried or out sourced to Asia and other markets where working conditions might not meet the expectations of the average middle-class society. Therefore, the next section is discussing the sporting goods industry.

3.4 Sporting Goods Industry

Sporting goods in another name called sporting equipment is the essential equipment, apparel and shoes used in sports or even lifestyle. It comes in various forms and ranges from accessories, tools, shoes to apparel and protective gear. The sport brands are directed to athletes and any consumer doing sports or favouring the brands for lifestyle. (Subic, 2010) The sporting goods market is huge globally and the industry has grown significantly over the years, in 2006 the consumption of sporting goods in the global market was more than 250 billion USD (Subic, 2010) and in 2014 it was estimated to be valued at roughly 318 billion USD. The sporting goods industry is anticipated to grow even further in the next five years due to strong sports culture and the increasing number of health-conscious consumers incorporating sports to their daily lives. (Au, 2017) Other factors supporting the market growth include the growing retail industry and

ecommerce, increasing disposable income of consumers and increasing government desire to support for sport activities. (Subic, 2010)

The sporting goods industry market is the biggest in the most economically developed countries, such as North America and Western Europe where most of the sales result with Emerging markets in eastern Europe, Asia and South America. The increasing demand has led to increased competition within the sporting goods industry by brands trying to improve their distribution channels, quality, price, supply chain management in order to maintain sustainability in the market. In order to catch the growing commercial opportunities in the industry, the leading brands have diversified by producing lifestyle products on top of the performance-based sports products. (Subic, 2010) Despite the huge market and variety of segments the industry is mostly dominated by a handful of brands and the next section will discuss the top three biggest sports brands in the world and sporting goods industry.

3.5 Three biggest sports brands in the Sporting Goods Industry

The global sporting goods market is highly fragmented from discount brands to high end fashion name brands, but the industry is mainly led by three brands Nike, Adidas and Puma. These sportswear brands are some of the biggest in the entire clothing sector. The US based sports brand Nike is the world's leading brand with a higher global revenue than Adidas and Puma's revenue combined (see Figure 5). (Statista, 2019)
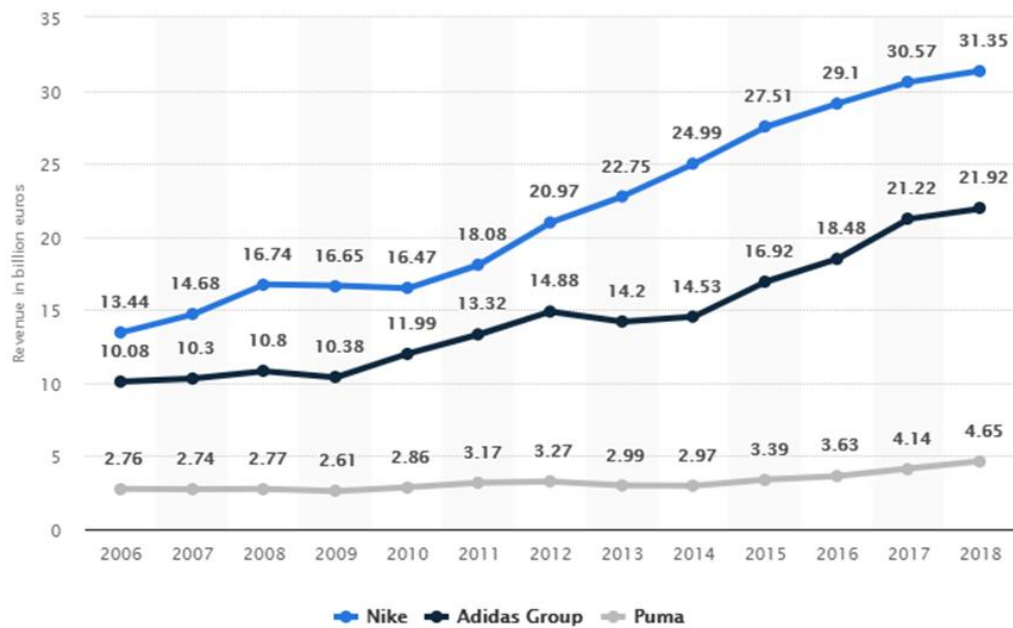
Figure 5: Global revenue of Adidas, Nike and Puma from 2006 to 2018 in billion euros (Statista 2019)

Nike was founded in 1964 in the United States by Phillip Knight, who saw an opportunity to import shoes from Japan to be sold in the US, selling them in his local area, partnering up with Bill Bowerman forming Blue Ribbon Sports together. (DeLong, 2009) In 1972 Blue Ribbon Sports was renamed Nike and became the company it is today. (Knight, 2016) Nike generated over 31 billion euros revenue in 2018, North America being its key market having almost half of its global revenue generating from there in 2018. The company employed 73 000 people worldwide in 2018 (Statista, 2019), working with over 500 factory partners with over 1 million factory workers in over 42 countries and selling products in 190 different countries. (Nike's sustainability report, 2017)

Nike's biggest competitors the German sports brands Adidas and Puma interestingly used to be the one and same company named Gebrüder Dassler Schuhfabrik, founded in southern Germany by two brothers Adolf and Rudolf Dassler in 1924 in their parents' home, later moving into a proper manufacturing facility in 1927. (Puma, 2019) The company eventually split in 1948 creating the two separate entities, leading Rudolf Dassler to establish Puma and Adolf Dassler to establish Adidas. Both brands' headquarters are still located in the town of Herzogenaurach in southern Germany, where they were originally founded. (Smit, 2009) Adidas is the second largest sports

brand in the world after Nike and the largest in Europe, generating over 21 billion euros revenue in 2018. Adidas employed 58 902 people worldwide in 2018, producing over 900 million products in a year. The brand works with over 500 independent manufacturing partners in 55 countries, 70% of the factories are located in Asia Pacific. (Adidas, 2019)

Puma holds the third place in the global market, showing significant growth but still remaining much smaller than the two leading giants. Europe, the Americas and Asia Pacific are the major markets for Puma generating over 4 billion annual revenue in 2018. Puma employs over 13 000 people, distributing its products to over 120 different countries worldwide and working with over 125 factory partners. (Puma, 2019)

All three brands have very strong marketing strategies, sponsorship agreements with professional sports teams and athletes, major events, as well as celebrity and athlete collaborations which are a major reason for their success. (Statista, 2019) The market share is also due to that the brands extend their reach beyond sports performance products with fashion, music and lifestyle and are deeply rooted in pop culture. (Shah, 2013)

Furthermore, as the three brands lead and dominate the global sporting goods industry, employing many people, producing and selling huge amount of products to consumers, the foot print of the companies is major on a global scale. The next section will discuss sustainability and its challenges in the sporting goods industry that such global companies face and need to address.

