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Sustainable awareness: Toward a green working environment within KLM Airframe

Awareness campaign around sustainability among Airframe employees

Master Thesis
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Royal Dutch Airlines

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Preface

At the beginning of the academic year 2022-2023, the search for a thesis topic for my master's thesis started. In due course, the idea arose to conduct a research focusing on human behaviour in relation to sustainability. I compiled a list of potential companies where I could carry out the research and at the top of this list was KLM Royal Dutch Airlines, a business that has captivated my interest since I was young. I discovered a vacancy for a research graduation project at KLM Airframe where the assignment was to raise awareness of sustainability among employees through the use of appropriate internal communication. The assignment perfectly matched with my envisioned graduation project. I decided to apply, I was then invited to come for an interview and, much to my delight, was chosen as an intern for this research from mid-February to the end of June.

In front of you is the master thesis: 'Sustainable awareness: Toward a green working environment within KLM Airframe'. This research provides in-depth insight into employees' behaviour towards sustainability in order to subsequently devise suitable internal communication strategies that can increase sustainability awareness and subsequently promote sustainable behaviour. I look back on an incredibly pleasant and instructive period at the Airframe department, where I was warmly welcomed and where I immersed myself in the daily operations of employees at different sub-units. I was able to develop a clear understanding of employees' behaviour and attitudes towards sustainability in general and specifically in the working environment and found out to what extent they are confronted with sustainability during their daily work. I was able to experience the dynamic world of aviation and the processes behind it at close quarters, which increased my interest in aviation.

This master thesis was written as part of my graduation for the master Cultural Geography and Tourism at the Radboud University in Nijmegen. This master is one of the six specialisations of the master's in Human Geography. I am grateful for choosing this education as I have learnt a lot throughout the inspiring and diverse modules and conquered challenges. I was able to apply the knowledge and skills I learned in the past two years in this thesis to achieve this final result.

I would like to take this opportunity to thank my thesis supervisor, prof H. Ernste, for his pleasant guidance during my thesis research. Both the interactive meetings with fellow students and the personal meetings, the wise advice on the structure of my thesis and the inspiration and recommendations for scientific sources contributed to the successful completion of the thesis. I would also like to thank my supervisors from KLM, Michèle Overdevest and Aernout Dousma, for their great guidance during my internship. Thanks to them, I immediately felt part of the department and with their help, expertise and commitment I was able to carry out the research with great pleasure and finish it on time. Finally, I would like to thank all the respondents for their willingness to participate in the research. Their honesty and vulnerability led me to a deep understanding of employees' behavioural patterns towards sustainability which formed the input for the final results discussed in detail in this master thesis.

I wish you a lot of reading pleasure.

Elise de Vries

Breda, July 2023

Executive Summary

Many airlines are currently in a challenging position, recovering from the effects of the corona pandemic, while facing a global supply chain crisis and simultaneously being obliged to improve the sustainability of its daily operations. This research specifically addresses the challenge of making sustainability a higher priority within KLM Airframe. Previous research into sustainability initiatives within this division of KLM Engineering & Maintenance indicated limited awareness of sustainability in the working environment. This prompted the follow-up research to raise awareness for this phenomenon by deploying appropriate communication strategies.

Prior to the field study, a literature review was conducted on (guiding) human behaviour, internal communication and human attitudes towards sustainability. This revealed the necessity of taking into account employee needs when implementing changes within organisations and pointed out that clear communication on the company's vision and objectives can generate understanding for the respective change (Stolzenberg and Heberle, 2022). In addition, Ajzen and Fishbein's model demonstrated that background factors play a significant part in the intention to perform certain behaviour. This clearly reveals the motivation and thoughts that underlie human behaviour. The data from the literature review subsequently corresponded to the results from the field study. Through semi-structured interviews and participatory observations, data were gathered that provided in-depth insight into employees' behaviour and attitudes regarding sustainability in general and specifically in the work environment and the needs employees have in sustainability communication. The data were analysed in the programme ATLAS.ti, which identified the most relevant outcomes.

The findings revealed that effective communication should target employees from the operation through the use of CleverDisplays, office employees via departmental newsletters and both groups through the KLM NewsApp. Employees express a strong desire to be more engaged in sustainability processes and emphasise the need for positive communication regarding sustainability. They underscore the importance of bringing forward the relevance of sustainability in communication by making the concept more tangible and showcasing its positive impact. Moreover, it is crucial to provide clarity on how employees can contribute to sustainability on an individual level and its impact, as they are currently sceptical on the visible impact of environmental conscious behaviour. The communication strategy should incorporate visually appealing content, presenting concise yet impactful facts on the necessity and impact of sustainability efforts. By developing a specific template including a logo and a distinct colour scheme, sustainability communication will stand out and increases the likelihood of employees engaging in this specific information on reducing the environmental impact.

In summary, it is paramount to actively involve employees in sustainability efforts by demonstrating that it is a core value for the company, necessitating collaboration from all staff members. This approach aims to bridge the existing gap between employees and the concept of sustainability. By conveying information in a concrete manner and by establishing a direct connection between the individual contribution and the personal work, employees will gain a heightened awareness of the impact of their actions on the environment.

After implementing the optimised sustainability communication, employees are consistently exposed to the impact of environmentally conscious behaviour, thereby enhancing their awareness. Crucial is to offer resources that can foster and sustain sustainable practices. Therefore, the proposed recommendation for the follow-up assignment is to develop a position for a collaborative intern that will specifically address the implementation of sustainable initiatives, with the aim of elevating the priority of sustainability within the Airframe department.

Keywords: Human behaviour, Corporate Social Responsibility (CSR), employee engagement, sustainability, internal communication, means of communication.

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List of Abbreviations

Abbreviation	Definition
AFI KLM	Air France Industries KLM
AOG	Aircraft On Ground
CIL	Continuous Improvement Lead
CL	Culture Lead
CO_2	Carbon dioxide
CS	Component Services
DT&CI Airframe	Data, Transformation & Continuous Improvement Airframe
ES	Engine Services
GWK	Grondwerktuigkundige
KLM E&M	KLM Engineering & Maintenance
LMS	Line Maintenance Schiphol
MEF	Material, Equipment & Facilities
NB	Narrowbody
OCC	Operations Control Centre
PCM	Preventive plant, Corrective plant & Maintenance Support
PSFc	Planning, Scheduling & Fleet control
RAA	The Reasoned Action Approach
SAF	Sustainable Aviation Fuel
The MRO Lab	The Maintenance, Repair and Overhaul Laboratory
WB	Widebody

Chapter 1. Introduction

1.1 Introduction

The aviation industry has a vital role in modern society, connecting people and providing opportunities for international trade and travel. However, the growth of aviation has also led to rising concerns regarding its global environmental impact. Globally, aviation is recognised as a significant contributor to greenhouse gas emissions. Currently, aviation accounts for about 2.5% of the total CO_2 emissions (Ministry of Infrastructure and Water Management, 2023). According to Statistics Netherlands (2022), emissions in the Netherlands were an even higher percentage, at 4.5% in the year 2021. When considering effective measures to combat climate change, governments are often tempted to impose restrictions on airlines to reduce flight movements. Aviation faces a complex dilemma, with awareness of the environmental impact of flying and the resulting restrictions on the one hand, while on the other hand, the desires to continue visiting distant destinations among consumers remain, leaving flying as the only available option (Hermanides, 2018).

KLM Royal Dutch Airlines acknowledges its environmental impact and aims to mitigate the ecological footprint by placing increasing emphasis on sustainability throughout its operations. This commitment is evident in the company's sustainable business strategy and vision, which describes that they are *pioneering to become a frontrunner in sustainable aviation* (KLM Royal Dutch Airlines, 2023). They aim to achieve this by being at the forefront of innovations and evolving with social developments. Moreover, the organisation has established a set of sustainability objectives that serve as a compass for implementing sustainable practices. Presently, the airline dedicates significant attention to enhancing the sustainability of activities both within and around its aircraft. One notable initiative is the KLM Corporate Sustainable Aviation Fuel (SAF) Programme, which entails the partial substitution of traditional kerosene with sustainable biofuel (KLM Royal Dutch Airlines, n.d.). Alongside these large-scale initiatives, there is also an increasing emphasis on sustainability within the work environment. In order to foster a more sustainable working environment, cooperation and participation of employees are crucial.

The active involvement of employees in corporate transformations has proven to be pivotal for the effective implementation of change. By integrating employees into business operations and affording them an active role in decision-making processes, the gap between employees and the respective change is reduced. In the context of sustainability initiatives, comprehending the potential impact that employees can have, both individually and collectively, assumes significant importance. Proactive engagement of employees can result in a strong connection between individual efforts and the overarching organisational objectives. Stolzenberg and Heberle (2022) underscore the necessity of consistently communicating the company's vision to the outside world, as it elucidates the company's priorities and demonstrates ways in which employees can contribute to this endeavour. The authors stated the following: *"...It is crucial to consistently communicate the vision, to seek continuous dialogue with those affected, to relate decisions to the vision, and thus to emphasise its importance"*. Hence, it is imperative that the sustainability vision resonates not only within society but also within the internal work environment. To establish a connection between employees' daily activities and the sustainability vision, the initial crucial step entails implementing a robust awareness campaign. This campaign aims to inform employees about the organisation's sustainability ambitions and foster a heightened sense of awareness regarding sustainability.

In this master thesis, an attempt was made to gain insight into the behaviour of employees within KLM Airframe and the possibilities of promoting sustainable behaviour through targeted internal communication that align with the individual needs of employees. The study aimed to identify potential barriers and facilitators for sustainable practices within the organisation.

1.2 Problem statement

The increasing focus on sustainability in society requires optimisation of business processes within KLM to ensure sustainability. External pressures to adopt sustainability are forcing companies to take a proactive stance to reduce their carbon footprint. However, previous research indicates low levels of employee awareness of sustainability within KLM Airframe (Koning, 2022). In the subdivisions of Airframe, sustainability has a relatively low profile, resulting in limited awareness of environmentally conscious actions in day-to-day operations. The problem statement can therefore be formulated as follows:

The insufficient engagement of employees in sustainable practices within KLM Airframe, despite the societal emphasis on sustainability, poses a challenge. The lack of commitment can have detrimental effects on the environment, the company's competitive position and its ability to meet the established sustainability targets for 2030.

The absence of sustainable practices within the working environment leads to a greater environmental impact than necessary. Likewise, it fails to contribute to achieving the sustainability targets set for 2030. Addressing this issue requires a thorough analysis of the underlying factors influencing this behaviour to develop effective internal communication strategies to encourage sustainable behaviour within the organisation. Communicating the relevance of sustainability appropriately can effectively address the target audience and prompt them to change their behaviour.

1.3 Research objective and research questions

This research concentrates on three interrelated aspects, namely psychology, communication and sustainability. The study is conducted at KLM Engineering & Maintenance in the Airframe subdivision located at Schiphol-East. Employee behaviour and attitudes towards sustainability are being investigated in order to find out which communication strategies should be deployed to stimulate sustainable behaviour in the working environment. To get a clear view of the exact purpose of the research, a research objective was devised. This objective serves as a guide in this study and identifies the importance of the research:

Gaining an in-depth understanding of how KLM Airframe can effectively raise awareness among its employees for sustainability in the working environment by deploying appropriate internal communication strategies, with the ultimate goal of contributing to the achievement of KLM's 2030 sustainability targets.

In accordance with the research objective, a primary question has been formulated that contains the interrelationship of the three main facets from this study:

What specific internal communication strategies should be employed to effectively induce sustainable behavioural change among employees of KLM Airframe?

To answer the main question effectively, the following sub-questions were drafted to gain more insight into employee behaviour and explore strategies for fostering sustainable behaviour through internal communication.

- To what extent do Airframe employees perceive the significance and added value of sustainability in the department?
- What psychological strategies are required to guide conscious sustainable behaviour?

- To what extent do the existing communication tools within Airframe contribute to creating awareness among employees for sustainability?
- What are employees' needs in terms of means of communication?

1.4 Societal relevance

In 2015, countries affiliated to the United Nations gathered in New York to debate tactical approaches to combat climate change. Seventeen sustainability goals were set to be achieved by 2030 to promote global prosperity while reducing environmental impacts (United Nations, 2021). Global warming has already cost the lives of numerous people due to extreme weather conditions and other natural threats. It frequently impacts the most vulnerable individuals within society. In addition, climate change also has serious consequences for the economy and society as a whole. Restoring affected areas in the wake of environmental disasters requires significant financial resources and it can take years for communities to fully recover. Sustainability Goal 13 Climate action specifically addresses climate change mitigation and urges countries to significantly reduce greenhouse gas emissions. If global emissions continue to rise, people will be increasingly affected by natural disasters and other hazards (United Nations, n.d.). Complying with Sustainability Goal 13 will contribute to maintaining a liveable planet and ensure a sustainable future for current and future generations.

Combating climate change poses significant challenges for countries and sectors alike, as it involves profound transformations. Mommers (2021) views aviation as a direct threat to achieving the United Nations' sustainability goals. The author argues that the number of aircraft movements must be sharply reduced to keep the planet liveable for both current and future generations. As a result of flying, the composition in the atmosphere is altered, as many toxins are emitted into a fragile environment due to aviation. Governments worldwide are capitalising on this by implementing flight taxes. The Netherlands has made its contribution by introducing air taxes to encourage consumers to more frequently make use of sustainable modes of transport like trains (Central Government, 2023). Merely applying air taxes is not sufficient to reduce carbon emissions. Airlines must comply with environmental regulations to reduce both environmental impact and noise pollution for local residents (Ministry of Infrastructure and Water Management, 2017). In addition, technological developments are key in advancing sustainability in the aviation sector by providing innovative insights and solutions that help reduce the environmental impact.

Regulations and technological developments are extremely important in reducing CO_2 emissions. However, awareness of the necessity of sustainability plays a crucial role in reducing global environmental impact. Although sustainability can occasionally feel like a moral obligation, an increasing number of companies are genuinely convinced of the need to make day-to-day operations more sustainable. Nonetheless, one danger is that many adjustments that contribute to sustainability are often temporary. Lasting change can only emerge from awareness and intrinsic motivation: when the incentive comes from the individual oneself by aligning one's values with the principles of sustainability (Samson, 2023). When individuals possess intrinsic motivation to carry out their daily activities in an environmentally conscious manner, the resulting impact is likely to be more substantial compared to actions driven solely by top-down imposition (Graafland & Bakker, 2020). One acts accordingly from the inner realisation that it is the right decision rather than on account of external constraints. It is therefore vital for a company to devote attention to sustainability in the internal communication, as on the one hand it can ensure that employees see the necessity of sustainable practices for both society and the company itself, and on the other hand it can lower the threshold to contribute to environmentally conscious behaviour.

The growing influence of global warming necessitates a collaborative approach aimed at mitigating its impact to ensure the habitability of the planet. Within KLM, the integration of sustainability into its operations is paramount in order to achieve the intended outcome. It is vital to prioritise sustainability

in today's society to prevent further global warming. By fostering consciousness through internal communication strategies, followed by the implementation of sustainable practices and fostering effective collaboration with stakeholders, KLM can remain pioneer in reducing the environmental impact of the aviation industry, thereby safeguarding a sustainable planet for forthcoming generations.

1.5 Scientific relevance

The exploration of human behaviour and attitudes within organisational contexts is a captivating field of study and numerous scholars have dedicated their efforts to conducting research in this domain. The existing body of literature in this area is substantial and continues to expand over time. Sanders, van Emmerik and Raub (2002) argue that change within organisations requires solidarity behaviour from employees (Sanders, Emans & Koster, 2004). Companies increasingly want to involve employees in business operations in order to jointly contribute to achieving the organisation's objectives. Increasing involvement may result in a more solidary attitude of employees towards innovations and changes. Employee engagement has been found to have an impact on job satisfaction and staff well-being (Albrecht, Green & Marty, 2021). It makes employees feel more connected to the company, often subconsciously leading to a greater understanding of corporate changes. Shavrovskaya and Borodina (2022) assert that when employees are actively engaged in their work, they exhibit higher levels of commitment, productivity and overall performance, which has a positive influence on the effective functioning of a company. Paying sufficient attention to including employees in decisions and the overall course of action can therefore be crucial in a company's success.

The KLM Airframe department has observed that employees are not sufficiently aware of the importance of sustainability in the organisation, while sustainability occupies an important place in the airline's strategy and vision (KLM Royal Dutch Airlines, 2023). By paying more attention to sustainability in the internal communication, employees are included in this process, as they are confronted with the sustainable developments within KLM through different channels. It is crucial to emphasise the underlying thoughts and motives behind sustainability and ensure they are clearly communicated. Furthermore, it is important to highlight that these sustainability changes bring substantial benefits for both the organisation itself and its employees. By making this explicit, employees can better understand the purpose and advantages of the sustainability initiatives, which can increase their engagement and support for these efforts. The “What's In It For Me” approach, that was previously only used in marketing products and services to customers, has gained an important position within organisations in recent years (Cekada, 2018). The approach resonates with the situation around sustainability within Airframe, as there was a recognition of the significance of highlighting how sustainable actions affect employees in order to increase employee engagement in sustainability.

According to Graafland and Bakker (2020), external pressure from society to comply with sustainability can actually be counterproductive for humans. Previous research has in fact shown that this can undermine intrinsic motivation. Yet this will not always be the case as companies increasingly recognise the importance of sustainable operations and therefore want to contribute to it. However, little research has been conducted on how this external pressure affects employees within an organisation, yet the authors (Graafland & Bakker, 2020) suspect that it has the same effect within enterprises. It is crucial to explicitly emphasise in the internal communication that KLM is pursuing sustainability due to its necessity globally and the positive impact it will have on future business processes, rather than just implementing it due to external obligations. This can have a significant effect on employees' perception of sustainable change and may increase the intrinsic motivation to make a contribution.

Evidence derived from Dahiya's (2020) research confirms the need to understand human behaviour in order to make sustainable changes in the workplace. Limited research has been done on fostering sustainable attitudes specifically in the work environment, while, in contrast, the literature pays considerable attention to these behaviours in the domestic spheres (Blok, Wesselink, Studynka & Kemp,

2015; Temminck, Mearns & Fruhen, 2015). Dahiya's (2020) recommendation for promoting sustainable behaviour among employees is to emphasise psychological mechanisms that can link the implementation of a sustainable policy with sustainable behaviour among employees. In other words, the sustainable policies implemented by a company should match the various behaviours of employees. Appropriate standards should be set within the sustainable policy that encourage employees to engage in sustainable behaviour. Gaining insight into psychological characteristics of employees is vital in this regard since, based on this, a sustainable policy can be drafted that effectively affects the green behaviour of employees. However, little attention is paid in the literature to the influence of psychological mechanisms on sustainable attitudes. Therefore, this study can complement the existing research.

This research has a specific focus on employee behaviour and their needs, delving into how these elements can be integrated while implementing effective communication strategies to promote and sustain environmentally conscious behaviour in the workplace. The research makes a valuable contribution towards bridging the existing gap in the literature on applying and maintaining sustainable behaviour within organisations during sustainability-related changes by emphasising the psychological aspects involved.

Chapter 2. Contextual analysis

2.1 KLM Royal Dutch Airlines

KLM Royal Dutch Airlines was founded in 1919 in The Hague and has expanded to become one of the largest employers in the Netherlands, employing approximately 27.000 individuals. Prior to the COVID-19 pandemic, the workforce was considerably larger, but significant staff reductions took place during this challenging period. In 2004, KLM entered into a strategic alliance with Air France, primarily motivated by the airline's desire to maintain its landing privileges and secure Schiphol's position as a major international hub. The airline is segregated into three divisions, comprising Engineering & Maintenance, Cargo and Passenger Services. Each of these divisions encompasses multiple subdivisions, each responsible for its own distinct set of functions. The present study is centred around the KLM Engineering & Maintenance division, specifically emphasising the Airframe subdivision.

2.2 KLM Engineering & Maintenance

KLM Engineering & Maintenance (E&M) is a department within the airline KLM where as many as 12.800 employees are involved in the technical maintenance of aircraft and all the internal and external processes involved. Together, they ensure that safety in and around aircraft is guaranteed and that the processes involved run smoothly and efficiently. E&M consists of a number of sub-units, including Airframe, Engine Services (ES), Component Services, Engineering and Staff Units. The current research takes place within Airframe, the maintenance division of the E&M department.

2.3 Airframe department

KLM Airframe as part of E&M takes care of the planning and execution of aircraft maintenance. The department consists of several sub-units that collectively ensure the optimal course of technical maintenance. The scope of the research within Airframe will consist of the following sub-divisions: Line Maintenance Schiphol (LMS), Preventive plant, Corrective plant & Maintenance support (PCM), Planning, Scheduling & Fleet control (PSFc), Material, Equipment & Facilities (MEF) and Hangar 14.

2.3.1 Line Maintenance Schiphol (LMS)

Line Maintenance Schiphol (LMS) is located at Schiphol Centre at Pier F. This department arranges everything related to the technical maintenance of aircraft on the line in order to prepare the aircraft for departure. Standard checks are carried out, along with unplanned technical work that the flight crew report to the ground engineers. Safety and security is crucial in this regard.

2.3.2 Preventive plant, Corrective plant & Maintenance support (PCM)

The Preventive, Corrective & Maintenance support (PCM) sub-unit is located in Hangars 11 and 12 at Schiphol-East. Hangar 11 consists of three different bays and Hangar 12 has one large bay. In these bays, planned and unplanned maintenance is performed for the Widebody (WB) and Narrowbody (NB). In these hangars A-, H- and R- checks are done and in emergency cases an AOG (Aircraft On Ground).

2.3.3 Planning, Scheduling & Fleet control (PSFc)

Planning, Scheduling & Fleet control (PSFc) is a subdivision located at various locations at Schiphol, namely at Schiphol Centre, in the Operations Control Centre (OCC) and the hangars at Schiphol-East. This department is concerned with the planning of fleet maintenance, yet they are also concerned with sustainable employability of employees to optimise employee health and working conditions.

2.3.4 Material, Equipment & Facilities (MEF)

The Material, Equipment & Facilities (MEF) subdivision ensures that aircraft parts are ordered at the right time so that they are delivered on time when an aircraft needs technical maintenance. Furthermore, the department keeps an eye on inventories and monitors the most efficient way to manage them. The ordered parts are subsequently forwarded to the mechanics to be used in aircraft maintenance.

2.3.5 Hangar 14

The last sub-unit that is part of the scope is Hangar 14. This hangar is utilised for Widebody (WB) and Narrowbody (NB) C-checks. This involves the more extensive and often longer-term maintenance of aircraft. Airframe consists of other sub-units, however, these are not part of the scope of the study.

2.4 KLM Sustainability Goals

Sustainability is gaining prominence in society and an increasing number of companies are recognising the importance of making their organisations more sustainable. Awareness is prevalent within KLM that aviation is a polluted industry and therefore solutions are being sought to green the company. To this end, the company has set three sustainability targets that they want to achieve by 2030. The first objective relates specifically to CO_2 emissions generated by flights and aims for a 30% reduction in CO_2 per pax/km by 2030 compared to 2005. The following two objectives directly affect the Airframe division and are therefore relevant to take into account in day-to-day operations. The second objective is zero emissions from all ground operations and the third objective is to reduce non-recycled waste by 50% compared to 2011. Employee cooperation is paramount in this regard as with employee contribution and commitment these targets can be achieved.

2.5 Previous research

This research builds on previous research (Koning, 2022) done by an intern who was working for Airframe as well. The intern researched sustainable projects that Airframe should focus on to achieve the sustainability targets set by KLM. These projects were included in a roadmap that provided clear insight into the recommended short- and long-term projects. Following the research, the student made recommendations for follow-up research. One of these recommendations was to create more awareness for sustainability among employees within Airframe through a sustainability campaign. The recommendation for follow-up investigation was further expanded upon by a number of Airframe employees. They focused the research on ways in which specifically communication tools can assist in increasing the awareness of sustainability and encourage sustainable behaviour.