3.6 Sustainability within the Sporting Goods Industry

The sporting goods industry is large, producing an enormous amount of goods annually, which are distributed all over the world. The process from the design stage to the end user includes many stages, making the footprint of even one single item bigger than thought. Furthermore, in the sporting goods industry the products are performance based in comparison to lifestyle products in the fashion industry. This means more chemicals are used as are different kind of materials harmful to nature and people, in order to enhance the durability and performance of the product, which takes priority.

The sporting goods and fashion industry has received a lot of attention through its history as particularly the clothing production has been associated with exploitation of resources and people. (Beard, 2008)

Most of the production is based in Asia, where brands collaborate with many independent factories. The trend shifting the production offshore started due to cheaper labour and now as the industry has been there for long and the knowledge and skills of mass production reside there, making it more realistic that the major brands work with the factories specified in the field. The brands do not often own the factories and as it is a collaboration, the factories are following their own company structure, culture and apply local laws. The laws, working conditions and environmental consideration differs significantly between countries and suppliers, often not reaching the expectations of the western society or lifestyle. Therefore, to ensure that the suppliers follow an agreed level of human rights and environmental conditions the brands have created their own codes of conduct and code of ethics that the suppliers need to sign and agree to follow, otherwise their contract can be terminated. There is no one universal code of conduct, therefore brands are responsible for creating these in respect of the local laws, and corporations often draw criticism and demands from NGOs. The code of conduct consists of the rules suppliers have promised to follow, sections regarding working hours, health, safety of employees and following local laws. Corruption is regardless a general governance issue still with suppliers and in production, as well as not following the rules fully. The sporting goods brands have certain amount of audits that they operate annually to see that agreed rules are being followed and in support they provide communication channels for example to factory workers where they can call and expose breaching of the requirements and the claims will be investigated by the brands. Every year sporting goods brands report the amount of terminated contracts in their sustainability reports. However realistically the brands try to collaborate with the factories and suppliers to solve any issues and are aware of the reoccurring problems that reside, as mainly the same issues circulate, instead of pushing for terminating contracts as this affects the brands production volume and business which is very fast pace. The specialized factories handle major volume of production of different brands and terminating contracts are not always in the favour of the brand and for the factories they are one customer. Since the 1990s there has been more collaboration between brands due to scandals that caught much attention and caused protests among consumers. Now the leading fashion and sport brands collaborate together to achieve

certain conditions and sustainability targets, as they share the same factories and suppliers for production of their products. (Ruggie, 2008)

Sustainability and controlling the environmental impacts are difficult to measure, as despite the agreements made with suppliers and manufacturers, the brands are using hundreds of different manufacturers, making it further complicated as for example an individual garment may use several fabrics, zips, buttons, threads, interlinings from several suppliers. The difficulty lies in securing that all of these individual components are ethically secured from a sustainability standpoint. (Beard, 2008 pp. 448) The design of modern performance-oriented sportswear is based on highly functional textiles. The materials need to be customized for special performance properties for each segment of sports outdoor and indoor. The products need have for example good thermal properties in cold and hot weather, aerodynamic and waterproof properties, last high speed, strength and durability. (Subic, 2010)

The fibers for all textiles and apparel are either natural or synthetic and the dominating ones are composites and fibers such as Cotton and Polyester, Cotton is a natural raw material and Polyester is a synthetic fiber. Synthetic fibers are non-renewable and non-bio gradable, derived from polymers produced from basic chemicals by a very energy intensive process. Natural fibers are grown; however cotton for example requires large amounts of water and pesticides. There are many alternative natural fibers in the market and Organic Cotton with reduced toxicity of the cotton, is the only one largely incorporated to the sporting goods industry. However, the large water usage issue still remains. There is currently a lack of understanding of the sustainability impacts of different textiles in the industry and raw materials, among companies and consumers. Synthetic fibers are generally associated as bad and natural fibers good, whereas the reality is much more complex. (Subic, 2010)

New sports product innovations are rapidly developed and brought to the market to accommodate the diverse needs and preferences of the users. Special attention is given to composites, which are used to advance the performance of the products giving them certain advantages over other materials, giving the brands a competitive advantage. However, the environmental impact of producing fibers and polymers used in composites and manufacturing these materials is not well understood. The sustainability issues with using composites is a major challenge to the industry as they are produced using non-

renewal resources, require chemicals and reagents and are hard to recycle as they are not biodegradable and often disposed as land fill. The polymers and fibers are extremely durable due to their purpose on the product; however due to the durability of the material, it requires decades for them to break down in the soil. The volume of products produced in contrast to the time they take to be disposed poses a huge waste issue to the environment on top of the production. (Subic, 2010)

It is estimated that approximately 80% of the environmental burden is determined already in the design stage, as decisions are made regarding materials and processes used for the new product. Therefore, to lower the footprint of a product this needs to be taken into consideration already in the early stages. However, this requires quantitative data on the different aspects such as candidate materials, energy requirements and waste by-products, to be able to effectively integrate that. Having the data available and for the designers to be able to compare the data is not as straightforward necessarily. However fundamental to sustainable design in the sporting goods industry is the treatment of the entire life cycle of the product. The entire life cycle of a product starts from the extraction of raw materials, production, transportation, use and end life; design has a major impact on all of the different life cycle phases. The idea in principle is that the functionality of a product is fixed, and the product can be brought to life in numerous ways. (Subic, 2010 pp. 67-79)

Taking into consideration the entire life cycle of a production, after design and production, packaging and transport affects the footprint as well and inappropriate use or disposal can have major negative impacts, even if the products are reasonably produced. (Subic, 2010 pp. 67-77) Consumers are increasingly concerned about the ethical impact of their purchasing decisions on the environment and people. However, in contrast consumers are used to the availability of trendy fashionable sport clothing and relatively little guilt is felt about its disposability. (Beard, 2008) Millions of tons of waste are generated annually in textiles and clothing due to fashion driven purchasing behaviour. In the United States alone approximately 16,6 billion tons of clothing is thrown away annually from which 15% only is collected for recycling or re-usage. Recycling of products plays a big role in the industry and often concentration is focused on eco-friendly products; however long-lasting products increase the life cycle of the product, meaning it does not need to be thrown away as early, in principle reducing waste creation. However, there is no guarantee that the consumer would not still throw

the product away before needed. (Subic, 2010) The focus on recycling has been growing, although waste disposal still remains an issue. (Lin & Zheng, 2017 pp. 15)

All these issues discussed make the definition of sustainability extremely difficult to measure in the fashion and sporting goods industry. Furthermore, on certified labelled products which are often easier for the consumers to spot with the trade mark of "fair trade" or "eco", even these are often confusing in the clothing industry as something claimed sustainable can still cause a negative impact on the environment, social issues or further global issues. (Bruun & Langkjær, 2016)

For an item to be fully sustainable the entire life cycle must be taken into consideration and all the stages relating to it (see Figure 6).