2.6 Awareness Campaign

The sustainability campaign aims to make Airframe employees more aware of the importance of sustainability. Previous research revealed low awareness of sustainability in the work environment among employees. Raising awareness among employees is therefore important, as employees can make a positive contribution to change within organisations. Employee engagement is thus crucial as it can increase motivation to effectively contribute to change. In order to discover how to heighten the awareness, various research methods were used to obtain in-depth information concerning the motivations and thoughts that underlie employee behaviour in the work environment. It also identified which modes of communication are effective and ineffective to employ to raise awareness. In addition to appropriate communication tools, the content of these tools was also determined based on the needs of employees that emerged during the field research. This will allow the deployment of communication tools that promote sustainability and correspond to the wants and needs of employees within Airframe. The strategy for the sustainability campaign will be written down in a communication plan.

Chapter 3. Theoretical framework

3.1 The complexity of human behaviour

For centuries, well-known philosophers and scientists have been examining the intricate process of human behaviour and numerous theories have been advanced on this. Dating back to history, the philosopher Socrates asserted that the ultimate objective of human endeavours is the pursuit of happiness (Moore, 2019). When one possesses sufficient knowledge, one will act in the right way. Moreover, he argued that acting incorrectly stems from a lack of knowledge of one's purpose. Although Socrates' ideas about man's ignorance were conceived long ago, a certain recognition can be found in human behaviour towards sustainability. An understanding of the purpose of sustainable action is required before individuals actually proceed to sustainable behaviour. When one has knowledge and awareness of the added value of sustainability on the environment, one will be more inclined to contribute to this end. However, when there is ignorance concerning the inherent value of sustainable practices, one will be less prone to engage in sustainable conduct. The philosopher Plato claimed that human behaviour is influenced by fears and desires in addition to logic (Cooper, 1984). This theory can also be seen in the motivations that may underlie the display of sustainable behaviour. Feelings of fear and uncertainty about the future of the world due to climate change can lead to increased awareness of human impact on the environment. This can prompt behaviour modification, in which people engage in behaviours that reduce environmental impact to combat global warming. Thus, the fear of an unliveable planet for future generations can motivate sustainable behaviour.

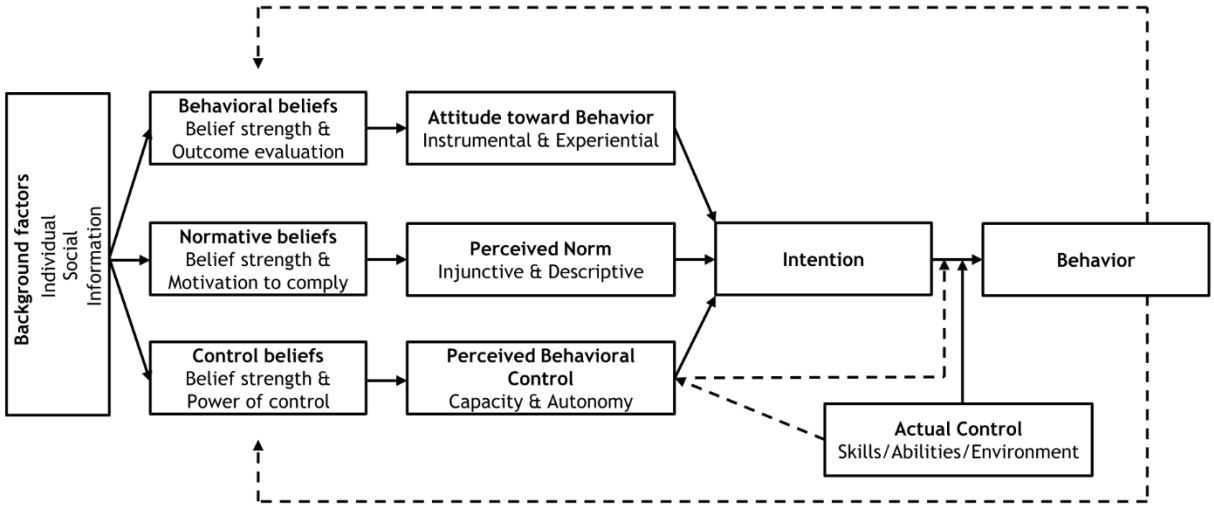
Influencing human behaviour is complicated given that each individual has personal attitudes and beliefs (Scheepers, 2021). Moreover, humans can be sensitive to psychological mechanisms that can influence their behaviour, however, this will differ from one individual to another. Attaining a comprehensive understanding of human behaviour can be achieved through a rigorous examination of the motives and underlying thoughts associated with it. Abraham Maslow stated that a person's needs are related to the motivations one has for exhibiting certain behaviour (King, 2010). He introduced the pyramid of needs in 1943, which highlighted five needs of people that follow one another (Gherman, 2012). For instance, the middle need for social contacts drives people to seek out contacts through which they can satisfy this need. This demonstrates that people's diverse needs play a pivotal role in how individuals behave. It is therefore crucial to identify what people need in order to be able to encourage desired behaviours consciously or unconsciously. Once a need is not fully met, it is nearly impossible to satisfy the subsequent need in the pyramid. Maslow (1971) realised shortly before his death that there was a sixth dimension missing from the pyramid which is of great importance in the human view of the world, namely self-transcendence. This involves looking beyond one's personal life and being aware of one's personal place and influence in the world as part of a larger whole. This insight, according to Maslow, can make one more inclined to engage in efforts to make the world a better place, as one recognises that one's individual contribution has an impact on the world as well.

Considering the KLM Airframe department as a whole, it becomes clear that the department feels the need for greater awareness of sustainability among employees in order to create a working environment where environmentally conscious action is a priority. The ultimate goal for the department is to contribute to achieving KLM-wide sustainability targets. Relating this need to Maslow's pyramid makes it clear that this need is a part of self-transcendence as well. Through the process of raising awareness for sustainability among employees, Airframe intends to demonstrate to employees that each employee can exert influence on an individual level to ultimately achieve a higher aim of more sustainable aviation. Engaging employees and making them aware of their personal contribution to this challenging objective can motivate employees to contribute to sustainable actions in the work environment. Providing knowledge about the necessity and significance of this purpose is important to

effectively engage employees. Herein, Socrates' theory of providing people with knowledge to encourage the right action reappears. Raising awareness of the importance of sustainability by providing knowledge and engaging employees in sustainability is paramount in order to meet the general need to become more sustainable as an organisation. Paying attention to the needs of staff is key to implementing changes in an organisation. Dissatisfied employees and ignorance of the purpose of change within organisations makes it impossible to implement sustainable change due to a lack of motivation. Needs of employees within the firm should be identified to discover what employees need to achieve a level of satisfaction. Here, it is crucial to understand what employees lack to actually contribute to sustainability. If these needs can be met, it will be feasible for an organisation to make lasting, sustainable changes that benefit both the environment and the organisation itself. Conversely, failing to meet these needs will engender an adverse outcome.

Acknowledging that it is critical to identify people's personal beliefs if human behaviour is to be understood and influenced is highlighted in Ajzen and Fishbein's model (McEachan, Taylor, Harrison, Lawton, Gardner & Conner, 2016). This model, as an extended version of the Theory of Planned Behaviour model, is of added value within this research, given the composition of Airframe which consists of a diverse spectrum of individuals with a multitude of viewpoints. The model effectively and comprehensively presents the relevant considerations to be taken into account for a deep understanding of human behaviour and how to influence conduct. It provides comprehensive insights into various facets and is therefore more substantial in its usability, as opposed to the similar ASE-model of de Vries (Bolman & de Vries, 1998), which is deficient by limited integration of elements that can influence behaviour. Taking into consideration the background factors is initially imperative when comprehending the motivations behind individuals' behavioural patterns. The target group that is examined during the research for KLM Airframe consists of a diverse group of people, with the average age being around 50 years old. A background factor that was therefore taken into account during the research is generational differences and thus education, yielding a potential difference in thinking regarding organisational change. Older generations generally have more difficulties with changes within organisations given that they have been carrying out work processes in the same way for a long time. Change may feel like a threat which can lead to resistance. Background factors in turn influence behavioural beliefs, normative beliefs and control beliefs.

Figure 1. The Reasoned Action Approach (RAA) by Ajzen and Fishbein (2010)



First, behavioural beliefs demonstrate whether a person is convinced of the usefulness of a particular behaviour. This directly affects the attitude an individual has towards a subject. In case an employee fails to see the utility of change within an organisation, it is difficult to change their attitude towards the change in question. However, when employees do perceive the usefulness of sustainable action, they will have a positive attitude towards sustainable action. This corresponds to the point Hunecke (2022) made about human behaviour. Once people develop a positive attitude by perceiving the benefits of certain behaviour, the threshold for actually changing current behaviour is reduced. To positively influence employees' attitudes towards sustainable action, it is therefore important to emphasise the benefits of the individual's contribution to sustainability.

Second, normative beliefs are instrumental in an individual's eventual behaviour as well. This involves what is considered to be usual and unusual behaviour. This correlates to subjective norms, which addresses how a person thinks others think about certain types of behaviour (McEachan et al., 2016). When an individual who lacks interest in sustainability contemplates someone leading a fully sustainable lifestyle, they may perceive such a lifestyle as deviating from their own personal beliefs, thus categorising it as aberrant behaviour. As a result, the person in question may think that most people will regard it as absurd behaviour, which reduces the likelihood of the person engaging in the behaviour in the near future.

Finally, control beliefs affect whether or not an individual expresses certain behaviour. This includes whether a person believes it is feasible to exhibit certain behaviour as an individual. The way a person thinks about oneself and one's capabilities is of utmost importance in this respect. However, environmental factors also influence one's behaviour. These include factors that make it possible to exhibit behaviour or, on the contrary, can impede behaviour. Considering the employees within Airframe, it is important to map the extent to which employees see the possibility of changing their behaviour, yet also whether the department itself has available facilities that can stimulate sustainable behaviour. Possible barriers in this may discourage employees from adopting sustainable conduct. Control beliefs subsequently influence perceived behavioural control, where individuals contemplate whether the behaviour is feasible.

3.2 The Nudge Theory

The aforementioned factors contribute to the consideration of whether or not to exhibit certain behaviour. The model shows that exhibiting certain behaviour stems from multiple dimensions. It is therefore of great importance to include these aspects while mapping employee behaviour within Airframe. However, the model can potentially convey a false image that humans are constantly aware of their own behaviour and that every action is considered thoroughly before it is executed. Yet this is not the case, as individuals often exhibit unconscious behaviours related to habit formation, unconscious patterns and beliefs (Bargh, 2017).

Richard Thaler (2008) developed a behavioural psychological motivation technique to subtly steer people in the desired direction, named nudging. The technique is deployed without imposing coercion or prohibitions, often stimulating sustainable actions unconsciously. Based on insights from behavioural sciences, the concept of nudging recognises that people often act irrationally and are influenced by automatic thought processes, while also having certain preferences and needs, which triggers certain behaviour. To encourage specific conduct, nudging ensures that the desired behaviour provides some form of pleasure or convenience (Thaler & Sunstein, 2008). The choice people make unconsciously is subtly stimulated, by making it accessible and convenient. The role of communication in nudging is key, as it delicately informs people in order to encourage and influence the desired behaviour. While nudging offers great potential in sustainability, it is important to ensure ethical and transparent applications. Nudging should be used to increase public well-being, without affecting the freedom of individuals to engage in certain behaviours.

3.3 Corporate Social Responsibility (CSR)

The pursuit of sustainability necessitates the modification of the current behaviour. It is imperative to commence by thoroughly elaborate on the concept. Sustainability is a broad and all-encompassing term and various definitions are given to it within the literature. Moore, Mascarenhas, Bain and Straus (2017) advocate for a consistent definition of the term as too broad and diverse definitions are often given to sustainability with its various dimensions within the literature. The ecological dimension specifically deals with improving daily activities to reduce the impact on the natural environment. The social dimension deals with the human side of sustainability, abolishing social inequality and giving way to a world where everyone has equal rights and opportunities. However, this dimension also examines the opportunities regarding sustainability in the social work environment (Vriend, 2007). Both components are essential to include within the concept of sustainability. Thiele (2019) describes sustainability as the maintenance of capabilities and resources through adaptive change. The concept of change is crucial to consider as climate change requires the implementation of changes to counteract the issue. The scale of changes depends on the level of environmental burden one wants to address. Some argue that the effectiveness of environmental measures depends solely on large-scale approaches. Nevertheless, even small-scale measures at the individual level within the working environment certainly have an impact, even though it is not immediately apparent.

Corporate social responsibility (CSR) is receiving increasing attention in the business world. Research by Statistics Netherlands (2022) found that eight in ten companies within the Netherlands are putting effort into making their business processes environmentally friendly. Yet companies face a number of obstacles that can delay this process. Dependency on other parties can be a barrier as other stakeholders may not recognise the need, leading to stiff negotiations and subsequently delaying the process. Another impediment may include the financial aspect. Sustainability can be a major investment for companies and not perceiving its immediate impact can be a barrier in implementing sustainable initiatives. The impact of sustainability is not directly perceptible, and this could deter people from contributing to reducing the environmental impact. This emphasises the need to have clear communication within companies regarding sustainability and concrete objectives that plainly reflect what a company wants to achieve in the near future.

Corporate sustainability is composed of three pillars, namely the economic, environmental and social pillars (Delubac, 2023). These cornerstones are also known as Environmental Social Goverance (ESG). This research focuses specifically on the environmental pillar, with the ultimate aim being to reduce the environmental impact of business activities. A challenge for companies in terms of sustainability lies in the fact that consumers often doubt the sincerity of companies. According to the SDG Impact (2021), two factors play a decisive role in succeeding in the corporate sustainability strategy. Firstly, sincerity plays a pivotal role in whether or not the sustainability strategy will succeed. It is imperative for a company to be intrinsically motivated to implement sustainability within the organisation and to be genuinely convinced of the value of corporate social responsibility and act accordingly. However, if a company only implements sustainability as competing companies are doing the same, one can question the extent to which the sustainability strategy will be successful. Since the motivation does not come from the core of the company, employees may be sceptical towards the implementation of sustainable initiatives. As a company, it is essential to be committed to the core values and clearly communicate the added value of a change to obtain cooperation from employees. Secondly, transparency can be conducive to optimising operations. Employees are keen to see the company's values, that are communicated and thus considered important, reflected in the daily operations (SDG Impact, 2021). If a company claims to prioritise sustainability, while at the same time no attention is devoted to the matter in the immediate working environment, one may question the company's position. Clear and engaging communication towards staff concerning the rationale behind certain choices and what the potential impact will be could increase the trust employees have in the respective change.

3.4 Internal communication

Social influences are forcing companies to make internal changes to avoid being left behind. To successfully introduce change in organisations, it is important to include employees. Often, change requires a shift in the attitude and mindset of employees, as they have to adjust something in their daily work. Influencing human behaviour turns out to be a challenging process in which various psychological and socio-cultural factors should be considered. Within organisations, communication towards employees during changes is extremely vital to get cooperation from employees. The communication must be designed in an efficient manner if it is to be effective and achieve the desired outcome. Several factors that could potentially influence how people respond to change must be taken into account. Environmental factors, among others, play a major role in this regard. According to MacLeod (2014), people in crisis situations are more likely to adjust their behaviour the moment communication on the subject is empathetic in nature and originates from a reliable source. Climate change can be considered a global crisis situation as all of humanity will be affected. These consequences are becoming increasingly visible and tangible, leading to the recognition that lifestyle adaptation is imperative among individuals. Companies are becoming progressively more cognizant of the emissions they generate, thereby demonstrating a heightened level of awareness towards climate change. An effective approach and redesign of businesses is required to reduce the environmental impact.

Engaging employees in organisational change can lead to employees experiencing a sense of responsibility and motivation to be committed to the change. Well-conceived communication is key in influencing human behaviour. Reynold and Earley (2010) confirmed this, stating: *"When faced with a new threat, people want a consistent and simple recommendation to follow"*. Change in organisations often leads to resistance. According to Bennebroek Gravenhorst (2010), resistance among employees to change arises due to a lack of knowledge about the change and through their attitude and feeling towards the change beforehand. Providing sufficient knowledge through communication about change can result in the development of a positive attitude and faster acceptance among employees for the change in question. Homan (2012) argues that resistance is a misinterpreted concept as a result of its negative connotation. The author contends that conflict following organisational change is an integral part of daily interactions within companies. Critical reflection emanating from employees on change plans is crucial for a company to ascertain what employees might be lacking and need in the work environment. Thus from this perspective it can lead to improved substantiation of change plans from the organisation. When changes occur in organisations, people respond differently, stemming from a variety of personalities and underlying motivations (Scheepers, 2021). Responding to human behaviour is difficult and can be challenging to achieve through communication. According to Stolzenberg and Heberle (2022), people who fear the impact of change at the individual level and have reservations about the impact of change are particularly difficult to reach. This emphasises again Socrates' philosophy on the importance of providing people with knowledge to guide desired behaviour. Ignorance concerning the positive impact of change can lead people to experience feelings of resistance (Jalonen, 2023). Communicating business plans effectively ensures that employees feel engaged in the plans and gain an understanding of the rationale for change. This can increase engagement and lead people to perceive a lower level of hierarchical structure in a company, making change feel, to a decreasing extent, as something imposed.

To implement successful change in a company, an organisation must pay sufficient attention to the needs of employees (Stolzenberg and Heberle, 2022). According to the authors, it is essential to take employees' emotional side of change seriously, due to the fact that employees can react very differently to changes within organisations. The authors emphasise the importance of including and involving employees in change in order to prepare them for new ways of working via this route. The moment employees are not informed about organisational changes, the change in question can feel like an obligation. By not involving employees in the whole process of change, they may experience a

hierarchical organisational structure as a result, which can lead to resistance. Communicating business plans with employees can increase the sense of commitment among employees, allowing them to develop an understanding of the change in question and adapt more quickly. An important point in this respect is that the company itself is also receptive to critical reflection from employees on the change and can properly justify why a particular approach has been chosen.

Reflecting critically on Ajzen and Fishbein's (2010) model, it can be noted that the authors do not explicitly appoint the emotional side mentioned by Stolzenberg and Heberle (2022) as a factor that potentially influences the ultimate behaviour. The emotional side can therefore be seen as a missing aspect in the model and can thus serve as an addition to the current model. After all, human behaviour is partly influenced by emotions evoked that can be different in nature specifically looking at the work environment given the wide variety of people. It is exceedingly important to be conscious of the effect a certain change in an organisation can have on people emotionally. A change can result in an emotional reaction which then leads to the display of certain behaviour. It is crucial to ensure that the respective change and desired behaviour that an organisation wants to achieve evokes positive emotions from employees by making the change as accessible as possible to employees. This emphasises the need for positive communication on sustainability within the work environment, as it increases the likelihood of cooperation in the desired behaviour.

According to Elving (2005), the purpose of internal communication in organisations is that it can reduce or prevent feelings of resistance among employees. Transparency in operations and planning can lead to employees feeling more connected to the company. It can also result in employees feeling valued when communication is concerned with their views on certain issues in the organisation. Foy (1994) emphasises that communication plays an important role in creating feelings of commitment to the organisation and its employees. When employees possess an understanding of the current state of affairs within the organisation, they are more likely to feel connected to the company and motivated to contribute to a healthy organisation. Internal communication that matches employees' needs is crucial in conveying the overall message. Stolzenberg and Heberle (2022) argue that the first purpose of communication is to inform employees of recent information on the progress of change, thus creating clarity on the course of action among employees. The second aim of communication is to convince employees, who are not yet persuaded, of the significance of the change. This form of communication emphasises the personal aspect. Thus, the overarching objective of internal communication is to provide employees with pertinent information regarding ongoing issues within the company.

The influence of communication in a company's success cannot be underestimated since a well-established communication framework fosters transparency, cultivates trust and enhances overall employee engagement. According to Harshman and Harshman (1999), appropriate communication affects the extent to which a company performs properly. In addition, it increases the likelihood that changes can be implemented successfully. Previous research (Schweiger & De Nisi, 1991; Daly, Teague & Kitchen, 2003) has found that when managers are transparent in the provision of information that it contributes positively to employee productivity and cooperation in the face of change. This once again emphasises the importance of employee engagement. Attention to the right kind of communication to stimulate motivation for sustainability among employees is essential to implement sustainable change within the work environment.

William Edwards Deming (1900-1993) developed the quality cycle in the 1950s as a tool to take quality within organisations to a higher level. In this method, employees within organisations are involved in raising the quality of business procedures by collectively searching for solutions to issues. Using four activities: plan, do, check and act, the quality of organisational processes can be increased (Sokovic, Pavletic & Kern Pipan, 2010). One by one, these activities are tallied to optimise processes. It aligns with the theory of influencing human behaviour by paying attention to employees' needs (Stolzenberg & Heberle, 2022). When employees have the right to speak and express their opinions in

finding solutions to organisational issues, they feel heard and their commitment to the organisation will increase. It can be seen as a form of behavioural influence (Thaler & Sunstein, 2008). By increasing employee commitment to challenges in organisations, employees develop a positive attitude towards the company which makes them more likely to modify their behaviour. The Airframe department can apply this method by identifying where improvement is needed when it comes to sustainability. Clear and transparent communication about the entire course of events within the company is crucial in this respect, in order for employees to be aware of developments and challenges the company is facing. It is important to create an atmosphere where employees feel the need to share their dissatisfaction as they know that in response to their dissatisfaction, action will be taken to find a solution collaboratively. The moment an employee raises concerns as a certain process in the working environment has a major environmental impact, it is vital to identify solutions as a team and actually implement these solutions in order to continue with the daily operations. By constantly improving the business processes regarding sustainability, the quality within the organisation will be increased. Transparent internal communication on company processes is key in successfully increasing the quality of business activities (Demmers, 2014).

Figure 2. Quality Cycle of William Edwards Deming

3.5 The barrier separating awareness from action

The previous sections have demonstrated that sufficient attention must be paid to the complexity of human behaviour and the implementation of internal communication for a firm to raise awareness for sustainability among employees. Merely deploying communication tools without valid rationale will result in limited results.

Human awareness comes in different forms and the impact that awareness has depends on several factors. On the one hand, one may be aware of the need for sustainability, leading a person to adjust their entire lifestyle to reduce their carbon footprint. On the other hand, another person may recognise the urgency of sustainability as well, however, may not act on it in daily life due to various reasons. For instance, it appears that differences can be observed in the way individuals react in crisis situations affecting society. This highlights the immediacy of taking into account the different types of people. The disparity in sustainable thinking and sustainable acting is not confined to the working environment. It reflects society, where there is often a discernible gap in awareness for sustainability

and actual environmentally conscious action. Moreover, a lack of knowledge when it comes to the direct impact of climate change may be a barrier to effectively adopting a sustainable attitude (Liu, 2021). According to Statistics Netherlands (Kloosterman, Akkermans, Reep, Molnár-in 't Veld & van Beuningen, 2021), an explanation exists for the disparity in people's awareness and actual actions when it comes to climate change. They argue that due to the fact that people attach excessive value to convenience and comfort that they struggle to actually apply sustainability in practice. The authors argue that the ability to act sustainably at the individual level depends on both the motivation and the resources available to put sustainable thinking into practice. In previous research (Van der Grient, Kamphuis & de Vos, 2019), it was found that some factors could be identified with significant influence to make the right climate change choices. First, it revealed that confidence in individual influence on climate change is essential in whether people act sustainably or otherwise. If individuals are convinced that their own impact on the environment is negligible, it may reduce their willingness to act sustainably. However, when they recognise that their influence is actually useful, their propensity to act sustainably will be increased. In addition, the feeling of responsibility also plays a role. Once people feel personally accountable for CO_2 emissions, they will display more environmentally aware behaviour in their daily lives. This further demonstrates that human behaviour and underlying factors play a major pivotal role in whether or not people participate in sustainable action.