Figure 6. Key Elements of Sustainable Consumption and Production (UNEP 2010)

Understanding sustainability in the sporting goods industry and the issues that make defining sustainability in the industry a difficult concept is important to understand, before further looking into how the leading sport brands are currently dealing with these issues on their behalf, discussed next.

3.7 Nike's sustainable efforts

Nike was founded on the premise that it could produce quality footwear with low costs and cheap labour by importing products from overseas factories from Asia. During then only 4% of the footwear in the US was imported. Nike's success changed the market and today 98% of footwear in the US is imported from overseas. Nike grew rapidly and by the 1990s the public targeted Nike via protests due to scandals over the factory conditions of its foreign manufacturers. The poor labour conditions, poor level of wages and cases of child labour led to the naming of Nike factories as "sweat shops" in public and drew major attention. The scandals hurt Nike's reputation for 7 years and as the factories were not owned by Nike the top executives did not take fully responsibility. More scandals appeared throughout the 1990s and attempts to publish favourable reports for Nike increased the backlash by the public, leading to weaker demand for the brand in 1998 and a dramatic drop in share price and sales, with Nike needing to lay off employees. In 1998 Philip Knight, the chairman and chief executive of Nike held a speech where he stated that "The Nike product has become synonymous with slave wages, forced overtime, and arbitrary abuse" as well as stated that "I truly believe the American consumer doesn't want to buy products made under abusive conditions". (Cushman 1998) Since then the brand has started taking steps towards sustainable actions and created the Fair Labor Association to work together with companies and representatives to establish a code of conduct for the company. Nike hired a former Microsoft executive to be the vice president for corporate and social responsibility, extending its division to 70 people. (Beder, 2002) The following years until 2004 Nike performed approximately 600 audits, (Niesen, 2013) focusing on issues in the factories and stated in the public that the company is taking corrective steps in ensuring higher minimum wages, clean air in the factories and improved labour conditions. (Banjo, 2014)

Nike was the first brand in the industry to publish a complete list of the factories it operated with. (Epstein, 2014) The brand also published a detailed 108-page report to show transparency in its efforts to the public. The report showed conditions and pay in the factories, as well as certain issues in their South Asian factories. Despite Nike's efforts to be transparent and address issues in the factories, scandals and protests have appeared in public from time to time, such as the 2006 child labour scandal in a Pakistani factory. This led Nike to terminate its contract with the factory and pull out of the stores and out of production their 2006 World Cup soccer balls, with retail value of 100 million

USD. Nike has received pressure from consumers and NGOs throughout its business on continuous social responsibility issues, regarding the factories the brand operates with, which are over 600 globally. (Niesen, 2013)

Due to the public pressure and attention Nike has developed and implemented social responsibility and sustainability policies, these are shown on the company's corporate website for transparency. Despite Nike's scandals related to social sustainability, on the environmental sustainability sector, Nike is recognized for implementing sustainable policies such as recycling used trainers for playground surfaces, using organic cotton, sustainable product launches, consistent investment in research and development for sustainable innovations. (Nike, 2019)

Nike publishes a separate sustainability report using GRI standards, including information on their acts and future targets. The report is divided into four main parts. The first part discusses strategy, targets and new innovation. The second part is how to minimize the environmental footprint via products, materials, energy usage, waste and water. Third part is manufacturing related transformation, focusing on their manufacturing and prioritization of issues. Fourth part discusses employees, community and health. (Nike, 2019) The sustainability report shows the brands performance on their targets for 2020 for example, according to their own index. The latest report shows that only unfavorable increase in their waste index relating to footwear manufacturing, distribution centers and headquarters as well as unfavourable decrease in landfill diversion (See appendix 1). The performance summary part also shows unfavorable increase of factories with over time (See appendix 2), other company targets were on green meaning there has been improvement towards reaching them in 2020. (Nike, 2017) The sustainability report also provides a priority issues part, where the brand has analysed the priority issues in sustainability for the company (see Figure 7). However the topics are shown topline and there is no further details in dept, neither figures on the exact scope of the issues.
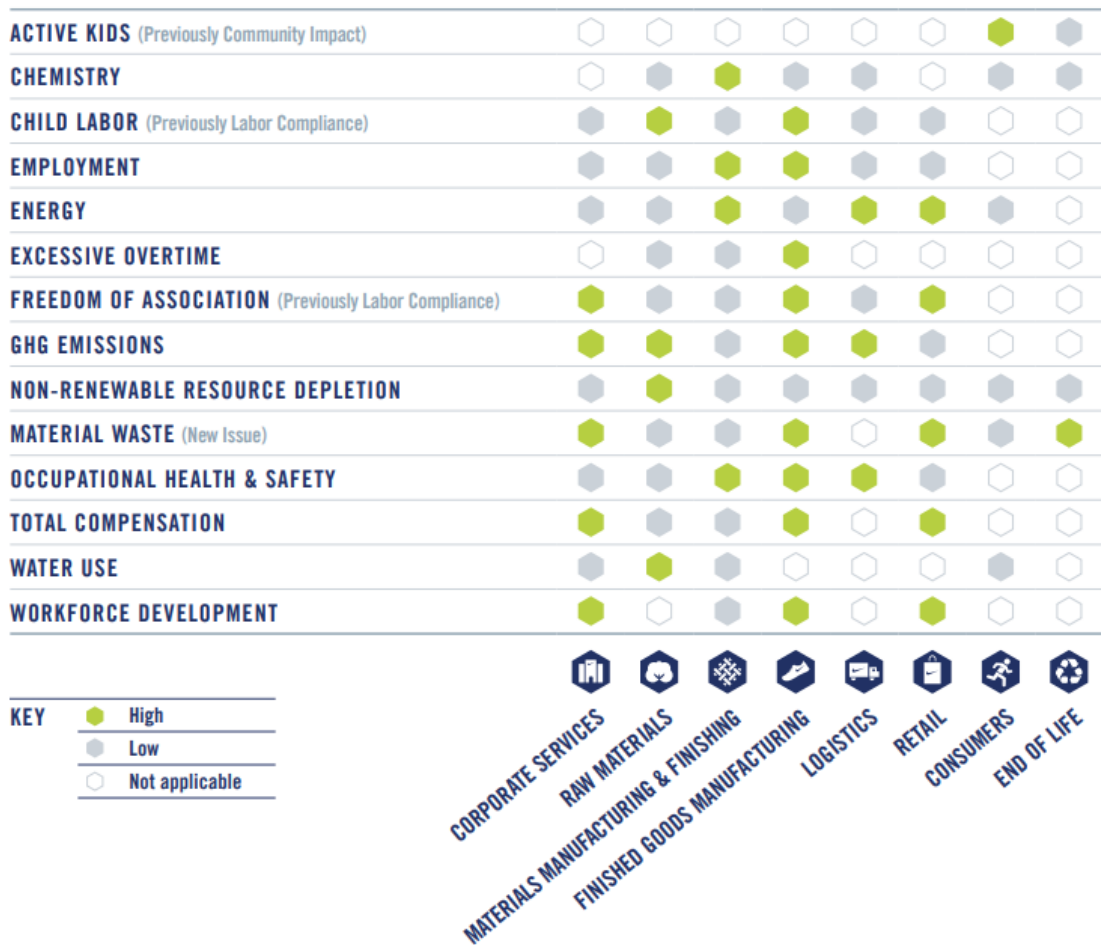
FY16/17 PRIORITY ISSUES