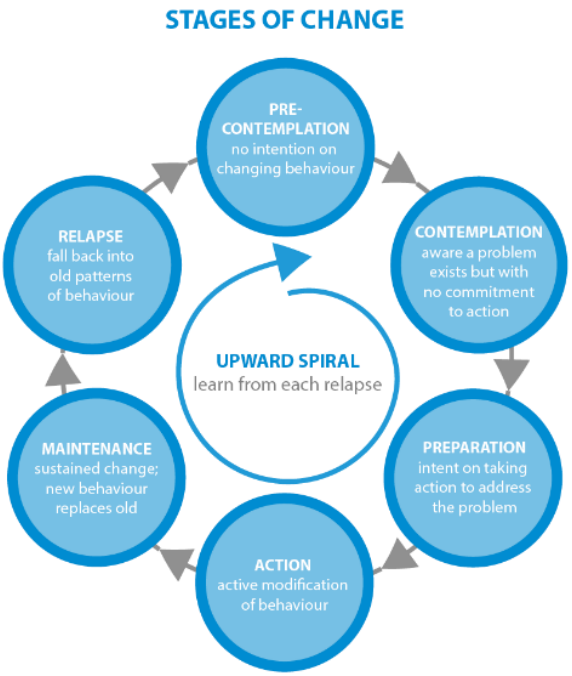
To narrow the gap between awareness and sustainable action, these human behavioural dynamics must be taken into account. The ‘psychological distance’ to environmental impact must be reduced to guide human behaviour (Keller, Marsh, Richardson & Ball, 2022). To make people feel the urgency to become more sustainable, it is essential to demonstrate that climate change is presently occurring and not only an issue far in the future. By presenting sustainable behaviour as the social norm and putting forward positive role models, collective awareness can be strengthened and sustainable choices can become more accepted and valued. This can potentially induce changes among employees in organisations, which will increase the awareness for sustainability.

3.6 Fostering sustainable conduct

To induce effective behavioural change, humans go through several stages. Prochaska and DiClemente (1982) identified these stages in developing the Stages of Change Model, which demonstrates how human behaviour can be modified (Norcross, Prochaska & Krebs, 2011). The model provides a structured overview of the different stages one goes through when changing behaviour and takes into consideration that change may not always go smoothly. This is also the case in the situation within Airframe, as past experience has shown that employees fell back into old patterns a while after a sustainable implementation had been implemented. It is therefore highly recommended to thoroughly analyse the different steps within this model to successfully change behaviour.

In the pre-contemplation stage, there is no intention to change behaviour. The second stage is contemplation, in which there is awareness of the existence of an issue, yet there is no commitment to act on it. This correlates with sustainability, as numerous individuals acknowledge its significance but subsequently struggle to translate that awareness into action. Often because they believe their personal contribution will not result in change or due to the fact they assign excessive importance to convenience and comfort as Kloosterman et al. (2021) argued. When one does show commitment, one enters the preparation stage where a plan is actually made to take action and address the issue. In the next stage, the action stage, actual behavioural change takes place as people feel the need to modify their behaviour. Providing sufficient facilities to people in order to contribute to environmentally friendly operations is significant in this regard. This combined with the provision of targeted information concerning sustainability can exert influence on the conscious or unconscious behaviour of individuals. Encouraging sustainable behaviour through this approach can be regarded as a form of nudging.

Figure 3. Stages of Change Model by Prochaska and DiClemente (1982)



The maintenance stage essentially performs the role of preventing the last stage. This final stage, known as the relapse stage, is ought to be avoided. Frequently, people relapse into their old behaviour after a period of exhibiting the desired behaviour. By thoroughly mapping employees' behaviour and understanding the various behaviour patterns, this stage can be prevented (Braun, 2021). Returning to old patterns can have various causes, both from the internal and external environment. Internal influences including personal motivations, beliefs and needs play a role in maintaining behavioural changes. External environmental factors, like social pressure or organisational structures, can likewise have a negative impact on sustaining new behaviour. By conducting a thorough analysis of behavioural patterns and comprehending the complex factors involved in behavioural change, appropriate interventions can be designed. Creating a supportive environment, addressing limiting beliefs and providing ongoing support and motivation are some strategies that can contribute to preventing the relapse stage.

In addition, fostering awareness and motivating employees holds paramount importance, as instigating behavioural change in this manner evokes a sense of willingness rather than obligation, stemming from the conviction that it is the morally sound choice to make. In the preceding phases, sufficient emphasis should have been placed on the beneficial impact of the intended behaviour. By illustrating the potential benefits of the behaviour and highlighting its positive aspects, employees will be more likely to modify their behaviour (Hunecke, 2022). It is essential that they are aware that continuing their current behaviour will eventually result in adverse consequences. In contrast, adjusting their behaviour will bring positive side effects in both the short term and the long term. To achieve long-term employee contribution, it is crucial to deploy communication tools that foster intrinsic motivation.

3.7 Translating literary knowledge into empirical field research

The literature review has revealed essential elements that are vital to integrate into the field research phase. It provides valuable knowledge and in-depth understanding of key concepts from the research and highlights key areas of focus. Gaining deep insight into human behaviour and the rationale behind individual attitudes and behaviours proves to be crucial to successfully implementing change.

In the following phase it is useful to remember that the way individuals behave or adopt a certain attitude is based on several factors. Ajzen and Fishbein (2010) demonstrate that these background factors ultimately determine whether someone has the intention to exhibit certain behaviour or not. In the field research, it is therefore important to first ask questions on how a person thinks about sustainability in general, in order to determine how a person's attitude towards this phenomenon may be influenced by specific factors. By gaining a clear understanding of human behaviour and the factors behind it, internal communications can better address what employees need, giving the message a more effective reach and helping to maintain sustainable behaviour for a long time. In the previous sections, it was found that the emotional aspect underlying behaviour is neglected in this model. Therefore, to complement the model, the field research will focus on this aspect as well, as according to Stolzenberg and Heberle (2022) this factor is important for successful change in an organisation. One way this can be done is by involving employees in business change, which was extensively researched by William Edwards Deming in the 1950s.

The model of William Edwards Deming (1900-1993) can serve as a tool to link the quality cycle to sustainability within KLM in the next phase. In his method, for increasing the quality of the organisation, the statistician emphasised the importance of including employees in this process. One crucial aspect to include in the field research is that sustainability should not feel like something imposed. By conducting interviews and participating in various departments, it is possible to examine together with employees how to improve the quality and what employees need in order to become more sustainable. In this way, sustainability can become part of the quality one produces. The field research phase can then reveal what is lacking in terms of sustainability and sustainable communication within the department. By simply asking what they are missing in the department to contribute to sustainability, employees can come up with solutions and ideas that can then improve the quality. This also demonstrates a company's efforts to be transparent by being open to critical feedback from employees, which, according to Elving (2005), can reduce feelings of resistance during change. Another important question is to ask which communication tools they prefer and which are ineffective in conveying sustainability. By critically analysing employees' responses using ATLAS.ti, a communication plan is drawn up by me as an intern, after which steps will then be taken by fellow colleagues to put it into practice. In this way, employees are included in the process of change. This is also in line with the research by Albrecht, Green & Marty (2021) which showed that employee engagement can make a positive contribution to the connectedness that employees experience with the company. Including employees in process improvement conveys a perception that employees are heard, which increases cooperation in change.

The ultimate aim of the research is to raise awareness of sustainability among Airframe employees, through the deployment of appropriate internal communication strategies, resulting in employees developing environmentally conscious attitudes. To achieve this awareness and behaviour, people will pass through several stages, as described by Prochaska and DiClemente (1982) in their Stages of Change model. The contemplation stage can be seen as the cognition stage, as it is during this stage that people become aware of whether they are sustainably oriented or not. The model thus assumes that people go through each stage consciously in order to eventually modify their behaviour. Yet in reality, individuals are also driven by unconscious factors that can influence behaviour (Thaler, 2008; Bargh, 2017). Richard Thaler (2008) demonstrated this in his behavioural psychological motivation technique called nudging. This technique can therefore serve as a complement to Prochaska and DiClemente's (1982) model by showing that, in addition to conscious choices, people can also unconsciously make choices for sustainable behaviour by being subconsciously steered in the desired direction by the presence of certain resources. In this case, one does not contemplate the choice made as the relevant decision can be taken for granted. In the field research phase, it is therefore interesting to combine cognition with nudging, as this makes it easier for individuals to think and behave in a certain

way, thus avoiding falling into the relapse stage. This combination allows employees to engage in environmentally friendly behaviour without giving it too much thought (contemplation). Important for the field research is then to delve into the overall atmosphere surrounding sustainability. The moment employees have a positive view on sustainability, the ultimate implementation of the internal sustainability communication is more likely to achieve the desired effect. In contrast, the moment there is no environmentally friendly atmosphere, it will be even more difficult to achieve the desired awareness and subsequently the sustainable behaviour. It is crucial to delve deeply into the (underlying) aspects employees need in communication around sustainability and sustainable resources in general during the field research. In this way, it is possible to identify which internal communication strategies can consciously (cognition) and unconsciously (nudging) contribute to employees exhibiting the desired behaviour.

All in all, the data from the literature provides a fundamental basis for entering the next phase of the study, the field research.

3.8 Conceptual model

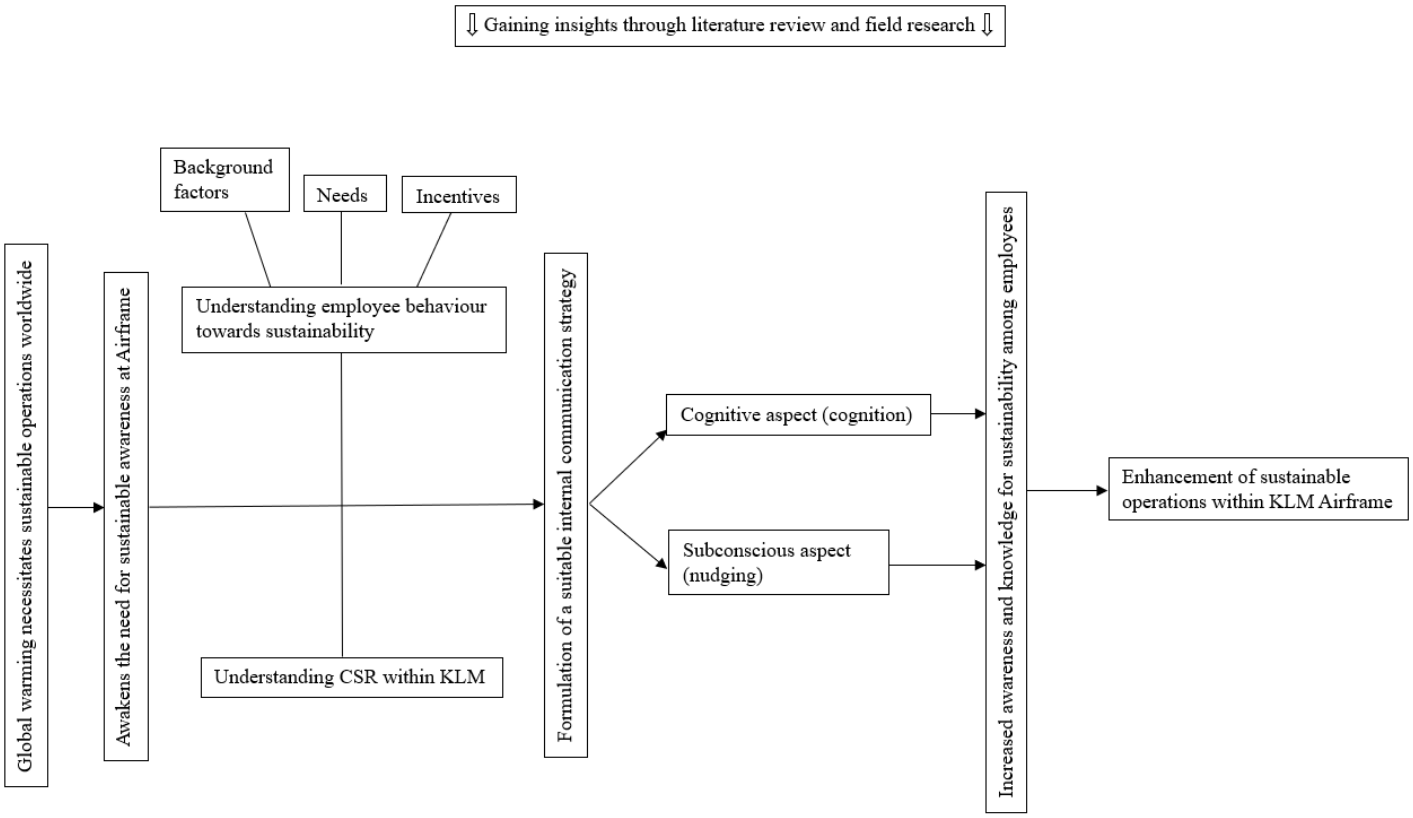
The figure below shows the conceptual framework of the study. The framework was created by including the various societal and business factors that influence each other while also expressing the expectation of the final outcome of the research.

Nowadays, global warming necessitates sustainable activities worldwide and calls for sustainable implementations within different sectors. KLM Royal Dutch Airlines is aware of its impact on the environment and therefore the various departments within the airline are in the process of becoming more sustainable. In the Airframe department specifically, previous research has shown that creating awareness among employees is necessary since this awareness is lacking in many cases. To create this awareness, knowledge of employee behaviour is of great importance, as it results in more understanding regarding the background factors, needs and incentives, underlying certain attitudes towards sustainability. Simultaneously, it is important to identify the extent to which KLM is concerned with sustainability nowadays and how this is manifested in the daily work activities.

Gaining an understanding of employee behaviour combined with an understanding of the company's corporate social responsibility leads to the creation of an appropriate internal communication strategy that suits the employees and the working environment. The data from the literature as well as the data from the field research will serve as input for developing the internal communication strategy, which will then be incorporated into a comprehensive communication plan. The internal communication strategy to raise awareness for sustainability will connect the internal communication and the concept of nudging. On the one hand, it takes into account the conscious decisions employees make when it comes to whether or not to read the content of the communication tools (the cognitive aspect). It also considers the unconscious, in which the attention of employees can be caught subconsciously by adjusting the content of a communication tool to employees' needs. This may subtly prompt employees to read the respective information.

By capitalising on both the cognition of employees and the unconscious, awareness of sustainability and knowledge related to it can be increased, possibly resulting in employees increasingly recognising the importance of adopting environmentally conscious behaviour. This may ultimately lead to an improvement in the sustainable operations within KLM Airframe.

Figure 4. Conceptual model



Chapter 4. Research methodology

4.1 Research design

The scope of the research concerns the E&M department Airframe located at Schiphol-East. For the research, it is essential to be closely engaged with the department to achieve the right results. Prior to the research, therefore, an outline consisting of different phases was created with the aim of gaining a detailed understanding of the department and its running processes.

4.1.1 Internal analysis

Phase 1 consists of an internal analysis, which serves as a reconnaissance phase, in which in-depth insight is gained into the structure of Airframe and its subdivisions, sustainability awareness and internal communication. This phase comprises two parts.

First, interviews are held with Continuous Improvement Leads (CILs) and Culture Leads (CLs) from the various subdivisions within Airframe. The CILs ensure the proper management of daily processes and keep procedures running optimally. The Culture Leads deal with people's behaviour and ensure that employees enjoy an optimal work environment. Interviews with CILs and CLs provided insight into the structure within Airframe and its various divisions. Based on a number of topics, information is obtained on the daily operations within the divisions in general, sustainable awareness and actions in the working environment and the current communication tools used for internal communication. In addition, the CILs and CLs suggested potential employees who could be approached for the field research that will take place in the next phase.

The second part of the internal analysis consists of broad observations where visits are conducted to the different subdivisions to form an overall picture of Airframe and its different units. On completion of the internal analysis, a clear understanding of the operational processes within the department of E&M is obtained.

4.1.2 Qualitative research

In phase 2, qualitative research is conducted using various research techniques to extract the right data. Many studies related to human behaviour gather and analyse data through quantitative research. Examples include the studies conducted by Prochaska and DiClemente (1982), as well as those by Ajzen and Fishbein (2010). These studies seek to use statistical data to understand the causes and mechanisms behind specific behaviour within various populations and to identify which factors influence the development of certain attitudes. In this study, a deliberate decision was made to favour qualitative research over quantitative research, despite numerous statistical analyses of similar studies. The primary reason for this lies in the need for an in-depth understanding of employees' behaviour with regard to sustainability. Previous research (Koning, 2022) has indicated the necessity to raise awareness of sustainability among employees and qualitative research provides the opportunity to delve into people's emotions and feelings, which play a pivotal role in comprehending the behaviour towards corporate changes related to sustainability. Moreover, the aim of the research is to establish the internal communication of sustainability at specifically Airframe and therefore it is vital to analyse the context up close which is enabled by qualitative research. In contrast, quantitative research often involves remote observation of the study area, which can be useful in extensive surveys. However, it is less applicable in this study.

Hence, this phase delves deeper into the central concepts of the research, namely psychology, communication and sustainability and explores the underlying connections between these concepts in the working environment. The aim is to gain more knowledge in human behaviour and the factors underlying this conduct. Due to the heightened level of interpersonal contact in qualitative research compared to quantitative research, it is important to be aware of people's vulnerability, which might

hinder them from expressing their honest opinion towards sustainability in the organisation. It is therefore crucial to gain employees' trust by making it as clear as possible in this phase what the exact purpose is of the research and how the acquired data will be processed. By continuously interlinking the literature review, participatory observations and semi-structured interviews, relevant results will emerge.

The first technique used to obtain data is the literature review which uses academic sources to gain insight into human behaviour, changes within organisations and the central concepts of the research. The knowledge gained from the literature can be applied when entering the research field. It provides a better understanding of organisational processes and human behaviour, which is important throughout the analysis of the context. The literature review will contribute to answering the first research question that addresses psychological strategies necessary to guide sustainable behaviour. It provides a broad perspective of relevant scientific knowledge that ultimately results in a better understanding of human behaviour in conjunction with organisational change and ways in which internal communication can contribute positively to this process.

In addition, as part of the field research, participatory observations and semi-structured interviews will be conducted. Participatory observations are carried out in which the researcher will visit different subdivisions within Airframe to gain a thorough understanding of the issues employees face in their work on a daily basis. It gives an insight into the environmentally conscious behaviour of employees in the workplace and can reveal employees' attitudes towards sustainability by asking questions and observing executive tasks. It demonstrates the degree to which employees are regularly confronted with sustainability and the various approaches through which they decide whether or not to actively engage in sustainable behaviour. Participatory observations were chosen as it allows immersion in the context, making it possible to see sustainability in the department from various perspectives. The research area can be better analysed and provides the opportunity to ask employees questions for the benefit of the study.

Finally, the semi-structured interviews will provide insights into the underlying behaviour of employees observed during both the broad and participatory observations. In preparation for the study, an interview guide has been prepared, which includes several essential topics to be discussed to acquire the necessary data. By engaging with the research target group, the specific needs of employees when it comes to internal communication regarding sustainability can be explored more in-depth and the underlying factors that underlie certain behaviour exhibited will emerge. The interviews will mainly take place one-one-one with possibly some exceptions, to create a familiar atmosphere where they dare to openly and honestly express their opinions about the presence of sustainability within the department and their role in it. In this way, it is possible to go deeper into the individual considerations underlying a particular opinion or attitude. Focus groups have therefore been excluded, as while this can generate interesting discussions, it can go less in-depth into the personal considerations to exhibit the desired, sustainable behaviour. Each interview will be accurately transcribed to obtain an exact representation of the respondents' statements to ensure a complete understanding of their words. The second, third and fourth research questions specifically address employees' attitudes towards sustainability and the current means of communication within the department and their needs in this regard and can be answered by the data from the participatory observations and the semi-structured interviews.

By combining the insights derived from the various research methodologies, discernible conclusions can be drawn that will contribute to the development of effective internal communication strategies regarding sustainability within Airframe. Collectively, the different research techniques will ensure an appropriate answer to the main question.

4.2 Constructivist grounded theory

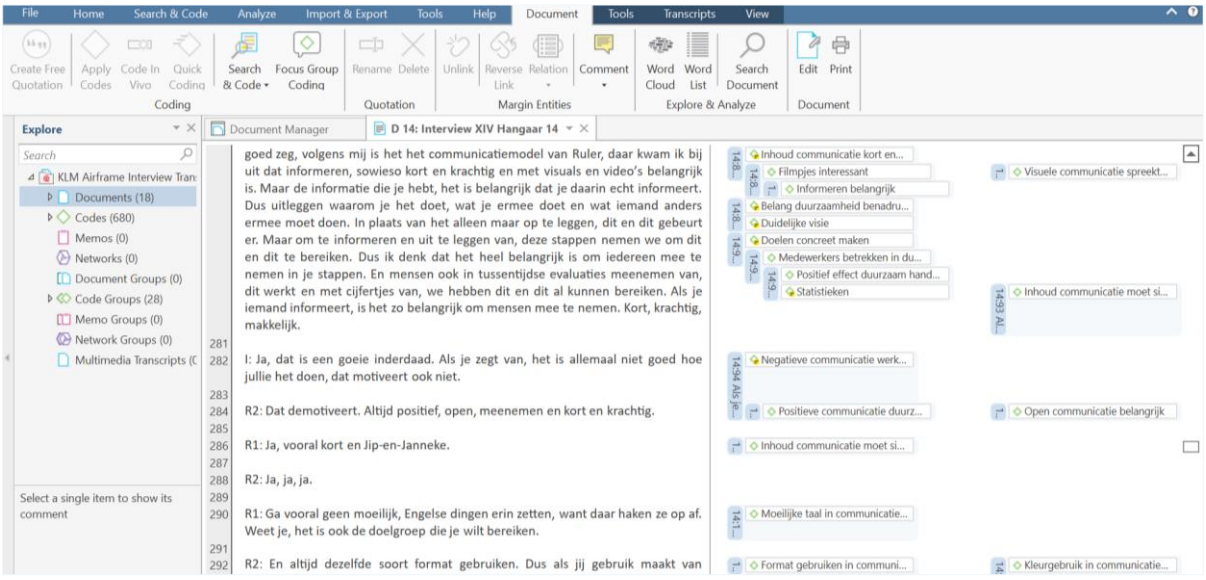
To analyse the data, the method constructivist grounded theory was used, which can be seen as an abductive analysis of data derived from the study. This method of analysis is valuable for the study by

identifying key findings from the context, while remaining open to new insights. This is crucial in thoroughly comprehending the research field. It is relevant in this study since, on the one hand, the research will focus on uncovering pre-existing patterns, with the aim of understanding why sustainability is not currently a priority. On the other hand, the analysis will also aim to discover new perspectives that have the potential to contribute to raising sustainability awareness within Airframe.

The data was collected by conducting interactive interviews with participants during the study. The interpretation of the data was carried out by using the software programme ATLAS.ti. In order to attain the desired outcomes, this process necessitated the implementation of several steps.

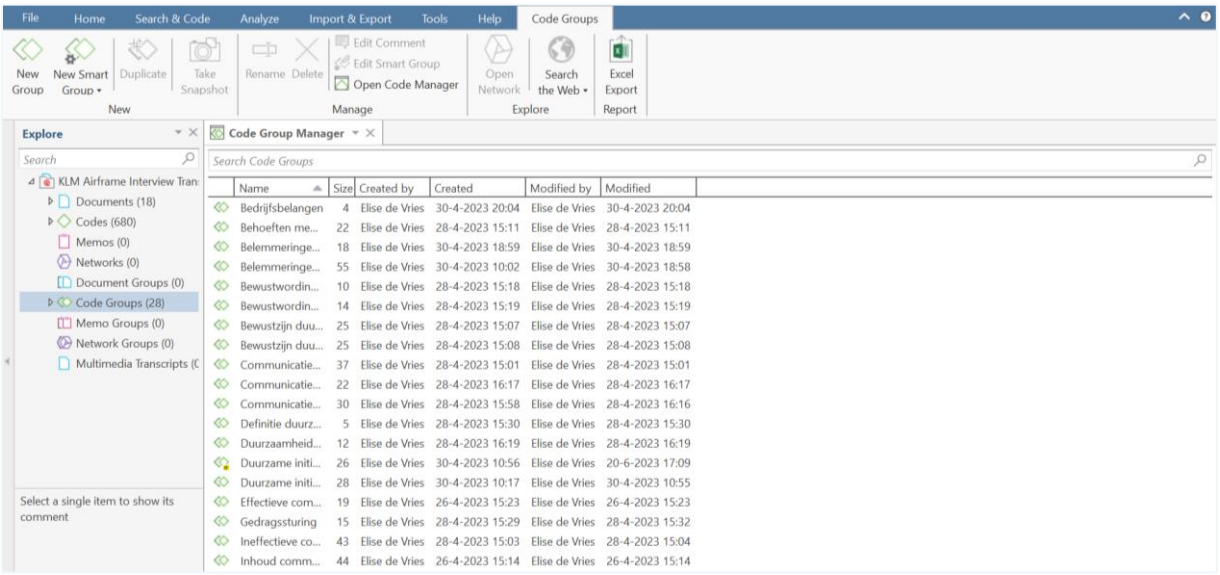
Once verbatim and comprehensive transcripts were made of the semi-structured interviews, the files were inserted into the programme. Subsequently, each interview was analysed in detail through open coding, in which an abundance of codes emerged that added value to the study. In total, more than 700 different codes emerged during the open coding. After that, these codes were thoroughly examined, after which irrelevant codes were removed and synonyms were merged into one code. By merging a number of codes, a total of 680 different codes remained. The figure below illustrates part of the open coding of interview XIV and demonstrates that several codes were added to the text, highlighting certain aspects that may be relevant for the study.