Issue	Corporate Services	Raw Materials	Materials Manufacturing & Finishing	Finished Goods Manufacturing	Logistics	Retail	Consumers	End of Life
ACTIVE KIDS (Previously Community Impact)	N/A	N/A	N/A	N/A	N/A	N/A	High	Low
CHEMISTRY	N/A	Low	High	Low	Low	N/A	Low	Low
CHILD LABOR (Previously Labor Compliance)	Low	High	Low	High	Low	Low	N/A	N/A
EMPLOYMENT	Low	Low	High	High	Low	Low	N/A	N/A
ENERGY	Low	Low	High	Low	High	High	Low	N/A
EXCESSIVE OVERTIME	N/A	Low	Low	High	Low	N/A	N/A	N/A
FREEDOM OF ASSOCIATION (Previously Labor Compliance)	High	Low	Low	High	Low	High	N/A	N/A
GHG EMISSIONS	High	High	Low	High	High	Low	N/A	N/A
NON-RENEWABLE RESOURCE DEPLETION	Low	High	Low	Low	Low	Low	Low	Low
MATERIAL WASTE (New Issue)	High	Low	Low	High	N/A	High	Low	High
OCCUPATIONAL HEALTH & SAFETY	Low	Low	High	High	High	Low	N/A	N/A
TOTAL COMPENSATION	High	Low	Low	High	N/A	High	N/A	N/A
WATER USE	Low	High	Low	N/A	N/A	N/A	Low	N/A
WORKFORCE DEVELOPMENT	High	N/A	Low	High	N/A	High	N/A	N/A

KEY: High (green) · Low (grey) · Not applicable (open)

Figure 7. Nike's priority issues (Nike, 2017)

The brand is also part of Bluesign standard, which combines aspects of consumer safety, water and air emissions, and occupational health into a single standard. This gives suppliers access to a database including approved textiles rating every chemical product with a rating. Nike began to work with designers, scientist, coders and students to understand the material opportunities of sustainable fashion and scored their material library on sustainability launching Nike material index, to help designers to understand the impact of their choices in designs in long term. The brand managed to also lower its Carbon Dioxide footprints in 2010, focusing on materials related to a major amount of the carbon emissions generated. Furthermore, the brand launched an across industry app in 2013 for smarter environmental decisions for designers focusing on chemistry, energy, greenhouse gas, water, soil and physical waste. (Nike, 2019)

The Nike Grind Program is an effort to aid eliminating waste taking into consideration the products lifecycle by collecting post-consumer athletic shoes and reusing them making sports surfaces for example. Since the program started, Nike has recycled over 20 million pairs of shoes. (Nike, 2019) The brand has further innovated with products using recycled polyester made from plastic in shorts as well as rethinking their shoe box packaging to a recyclable material and 75% of all Nike products contain some amount of recycled material. Collaborations in the fashion industry are getting more favourable as well and many brands are cooperating: for example Nike committed to reach zero discharge by 2020 and released a joint roadmap of Zero Discharge of Hazardous Chemicals in their supply chain along with Puma, Adidas and H&M. (Nike, 2019) As the companies received criticism in an investigation made by Greenpeace as there were no evidence on some of the promises promoted by the companies regarding hazardous toxic management implementation. (Greenpeace, 2011)

Sustainable innovations of the brand include also Nike Considered where materials are found close by, reducing energy consumption in transport. The leather comes from a tannery recycling waste water dyed with vegetable-based colours, as well as polyester and hemp, which are used in other sections of the shoe. The aim is to reduce waste and eliminate toxic substances. The brand has also been known to create energy efficient projects in efforts to reduce energy consumption in its manufacturing bases, as well as creating a sustainable venture capital arm called Sustainable Business and Innovation Lab backing up startups focused on alternative energy and efficient sustainable approached to manufacturing. (Nike, 2019) One of Nike's targets is to reach 100% renewable energy in their owned operating facilities globally by 2025 and the company signed an agreement to source 100% renewable energy in North America in 2019. (Nike, 2017) Nike has been recognized by the Dow Jones sustainability index as a leader on sustainability issues, however the brand deals with the same challenges as the other companies in the sporting goods and fashion industry. The usage of complex chemicals, textiles and manufacturing processes unfriendly to the environment, social matters and waste management. (Greenpeace, 2011)

It is important to understand the sustainable efforts of Nike, since as the biggest sport brand in the world the impact of the brand is major on environment and people due to the size of the company. Furthermore, to see how the brand deals with the previously discussed sustainability issues general to the industry and compare these to the

competitors' actions, such as Adidas being the second leading sports brand, discussed in the next section.

3.8 Adidas's sustainable efforts

Adidas was founded in Germany and moved its production to Asia in the end of 1980s from Europe due to cheaper labour. The brand received controversy as the other sporting goods and fashion brands due to sourcing products from overseas factories with low wages, poor working conditions and human rights issues. However, Adidas did not receive as much attention as Nike in major scandals. (Greenpeace, 2011) In 1998 the same time as the industry in general was under criticism by the public over factories in Asia, Adidas started to take steps towards founding their code of conduct for human and labour rights for their supply chain, today collaborating with Labour Associations and the United Nations to ensure alignment. The company signed obligatory manufacturing agreements with its main business partners to improve health and safety standards and environmentally sound factory operations. The same year Adidas pioneered the restricted substances policy, covering local requirements prohibiting use of chemicals considered harmful or toxic. The considerations however differed by location and there was no single approach apart from recommendations from consumer organizations. In 1999 the brand joined the Fair Labor Association a formal stakeholder engagement approach and started auditing the partner factories via external parties. The brand reports the number of audits operated annually and the number of contracts terminated with the manufacturers on their corporate website for transparency. (Adidas Group, 2019)