Figure 5. Open coding ATLAS.ti



Subsequently, axial coding took place, in which the codes were divided into overarching code groups. Based on this, the main results from the investigation emerged. In total, the 680 different codes were divided into 28 different code groups, which highlighted the key elements from the research. The figure on the next page illustrates some of these code groups.

Figure 6. Axial coding ATLAS.ti



The results of the multiple interviews were continuously juxtaposed to ascertain whether a specific pattern could be identified that said something about suitable internal communication strategies that would suit employees and their needs in order to make sustainability a more significant part within the subdivisions of the Airframe department.

By using constructivist grounded theory, an in-depth understanding of the state of environmental behaviour among employees within the various subdivisions can be obtained. An insight into the social phenomenon in the working environment is generated, leading to the development of various theories that demonstrate how sustainable behaviour can be encouraged through the proper implementation of internal communication strategies. The new insights arising from the thorough analysis of the collected data can then also be related to the data derived from the theoretical framework. Based on these results, a conclusion can be carefully drawn and the research questions will be answered.

Chapter 5. Outcome analysis

The following sections address the research questions that provide input for being able to answer the main research question. The data was obtained using both primary and secondary data and provides transparency on the current situation towards sustainability awareness among employees within KLM Airframe. During the analysis of the data, constructivist grounded theory brought to the fore new theories that are considered vital to incorporate into the internal communication to be able to then effectively raise awareness for sustainability and drive the ultimate desired behaviour.

5.1 Perceptual divergence on the significance of sustainability

Globally, there are numerous perceptions when it comes to the need for sustainability. The situation within Airframe can be seen as a reflection of society, as opinions on this phenomenon vary widely. However, there are also aspects where employees generally agree. Almost all respondents from the study recognise the necessity of focusing on sustainability in the current society given the increasing effects of global warming. Many employees indicate that it would be beneficial to implement sustainability more widely within the working environment, due to the lack of effective initiatives. It can be argued that Airframe is at a crossroads, where it is crucial that the department moves forward in the right direction by deploying suitable initiatives to prioritise sustainability. A respondent from Hangar 14 stressed the need to clarify the exact goal of sustainability within KLM. He stated: *"Somehow we don't quite have the focus of, what is our goal? Our goal is to become sustainable, but then we actually have to say to each other: we shouldn't want this anymore".* This therefore involves making the right decisions that benefit the environment. Yet the way sustainability is often approached in society and the implementation of measures to combat climate change occasionally arouses resistance. Besides, some employees find it difficult to establish the link between aviation and sustainability. The various perceptions and attitudes of employees towards sustainability in the working environment will be briefly explained below.

5.1.1 Awareness of the need for change

The first challenge to make sustainability more of a priority within the department lies in effectively disseminating internal communication that emphasises the relevance of applying sustainability in the working environment, thereby fostering the cultivation of desirable behaviour. During the conducted field research, awareness of sustainability was identified both in general and in the working environment. The results indicate that nearly all employees demonstrate a keen awareness of the need for change, considering the environmentally harmful practices in today's society. When asked whether respondents were aware of their individual actions on the environment in their daily lives, every respondent indicated being aware of this. The severity of climate change makes employees realise that change is imperative and that active measures must be taken to counteract it. Awareness of the need provides a solid basis for increasing employees' commitment to sustainable practices.

In general, employees are conscious of the impact of their daily work on the environment. A PCM employee therefore felt that greater sustainability awareness among employees could result in a less environmentally damaging environment. He said: *"There are so many things happening around an aircraft that burden or can burden the environment. So the more aware you are, the more you can take it into account"*. In addition, during the brief conversations throughout the participatory observations, it became apparent that employees are aware of the fact that sustainability does not constitute a fundamental role within the working environment. Moreover, the data analysis conducted using ATLAS.ti serve as a confirmation of the latter. A recurring pattern emerged regarding the amount of communication in the workplace towards sustainability, the attitudes of Airframe employees on sustainability and actually taking concrete action to combat climate change. This pattern clearly revealed

that while employees are aware that day-to-day operations have an enormous environmental impact, the lack of communication and motivation regarding environmental awareness is an impediment to genuine change, resulting in limited steps to implement sustainable change. A PCM employee emphasised this, stating: *"There is not much happening here regarding sustainability, so then there is limited communication on the subject"*. In addition, a PSFc employee said the following about this: *"Indeed, I think that if it [sustainability] were communicated more widely within KLM, saying, 'hey, think about this, think about that' or just in a rewarding way, you would be much more motivated to actively participate in this"*. Moreover, during the participant observation at LMS, as a department within Airframe that has been at the forefront of sustainability, it also became clear that since this department pays a lot of attention to this matter in the communication towards employees and through the implementation of sustainable initiatives, employees become aware of their personal contribution and are then consequently motivated to make their contribution, resulting in successful change. The pattern that emerged in the fieldwork thus shows, on the one hand, that when there is limited communication and focus on sustainability, this leads to low engagement and motivation in sustainability. While on the other hand, active involvement of employees in sustainable practices by increasing the communication on this matter and implementing sustainable initiatives can result in visible change that reduces environmental emissions. This confirmed the importance of further strengthening awareness through targeted communication and encouraging employees to take a proactive stance to minimise the impact.

Despite awareness of the need for change, the impact of sustainability in employees' daily work appears to be minimal. Sustainability is not considered something that is actively pursued in the workplace. For instance, whilst observing the canteen of Hangar 14, I noticed that all the lights were on, even though the sunlight shining in through the windows provided enough illumination. The employees, who were taking a break in the canteen, did not seem to be aware that the lights were still on, although it was unnecessary. There was no one taking the initiative to save energy and turn off the lights. It can be argued that there is a kind of herd behaviour within Airframe. Since no one takes the lead in making the working environment more sustainable, employees are not encouraged to actively participate in sustainability. A respondent from the MEF unit thus states: *"And that's just the way things are done here, so we just participate in that"*. The herding behaviour was evident as well during the participatory observation in the hangars, where ground engineers hardly used mugs instead of plastic cups. Since few if any take the lead in using mugs, plastic cups are still used. In contrast, in the observation at LMS, everyone was using mugs. Afterwards, plastic cups were found to have been abolished by the plant leader, forcing people to purchase mugs, which ultimately reduced plastic consumption significantly while also demonstrating the importance of appointing someone committed to a more sustainable work environment. Still, LMS really does appear to be the forerunner in sustainability compared to the other departments and other units are lagging behind.

A clear gap can be seen in awareness of the need for sustainability and actual participation to combat climate change. According to a respondent from PSFc, sustainability implementation is often difficult given the fact that employees have been doing their work in the same way for a long period of time. She said: *"I do try to implement it very much within my team (...), but outside the team I then have to deal with people who have been doing it a certain way for a longer time and it takes a bit longer"* [for changes to be implemented]. This also reflects the background factors Ajzen and Fishbein (2010) refer to, given that these factors are partly responsible for the eventual behaviour people display. The more accustomed to the daily routine, due to employees having been with the company for a long time, the more resistant they find it to adjust their work in a way that reduces the impact on the environment.

5.1.2 The demoralising effect of obligation

In addition, some employees within Airframe often feel that sustainability is imposed from contemporary society. This creates a sense of obligation, which can be counterproductive to the desired,

sustainable behaviour. The data analysis clearly identified a correlation between past positive or negative associations with sustainability and the way employees respond to potential sustainability initiatives within Airframe. Within the working environment, a number of employees have a sceptical view towards the major measures KLM is taking to become more sustainable, as on the one hand this demonstrates to the outside world that the company is paying increasing attention to sustainability, while in the working environment there appears to be a limited focus on sustainability. As a result, some employees have the impression that the airline is sustainable only out of social obligation, rather than from an intrinsic motivation to contribute to a better environment as a company.

Various restrictions are imposed on the airline from the authorities and, according to a respondent from Hangar 14, this merely demotivates: *"The government actually forces us to do more, in fact, it says: whatever you do, it's not enough"*. It is evident here that when change becomes a matter of obligation, it fails to motivate. A translation can be made at this point to specifically the working environment within Airframe. The moment sustainability becomes an obligation, it creates resistance, as employees feel their freedom of choice is being taken away from them. This emphasises the value of making changes driven by intrinsic motivation.

The lack of internal communication on the measures that can be taken in their own workplace contributes to some employees being doubtful on the rationale for sustainability. Consequently, it also tends to feel more like an obligation by not including employees in these plans. This emphasises the importance of clearly communicating the company's interests and vision to staff to get cooperation on changes (Stolzenberg and Heberle, 2022). Providing clear, internal communication sends a message to employees that sustainability is truly an essential value within the company. Through increasing communication, employees are included in corporate plans and can be convinced of the organisation's sincerity to reduce climate impact. Demonstrating that employees are required in the ambition to combat climate change increases engagement, making employees more likely to recognise the significance and added value of sustainability in the department.

5.1.3 The paradox of sustainable aviation

It can be argued that the concept of sustainability and its added value specifically within Airframe generates mixed responses among employees. A number of respondents indicated that they found it somewhat contradictory to be employed in a polluting industry where, at the same time, there is a rising focus on sustainability. Several employees indicated that especially in AOG situations, sustainability is not taken into account at all. A respondent from the office department at MEF said that an AOG is the most critical situation that exists within the technical maintenance. She said: *"...then money doesn't matter and sustainability doesn't matter at all, because then we need it right now"*. Then there are just rush deliveries, meaning that a package is flown over literally the same evening so that it will arrive the next day. The priority in these cases is to repair the aircraft as quickly as possible, resulting in the accelerated overflight of parts from abroad to the hangars at Schiphol-East. Given these kinds of practices, some employees have doubts on whether KLM is sincere in its efforts towards sustainability and some consider the impact of all sustainability endeavours within the working environment to be nil. It raises questions to what extent these efforts are effective, critically considering the environmentally damaging situations faced by the airline. A respondent from LMS was of the opinion that sustainability is often magnified and that there are plenty of steps to be taken to actually become more sustainable. He stated: *"We always advertise with biofuel, but of course that is also just window dressing. There is one plane that has a very small amount of biofuel and that is just magnified. Then you think, 'that's great', because we might be really far ahead with that, however, those are really the big things, so making the aircraft fly differently is really a long-term project. Therefore, to truly achieve sustainable aviation, many more changes need to be made than are currently happening"*.

Nevertheless, employees continue to believe that sustainability should play a more significant role within the organisation. The emphasis here should genuinely be on collectively addressing this issue, as many employees consider their individual contribution to be negligible. Therefore, making the effects of change on the organisation visible is vital in order for their environmentally conscious actions to serve a clear purpose.

In the process of finding an answer to the first research question: *"To what extent do Airframe employees perceive the significance and added value of sustainability in the department?"*, a number of important aspects emerged. The employees involved recognise the importance of sustainability in today's society. Nevertheless, sustainability within the working environment provokes several questions on account of the environmental impact of daily operations. However, the majority of respondents are well aware of the need to apply sustainable change within Airframe. Yet, this should be designed carefully, as obligation evokes resistance from employees. It must become attractive to contribute to a sustainable environment. This can be done by emphasising in the internal communication the relevance and positive side effects of acting sustainably, making employees recognise the added value within the working environment of collectively reducing the ecological footprint.

5.2 Psychology of behavioural modification

Influencing human behaviour is a complex process that is complicated to manage. Individuals make decisions based on various influences, including background factors, personal beliefs and norms and values (Ajzen and Fishbein, 2010). Nevertheless, it has proved possible to partly guide human behaviour by applying psychological strategies. During the research at KLM Airframe, insight was gained into the psychology behind employee behaviour within the different subdivisions. Several aspects emerged from the study that could result in employees adopting a more sustainable attitude in the working environment. The key factors that emerged were: engagement, attractiveness and amenities. Figure 7 indicates how often these factors recurred throughout the interviews.