Adidas has received many recognitions throughout the years from their sustainable efforts and has been listed on the Dow Jones Sustainability Indices every year since the 2000s. In the World's Top 100 Sustainable Companies chart Adidas ranked as 5th in 2016. The brand published its first sustainability report in 2001 to show transparency on their efforts to improve company sustainability and has published an annual sustainability report since. (Adidas Group, 2019) The current environmental strategy for the brand is to manage the impacts through the value chain with focus on four areas on sustainable products, resources, reduction of emission and limiting chemical hazards. Adidas states on their corporate website that "Our strategy is to become zero-emissions company" on

their Green Company targets, however the strategy can be misleading as it is focused on Adidas owned production not its supply chain, which according to Adidas applies only for 4% of the entire impact of the company. The brand conducted a fact-based analysis in 2016 on their environmental impacts on greenhouse gas, emissions, water consumption, land use, air and water pollution, where the results show that only 4% of the impact relates to Adidas core operations in their offices, own production sites, distribution centres and retails stores. Since most of the brands production is outsourced, the biggest impact and footprint of the company occurs from the supply chain. The brand has started energy and water investment project with facilities in their five main production locations in Asia and the 2020 targets are expecting these manufacturers to reduce energy consumption, water use and waste volume by 20% overall and 35% in apparel suppliers from 2014 (see Figure 8). (Adidas Annual Report, 2018)

2020 Targets[1]		2018	2017	2016
Water	20% reduction in water consumption at strategic Tier 1 supplier facilities	(24%)	(15%)	(11%)
	35% reduction in water consumption at strategic Tier 2 apparel material supplier facilities	(27%)	(24%)	(7%)
Energy	20% reduction in energy consumption at strategic Tier 1 supplier facilities and strategic Tier 2 apparel material supplier facilities	(15%)	(7%)	(9%)
Waste	20% reduction in waste volume at strategic Tier 1 supplier facilities and strategic Tier 2 apparel material supplier facilities	(22%)	(10%)	(4%)

1 Aggregated reduction results for suppliers with 2014 baseline in all categories (apparel, footwear and accessories and gear). Externally verified data for the previous year.

Figure 8. Adidas supply chain progress toward 2020 targets. (Adidas Annual Report, 2018)

Other targets for 2020 include replacing conventional cotton with more sustainable cotton by 100%. Furthermore, 100% sustainable input by adopting Zero Discharge of Hazardous Chemicals (ZDHC) Manufacturing Restricted Substances List (MRSL) which is a joint effort Roadmap between other committed brands in the footwear and apparel industry. (Adidas Annual Report, 2018) The brand received criticism in 2011 by the Greenpeace Dirty Laundry investigation published on chemical residues and following a campaign discussed previously. (Greenpeace, 2011)

Although Adidas has not received the same amount of publicity with scandals as Nike the brand deals with same issues in the supply chain which are common in the sporting goods industry. In 2011 Adidas faced protests as a partner factory closed down Indonesia without paying 2 800 workers severance payments legally required. The protest became a large international campaign especially with the workers, activist across Europe and USA which lead to two-year campaign activity and a lawsuit by the

state of Wisconsin on behalf of University of Wisconsin to Adidas. In 2013 the case was settled by Adidas paying the Indonesian factory workers 1,8 million USD owned to the workers. (Clean Clothes Campaign, 2014)

The brand has many internal initiatives to engage employees with community and sustainability within the company, as well as reducing waste in the brands own sites including eliminating plastic in their offices and plastic bags in retail stores where possible. Adidas is also part of Bluesign Standard as Nike. (Adidas Annual Report, 2019)

New innovations are being developed and using only recycled polyester in every product is set as one of the 2024 targets. The company has largely marketed its sustainable product campaigns and collaborations to the public, such as collaborations with Stella McCartney and Parley for the Oceans. (Adidas, 2019) The most commonly used recycled fiber is synthetic polyester, which is made from plastic bottles largely included in innovations in the industry. (Subic, 2010) The Parley for Oceans campaign is a partnership where Adidas is making shoes and apparel using 11 plastic bottles per item via recycled polyester. The plastic is transported from the marine area of Maldives and the brand sold 1 million pairs of Parley shoes by 2017 (Parley, 2019) and 5 million pairs made by 2018. The campaign has been largely marketed as "saving the oceans" using "ocean plastic", although as the initiative sounds eco-innovative interestingly once looking further into the topic the plastic is in fact not gathered from the ocean, as an average consumer might perceive from the campaigns. The plastic is gathered from coastal areas as a preventative action to avoid the plastic entering the oceans and then transported to the factories to be shredded and reworked into a fiber (see Figure 9). (Adidas Parley, 2019)

Figure 9. Adidas Parley cooperation (Adidas Parley, 2019)

Gathering plastic from marine areas certainly is considered environmentally friendly however the entire footprint of the item needs to be investigated. The transportation of the plastic to the factories from across the world and the energy intensive conversion of plastic bottles into fiber, leaves yet a large footprint for one single item despite of the 11 bottles of plastic used per item. Taking into consideration the entire life cycle and supply chain of the product is important, in order to measure the real environmental impact and sustainability of the product, furthermore to be able determine if the footprint caused in the process annihilate the environmental advantages of using the plastic. (Subic, 2010) Adidas is however investing largely on research, innovation and development for sustainable design and has announced several future sustainable innovations coming in the product sector. (Adidas, 2019) In 2015 the brand made further development implementing the DryDye innovation, which replaces water requiring dyeing process with carbon dioxide. It was a major innovation to save water usage during the process. (Aulakh, 2016)

The sustainable efforts of Adidas are important to understand as a large global multinational company the brand shares a large footprint on sustainable factors. After researching the sustainable efforts of the two leading sports brands, it is interesting to compare these to the third leader in the sporting goods industry. Puma is much smaller than the two giants Adidas and Nike thus a big global sport brand. Understanding the efforts of a smaller company in the same industry which will be discussed in the next

section is important to have better perspective and to be able to better compare the brands.

3.9 Puma's sustainable efforts

Puma was also founded in Germany mainly manufacturing its products in Europe until the 1990s, decades later of its competitors, the brand shifted its production to Asia for cheaper labour having 90% of its current suppliers located in Asia. Working in the same factories with Nike and Adidas the same issues regarding factory conditions and controversy followed. Puma states that child labour was a serious issue in the industry early 1990s, when the company started out sourcing its production. Furthermore, stating that legal minimum standards were weak and factories often ignored those. The public awareness and scandals in the sporting goods and fashion industry, led to brands creating code of conducts covering social and environmental minimum requirements. Puma started auditing its partner factories in 1999 carrying out approximately 300 audits per year and published its first sustainability report in 2002. (Puma Catchup, 2017) Despite the fact that Puma has not received as much attention or has not been involved in such major scandals as its peers, the brand has been targeted by NGOs and the public from time to time, due to poor factory conditions and waste management. The brand received attention by the American National Labor Committee exposing "sweatshop" conditions in El Salvador, Bangladeshi workers earning well under living wage working over 60-hour weeks as well as 101 garment workers fainting in Cambodian factory, due to poor health and safety conditions with long working hours. (Marati, 2012)

In 2008 the NGO China Labor Watch investigated the labour conditions of 6000 – 10 000 workers in a major Puma supplier based in China, exposing poor salary of 0,64 USD per hour and excessive over time. The factory also showed unethical waste disposure. The brand acted to investigate the conditions to ensure the factories are following the agreements and took corrective action, however the China Labor Watch stated that similar issues are present in other factories and the case serves simply as a reflection of the Puma suppliers in general, calling the brand to take action and improve flawed audit system. (China Labor Watch, 2008) The brand also received pressure from Greenpeace's Dirty Laundry report with its peers, on releasing hazardous chemicals polluting the waters in China. (Greenpeace 2011) Puma stated that the partner factories were

responsible for harmful substances free production and that hazardous substances were considered if they were found in materials or components of final products. However interestingly the use of hazardous substances released to the environment in the production was not specified on the company's Handbook on Environmental Standards. (Greenpeace, 2011) The incident led to the brand to sign the commitment to Zero Discharge of Hazardous Chemicals in 2015. (Puma sustainability, 2019)

Puma developed an approach to value and report its environmental impacts called Environmental Profit and Loss. This measures the reductions in ecosystem capacity and environmental impacts from Puma's supply chain and operational activities. The brand published its first estimation in 2011, estimating the cost of its environmental impact to be 145 million EUR in water use, greenhouse gas, air pollution, land use and waste however the impact is measured by an internal index. Puma is also working with Bluesign and recognised in the Dow Jones Sustainability Index. (Puma, 2019)

Puma launched its first eco-friendly sustainable product initiative in 2013. The InCycle collection featured a shoe, jacket and a backpack. The shoe was made of 100% recycled polyester saving emissions by 80% was calculated from normal production, as well as the outsole of the shoe was partly made from Double R Rice Rubber and the product was packaged to a reusable packaging which consisted of 65% less paper use. (Marati, 2013) The product could also be returned to the company at the end of its life cycle with the company's Bring Me Back program. (Pasolini, 2013) However after two years the line was pulled from the market, due to poor demand. (Chhabra, 2015) Currently the brand has no sustainable product initiatives on the market however the brand has partnered with Last Mile to launch a sustainable sportswear collection in 2020 using recycled polyester. (Puma Catchup, 2019) Puma partnered with other industry peers in 2018, the Fashion Charter for Climate Action launched by the United Nations is designed for brands to collaborate in achieving mutual sustainability goals in the industry. (Puma, 2019)

The current 2020 targets of the company are announced to be 10 social, environmental and corporate target areas for the time frame of five years, following the United Nations Sustainable Development Goals. The former Chief Operating Officer stated in 2016 that "while we mainly focused on environmental targets in recent years, our new targets '10FOR20' acknowledge the fact that sustainability requires a comprehensive approach to the economic, environmental and social opportunities and challenges we face" stating

that the company wants to integrate sustainability in its business functions. The most important target for 2020 was stated as to cover issues in the brands' supply chain regarding social and environmental matters. The head of corporate sustainability Stefan Seidel stated that the company has previously concentrated on the factories delivering the company the finished products however little focus has been on the component and material suppliers. Part of the brands targets in the list of 10 social, environmental and corporate target areas for sustainability, included 50% usage of all cotton from more sustainable sources, through the Better Cotton Initiative, the company achieved the goal two years earlier. (Puma Catchup, 2019) New target has been set for 2020 to be 90% cotton from the Better Cotton Initiative. The sustainability initiative with Better Cotton however is rather social, ensuring the wellbeing of the farmers and reducing water usage and toxics in the farming for the wellbeing of the community, which is a step to the right direction however as discussed previously the usage of more sustainable or organic cotton still holds a large water consumption issue. The targets also include increase use of Bluesign polyester however there is no further detailed information on emission targets or the impact of the company. Neither on investments on technologies for future sustainable design. (Puma sustainability, 2019)

The brands in the industry more often deal with similar issues, sharing the suppliers and the market, therefore it is important to compare how the companies deal with the issues in the industry in terms of sustainability and their efforts on developing sustainability, the next section will discuss the results and analysis of the research.

4   Research results and analysis

The research results and analysis of the literature covered previously will be discussed in this section, where the author will discuss the sustainable efforts of Nike, Adidas and Puma reflecting these to the sporting goods industry in general answering the research question. This section is the author's analysis of the three brands and the industry, using the theoretical basis.

4.1 Comparison of sustainable efforts of Nike, Adidas and Puma in reflection to the sporting goods industry

The research shows that sustainability does exist within major sports brands however it is highly fragmented and appears in different levels. There are many complex factors to consider and the sustainable impact and its value can be hard to measure, which can be seen after examining the sporting goods industry, businesses and the leading sports brands. Sustainable impacts might take years or even centuries to be able to be measured, therefore targets are often spread out to the time frame of longer periods as well, such as 5 years most commonly. The research shows that the brands have been well recognized in managing the footprint of their owned facilities, offices excreta. However most of the sustainable impact of the brands currently comes from the supply chain as stated by Adidas corporate website, therefore this suggests that companies truly looking to improve their sustainable impact should focus minimizing their footprint in the supply chain and creating innovations to further develop sustainability in this area. More innovation, technology and design are needed to further develop sustainability in the industry. These require collaboration with other brands, support from the industry and demand from the consumer.

The authenticity of Nike, Adidas or Pumas sustainable efforts is hard to evaluate, as the industry and brands have a history of exploitation of cheap work force and environmental damage. (Greenpeace, 2011) These are topped with the need to prioritise product performance, which generally requires the use of chemicals and processes causing damage, (Beard, 2008) as other alternatives are not yet in place or discovered. Another reason is as most efforts in the history are known to have started as preventative actions due to risk of bad reputation or pressure from the public, which in fact all the three brands have faced. The case of the scandals with Nike especially, have served as an example for the other brands on how the reputation of a company can be damaged, although the brand managed to inverse its bad reputation. (Beder, 2002)

The industry and the sport brands have come a long way since then in their efforts regardless and have relatively sophisticated systems of supply chain management in place for dealing with social and environmental issues, including auditing and third-party verification. The brands are recognized today by sustainability indexes such as the Dow Jones Sustainability Index and others. (Greenpeace, 2011) The third-party verification is

useful for the brands firstly to gain trust from their sustainable efforts, in case of scepticism as businesses have realised the expectations of the consumers, governments and the public in general. Secondly partnering with external organizations as Adidas, Nike and Puma have done with for example Bluesign, NGOs and IGOs, helps the companies to gain knowledge, set targets and tools for their efforts. The third parties are able to compare the brands to others in the industry, which gives guide and helps the brands to evaluate the amount of sustainable efforts expected and needed. Where businesses might question how much is enough of sustainable efforts and investment, taking into consideration brands own targets and comparing action to other brands in the industry. This is true especially in the sporting goods industry as the damages and risk in the industry is high, however the sport brands do not position themselves solely as a sustainable brands, more as appearing responsible and innovative when it comes to sustainability. Furthermore, returning to the point that sports brands main objective is performance-based products.

Adidas and Nike have seen an opportunity to further develop design, taking a more sustainable approach, developing innovations from a more holistic approach including recyclable materials to "non-sustainable" collections as well in comparison to Puma, which strategy is focusing solely in the supply chain part of sustainability. Although most of the impact of the brands come from the supply chain as estimated by Adidas research, 80% of the footprint of a product can be determined in the design stage which affects all the parts of the lifecycle of that product. Furthermore, therefore this should be a huge consideration for brands wanting to develop their sustainable footprint. A sustainable product to be successful though the style, performance, price and story needs to be in place and well executed. The consumers are demanding more, and only sustainable product is not enough, they expect to have as stylish, functional and similar price product, with the values and extra advantage of sustainability offered, for the product to be attractive as stated by the World Economic Forum. Taking the example of Puma's InCycle collection as an example, which needed to be eventually pulled out of the market due to poor demand. (Chhabra, 2015) Whereas Parley from Adidas have sold over million pairs of shoes, (Parley, 2019) which shows that the consumer is there, if the style, performance, price and marketing are in place which play a big role. As in the case of Parley though one needs to critically understand that product claimed sustainable, can still have a negative impact with the current materials, processes such as transportation or manufacturing which could out weight the initial sustainable advantage. Furthermore,

this holds a risk of eventually to be perceived as a "sustainable stunt" to seem as sustainable only to the public.

It can be argued however that the sporting goods brands are contributing to sustainability from a high-quality perspective where products are very durable, therefore in comparison to the fashion lifestyle industry, the sports products have longer-life cycle enabling extended use and avoiding the product ending into waste not as fast. Taking into consideration the current consumption culture however and the amount of sporting goods thrown into waste by the consumers annually only by US for example, there is no guarantee that the consumers would not still throw the product to waste earlier than at the real end of the products life cycle. (Subic, 2010)

Nike, Adidas and Puma share many of the issues and opportunities in sustainability in the highly competitive and dynamic market. The brands approach sustainability with the "three pillars of sustainability" perspective towards the right steps discussed in this thesis however to reach an effective holistic sustainable approach; strategy, further development, innovation and further motivation is still required before brands are close to their own targets, consumers expectations and in contrast to the damage that the industry is causing. The motivation for sustainability for the brands can be argued to be business related such as brand image, consumers and employee attraction. Companies hardly can perform from a purely ethical perspectives as stated by Ikerd, since they have economic incentives to take into consideration and many stakeholders to please, balancing these while making profit however good company reputation halos to other parts of the business. Therefore Nike, Adidas and Puma will need to appear authentic and responsible, especially facing the generation of millennials and future consumers who are expecting action.

5 Conclusion

The research shows that the widely accepted definition of sustainability includes the "three pillars of sustainability" which are economic, environmental and social sustainability aspects. (Hutchins & Sutherland, 2008) The idea of sustainability is fundamentally focused on the future examining the long-term effects of human actions and how to support the human population and economic growth, taking into

consideration the earth's biophysical environment, balancing the current needs without compromising them for future generations. The three pillars theory calls for balance between the dimensions for ideal sustainable development. (Portney, 2015)

It can be considered that the current and previous models of human consumption and industrialization do not support the world's growing population or nature in the long term. While consumption has led the way for important economic growth it has simultaneously led into over consumption and environmental degradation. Consumers have become more aware and concerned in sustainable issues and the future, which is no longer a niche market of environmental activist. (Portney, 2015) Ethical values, transparency and authenticity for consumers are becoming essential as they are seeking products, services and brands that meet their expectations and aspirations in the highly competitive market environment. (Beard, 2008) The dominant consumer group of millennials are the biggest spenders and represent 25% of the global population, valuing brand characteristics relating to; sustainability, environmental friendliness, ethical practices, social factors, on top of quality and price. The market has a unique power and efficiency on driving changes quicker than governments or organizations through demand when it comes to human opportunity and environment. (World Economic Forum, 2013) The idea of sustainable consumption is experiencing a shift from the idea of limiting consumption, towards finding innovations and alternative options to enable consumption culture, without causing the necessary harm currently caused with environmental and social factors. To ensure natural resources, economic growth and quality of life needed to thrive, sustainable approach to living is needed in the long term.

The sporting goods industry and brands share a great responsibility in sustainability, as they impact large amount of people and earth with their business practises. These brands are expected to be profitable, further fund innovation and increase market share while finding sustainable solutions. Gaining the loyalty of millennial consumers is by displaying ethical practices and sharing information transparently to earn their respect. Furthermore, millennials are conscious about modern attractive employers sharing their values, which further encourages brands to appear as responsible to attract talent. The sustainability for brands includes many factors such as design, supply chain management, reducing waste, minimizing energy consumption, recycling, waste, sustainable marketing and further innovation. Furthermore, increasing demand for personalised products and pressure towards sustainability by the public has led the

leading brands to figure ways of showing their sustainable efforts and investing into research and innovation. (World Economic Forum, 2013) Businesses often cannot operate fully from an ethical standpoint, as there need to economic incentives balancing pleasing many stakeholders and making profit. Therefore, sustainable efforts are often based on brand image, legislative requirements, saving costs or attracting customers and employees. (McKinsey & Company, 2017)

Sporting goods industry is large, estimated in 2014 to be valued at 318 USD globally mainly dominated by handful of brands lead by Nike, Adidas and Puma. (Au, 2017) The topic of sustainability is difficult in the industry, as sporting goods are based on chemicals and complex materials which gives the products their functionality. (Subic, 2010) Furthermore, the industry and the history of the three brands is based on outsourcing manufacturing and resources to Asia and other developing countries due to cheap labour, which causes controversy and social responsibility issues. The leading brands have shown many initiatives from sophisticated supply chain management programs, partnering with private organizations and third parties, to developing the company knowledge for further innovation, however brands need to be cautious when claiming something sustainable, as so far many of the initiatives still have a large footprint when it comes to product and furthermore supply chain issues pop up in the media from time to time. (Greenpeace, 2011) Furthermore, sustainability can be extremely hard to measure in the industry. Many sustainably claimed materials such as organic cotton, still poses a large issue with water usage. The brands are also operating with hundreds of partner factories, which deliver separate parts of garments or resources and ensuring that all parts of an item are ethical or sustainably produced can pose a managing issue. (Subic, 2010) The research shows that the brands have been well recognized in managing the footprint of their owned facilities, offices, stores excreta. However most of the sustainable impact of the brands currently comes from the supply chain, where most the brands services are outsourced. Brands truly looking to improve their sustainable impact should focus minimizing their footprint in the supply chain and creating innovations to further develop sustainability in this area.

Nike and Adidas have led the way in further strategizing sustainable innovation and design thinking, implementing more sustainably claimed materials also into collections which are not specified as "sustainable collections" as can be seen from the companies' corporate websites. Whereas Pumas strategy is focusing mainly on the supply chain.

(Puma, 2019) It is estimated that approximately 80% of an products environmental burden is determined in the design stage, as decisions are made regarding materials and processes used for the new product. (Subic, 2010) Therefore, companies wishing to develop their sustainable footprint should give this large consideration as the design affects all stages of the product, therefore also the supply chain. Taking into consideration the entire life cycle of a product is important to truly make an impact. The consumer is there, which can be seen from the hugely marketed Adidas Parley campaign. The expectation is that design, price, performance and story need to be in place, for the product to be truly appealing to the customer, only sustainability is not enough. (World Economic Forum, 2013) It can be argued however that as the sporting goods brands are producing durable high-quality products with longer-life cycle enabling extended use and avoiding the product ending into waste not as fast this is contributing to sustainability. Taking into consideration the current consumption culture however there is no guarantee that the consumers would not regardless throw the product to waste earlier than at the real end the products life cycle. (Subic, 2010)

Nike and Adidas are also investing largely on the company owned sites, on renewable energy, zero plastic etcetera creating the facilities and retail stores more sustainable, from which they have received large recognition from third party sustainable indexes, where we are yet to see these initiatives from Puma. Comparing the three leading sport brands shows that the brands share many of the issues and opportunities in sustainability. The research shows that sustainability does exist within major sports brands however it is highly fragmented and there are many complex factors to consider and the sustainable impact and its value can be hard to measure. Measuring depends on context and might take years to be measured, therefore implementing sustainability similarly to other strategic initiatives is more difficult in business.

More innovation, technology and design are needed to further develop sustainability in the industry. These require collaboration with other brands, support from the industry and demand from the consumer. Increased understanding of how and through which processes a proper sustainable decision can be made.

The research was conducted by qualitative research method using carefully selected secondary data sources. Due to the major amount of information available and many viewpoints the author needed to be careful to select and validate the data collected.

However, examining the topic globally this was necessary to receive a comprehensive understanding, which could have not been possible without secondary sources. Limitations during the research were to find accurate information on the exact size of the fragmented sporting goods industry globally, furthermore up to date exact market shares of the three leading brands in the industry and their real holistic sustainable impact or damages, as this is hard to measure and mainly divided into sections and most of the information on companies' own publications were top line discussions on topics however details or real scope of the issues were not shown. However, the author was able to examine many aspects and viewpoints in the research, furthering the knowledge of the industry and brands in terms of sustainability.

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2020 TARGET PERFORMANCE SUMMARY

KEY	▲ Increase	▼ Decrease
Favorable	▲	▼
Unfavorable	▲	▼

MINIMIZE ENVIRONMENTAL FOOTPRINT

Metric	Unit of Measurement	FY15	FY16	FY17	FY17 Change vs. Baseline	FY20 Target
PRODUCT						
Average Product Carbon Footprint[1]	kg CO_2e/ unit	7.33	7.19	7.15	▼ 2.5%	▼ 10%
Product Scored on Sustainability Performance	%	27%	68%	71%	▲ 44 p.p.[2]	80%
MATERIALS						
Sustainable Materials[3] – Apparel (AP)	%	19.0%	20.2%	29.6%	▲ 10.6 p.p.	▲
Sustainable Materials[3] – Footwear (FW)	%	30.6%	31.3%	32.5%	▲ 1.9 p.p.	▲
Cotton Sourced More Sustainably[4]	%	24.1%	33.3%	54.1%	▲ 30 p.p.	100%
ENERGY & EMISSIONS						
Renewable Energy – Owned or Operated[5,6,7]	%	14%	20%	22%	▲ 8 p.p.	100%
Energy Consumption Per Unit – Key Operations[8]	kWhe/unit	4.70	4.25	4.70	0%	▼ 25%
Carbon Emissions Per Unit – Key Operations[8]	kg CO_2e/ unit	1.74	1.61	1.74	0%	▼ 25%
Energy Consumption Per Kg – Textile Dyeing and Finishing[9]	kWhe/kg	15.86	15.46	14.95	▼ 5.8%	▼ 35%
Carbon Emissions Per Kg – Textile Dyeing and Finishing[9]	kg CO_2e/ kg	4.78	4.68	4.55	▼ 4.8%	▼ 35%
WASTE						
Waste to Landfill[10] – Footwear Manufacturing	%	N/A (FY16 BL)	6.6%	4.0%	▼ 2.6 p.p.	0%
Waste Index[11] – Footwear Manufacturing, Distribution Centers (DCs), and Headquarters (HQs)	N/A	100[12]	98.2	100.8	▲ 0.8%	▼ 10%
Landfill Diversion – DCs and HQs	%	88.4%	87.1%	87.9%	▼ 0.5 p.p.	▲
WATER						
Freshwater Use Per Kg – Textile Dyeing and Finishing[9]	L/kg	N/A (FY16 BL)	126.5	117.2	▼ 7.4%	▼ 20%
CHEMISTRY						
Tested Material in Compliance with NIKE Restricted Substance List (RSL)[13]	%	95%	99%	98%	N/A[14]	100%
Suppliers Meeting NIKE's Wastewater Quality Requirements – Textile Dyeing and Finishing[9]	%	N/A (FY16 BL)	57.8%	72.6%	▲ 14.9 p.p.	100%

Appendix 1. Nike's 2020 target performance summary (Nike, 2017)

2020 TARGET PERFORMANCE SUMMARY

TRANSFORM MANUFACTURING

Metric	Unit of Measurement	FY15	FY16	FY17	FY17 Change vs. Baseline	FY20 Target
MANUFACTURING[15]						
Factories Rated Bronze or Better	%	86.0%	86.6%	90.9%	▲ 42.1 p.p. (vs. FY11 BL)	100%
Factories with Excessive Overtime (EOT)	%	3.3%[16]	3.2%	3.9%	▲ 0.6 p.p.	0%

UNLEASH HUMAN POTENTIAL

Metric	Unit of Measurement	FY15	FY16	FY17	FY17 Change vs. Baseline	FY20 Target
COMMUNITY IMPACT						
Annual Investments as % of Pre-Tax Income (PTI)	%	1.9%	1.8%	1.9%	N/A[17]	1.5%

Appendix 2. Nike's 2020 target performance summary part 2 (Nike, 2017)