Figure 7. Key Factors

Key factors	Amount of times	Amount of interviews
Engagement	33 times	13 interviews
Attractiveness	19 times	11 interviews
Amenities	27 times	11 interviews

The last key factor partly reflects the concept of nudging, in which people will unconsciously engage in sustainable behaviour when certain amenities are facilitated and which can be seen as an increasingly important theme in the literature. However, the implementation of sustainable means will not always involve the unconscious influencing of behaviour (nudging), as there are also more obvious means that are clearly intended to encourage sustainable behaviour. People can then consciously consider decisions whether or not to participate in the sustainable behaviour (cognition).

By relating the results of the field research to the results from the theoretical framework, insight was gained into incentives that can lead to sustainable behaviour. The sections below describe the key factors in detail.

5.2.1 Engagement

The literature review reveals that employee involvement in corporate interests can result in the reduction of the distance between employees and the change in question (Stolzenberg and Heberle, 2022).

Devoting attention to sufficient internal communication during changes can increase engagement by including employees in these transformations. This also emerges sharply in the field study. The employees within Airframe experience a large distance with sustainability, while this theme is increasingly prevalent within the organisation as it is already included in the corporate vision. The data analysis of ATLAS.ti revealed that the need for employee involvement in specifically sustainability in the work environment was emphasised 33 times in 13 interviews as a theme. An employee from Hangar 14 made the following comment on this: *"I think it is very important to engage everyone in your steps. And also include people in interim evaluations [...]. When you inform someone, it is crucial to include people. Short, powerful and easy"*.

Throughout the research, it emerged that employees are unaware of the sustainability objectives, as hardly any attention is devoted to it in the working environment. Yet these objectives cannot be achieved without the cooperation of employees, as they have an important contribution in ensuring the sustainability of daily processes. Low involvement in sustainability ensures that employees do not see the relevance of applying it in the working environment. A respondent from Hangar 14 confirmed this phenomenon by stating: *"If you do not include people, then acceptance is very low when changes occur"*. A lack of internal communication on sustainability radiates to employees that this phenomenon is not a priority, despite the company's sustainability goals and strategy displaying a contrary picture. Little communication then results in a lack of commitment and motivation among employees, which is an obstacle to achieving sustainability goals. Being transparent to employees about sustainability and its importance to the organisation can change employees' perceptions towards change positively. This can foster a culture of environmentally conscious behaviour within the organisation.

In addition, an employee from PCM indicated that sustainability was initially moving in the right direction within the working environment, however, ultimately due to a lack of guidance in this area, the department soon relapsed into old patterns. The ground engineer said: *"In my opinion, it was going in the right direction. But what I said, it ages, it gets watered down, the knowledge is not properly circulated and then it all gets watered down and you start again from scratch"*. Due to a lack of a representative for sustainability within the department, employees are not incentivised to be involved in achieving the sustainability objectives. A frequent theme that emerged in the data analysis was the lack of encouragement in sustainability perceived by employees. This occurred no less than 22 times in the coding of 14 conducted interviews. This once again demonstrates the value of being transparent as a company in the provision of information during corporate changes, as this can encourage employees to actively participate, which was underscored in the literature (Schweiger & De Nisi, 1991; Daly, Teague & Kitchen, 2003). Similarly, a warehouseman from the MEF department brought up this phenomenon, stating the following: *"You never hear from a manager here: '[...] the sorting process needs to improve'. You don't hear any of that. There is no one here who rules with a heavy hand"*. This therefore poses a barrier in reducing the environmental impact of day-to-day operations. Furthermore, his statement emphasises the need for proper dissemination of knowledge on the subject to effectively implement sustainable transformation.

During the participatory observation at the LMS department, I noticed that the aircraft mechanic I joined was carrying an empty plastic bag while we were heading to the aircraft for technical maintenance. He explained that he places the used cloths he consumes during repairs in here so that they can be dry-cleaned instead of being thrown in the bin. The mechanic explained that this has become a routine as he had been taught by his old employer that cloths can be reused very easily. This case demonstrated that when a company decides to take measures to reduce material waste and involves employees in this matter by stressing its importance, it can actually become a routine for employees, resulting in substantial savings within the working environment.

5.2.2 Attractivity

A second strategy in guiding employees' sustainable behaviour that emerges from the study is making sustainability attractive in the organisation. The size and comprehensiveness of the term causes employees to have many diverse ideas and perceptions on the subject. This complicates the process of clearly envisioning the relevance and added value of sustainability in the working environment. It is therefore important to make the concept concrete and demonstrate what each person can personally contribute to sustainability. This approach removes one of the barriers in acting sustainably, namely the prevailing mindset among employees that they are unable to influence the process on an individual level. Making the concept more compact can clarify the rationale for applying sustainability, making it more attractive to participate in it.

Emphasising the "What's In It For Me" approach in the internal communication and implementations for sustainability can result in increasing the attractiveness of environmentally conscious behaviour (Cekada, 2018). A respondent from PSFc was therefore of the opinion that by applying this approach that a positive atmosphere to act sustainably is automatically created. As indicated earlier, employees consider it important that their specific actions serve a visible purpose. Here, it is essential to demonstrate the benefits employees enjoy when they contribute to it. In this way, the impact of their actions becomes visible and the desire to convey the effect of individual actions is fulfilled.

In addition, personal appreciation, both in general and specifically aimed at sustainable actions, proves to be an essential factor in motivating employees to contribute to sustainability. An employee working at PCM indicated that during the development of the 'milieueilanden', that serve for separated waste streams in the hangars, he was not encouraged. He said: *"Communication often takes too long [...], you get no feedback and you are left to your own devices here. What I said, I literally made those 'milieueilanden' all by myself"*. Thus, the employee did not feel that his commitment to making the working environment more sustainable was appreciated, leaving him with an unpleasant feeling. The lack of personal appreciation and the fact that the respondent received nothing in return for his contribution may demotivate him from contributing to sustainability again. This confirms the need to make sustainable actions attractive, as this can motivate and encourage sustainable behaviour.

Making sustainable practices attractive by including the above aspects in sustainability communication can also be regarded as a form of nudging. By tailoring the communication to employees' preferences and needs, their attention will be subconsciously drawn to this information, possibly triggering them to participate in sustainability without it being imposed on them.

5.2.3 Amenities

During the field research, questions were asked on what employees lack to contribute to sustainability. According to William Edwards Deming (1900-1993), employee engagement can help optimise the quality of a particular process within a company. Thus, it emerged that employees lack certain aspects in the working environment that prevent them from contributing to reducing emissions. The absence of facilities present to exhibit environmentally conscious behaviour combined with the continued facilitation of environmentally unfriendly processes ensures that employees continue to exhibit the undesirable behaviour. During the participatory observations, it appeared that many offices within Airframe do not offer employees the opportunity to separate their waste due to a lack of waste separation bins. Some employees indicate that they would like to contribute to this, but cannot influence this due to dependence on the waste processing company that regulates this process within KLM. However, this appears to be changing with the transition to a new waste processing company. During the observations, it became apparent that this party is implementing waste separation bins in an increasing number of locations, which may subconsciously stimulate sustainable behaviour.

During the study, several employees indicated that they still have difficulties with determining what is or is not allowed in a certain waste separation bin. As a result of the lack of knowledge on this matter, waste often appears to be in the wrong bins. Whilst observing in the MEF department, I noticed that there were several bins for waste separation. When I addressed this to the employee who guided me through, he indicated that there is a lack of clarity among the staff regarding the separation of waste, resulting in waste often ending up in the wrong bins. This issue was thus confirmed during an interview with a warehouse employee at MEF, and it emerged that the whole separation of waste raises questions: *"But it's also very difficult to recognise [...]. There are these bags, the ordinary plastic goes in there, however, if you remove a sticker, for example, where does the remaining waste belong? Is that waste too? Does that also belong with plastic? Does that belong with paper?"*. The need for clear recognition of which products are allowed in a certain bin has led to banners soon being placed next to the bins, stating exactly what is and what is not allowed in the bin. In this way, employees are assisted in sustainable behaviour.

The participatory observations within the subdivisions revealed that some units are more advanced in terms of sustainability compared to other departments. For instance, LMS chose to remove plastic cups from the coffee machine permanently, forcing people to use coffee mugs. This saves an enormous amount of plastic given the volume of plastic in circulation. In this way, sustainable behaviour was encouraged. Considering Hangar 11, plastic cups still appear to come out of the vending machine, reducing the need for employees to buy their own mugs. Consequently, while doing participatory observations in the hangars in particular, but also in the offices, I noticed that many employees were walking around with plastic cups from the coffee machine and it seemed like it was a habit for them to use a plastic cup. Subsequently, I even saw some coffee cups lying in the 'milieueilanden' in the hangars, even though these bins are only meant to separate waste originated from aircraft technical maintenance. This shows that environmentally unfriendly practices can reinforce each other, ultimately affecting the entire working environment. After all, throwing waste in the wrong bins has consequences, although unknown to employees. A respondent from PCM said the following about waste: *"But also awareness of, what actually happens to the waste? Where does it go? That whole process is unknown to everyone. Here it just disappears into a bin and you don't see it anymore. But if you know what's behind it, how many people are actually involved, yes, if you can raise everyone's awareness of that, I think big steps can be taken"*. It can thus be argued that desired behaviour can be encouraged by offering knowledge and sustainable implementations or by eliminating unsustainable processes. Employees indicate that change should not require extra effort and therefore, during this process, it is crucial to ensure an easy implementation of sustainable initiatives.

It is vital to offer sustainable alternatives in these situations. Throughout the observation at both the PCM and MEF departments, I noticed that there is an enormous amount of plastic in circulation as aircraft parts are individually packed in plastic bags. During the observations, employees indicated that they consider this problematic too, however, there is currently no alternative provided by KLM, causing daily processes to continue to be carried out in the same, environmentally unfriendly way. The massive use of plastic was also highlighted very often during the interviews. A PCM aircraft mechanic perceives this on a daily basis and remarked: *"You order one bolt which they put in a plastic bag and the bag is in another bag with a piece of paper with a job order and that is then in yet another bag. So you actually have four plastic bags for one product already"*. This demonstrates that a lot of plastic is already used per item, making it clear that there is considerable room for improvement in this field. Offering alternatives could solve the plastic problem and could stimulate sustainable behaviour. Furthermore, as an organisation, it is essential to genuinely take sustainable ideas from employees into consideration. During an interview with an employee of the PCM department, the employee said he had found a solution to combat the plastic problem. He said: *"I then made a calculation of what it would yield. My idea was, what if instead of plastic bags we use plastic trays. Then you have a bin for each location [of*

the plane], for example lateral, transverse, tail, engine 1, engine 2. Then you have all separate bins, where they throw those parts in [...]. So then you already have, I think, twenty less bags". His calculation indicated that 3 to 4 tonnes of plastic could be saved on an annual basis. Yet this idea was never implemented. Listening to suggestions like these from employees and taking a critical look at their feasibility will get employees more involved in the sustainability process and could lead to a reduction of unsustainable practices and a drastic decrease in the consumption of plastic.

To answer the second research question: *"What psychological strategies are required to guide conscious sustainable behaviour?"*, it can be argued that certain techniques can guide sustainable behaviour within Airframe. Increasing employee engagement in this aspect, making sustainability attractive and offering amenities and removing unsustainable facilities can be considered a form of nudging and are instrumental in encouraging environmentally friendly behaviour. The concept of nudging addresses the subtle and often unconscious steering of human behaviour (Thaler & Sunstein, 2008). However, the psychological strategies mentioned above are not all subtle, since in many cases employees would realise that these strategies are applied in the work environment to promote sustainable behaviour. Nevertheless, higher engagement and transparency in sustainability often subconsciously makes people more likely to accept the change. And making sustainability attractive will also subconsciously ensure that employees will contribute to this effort. Offering or abolishing certain facilities may be seen less as nudging, as employees are often aware that this is intended to create an environmentally conscious working environment.

5.3 The absence of adequate sustainability communication

Within Airframe, a variety of communication tools are utilised to maximise the range. Due to the diversity of work activities, employees from operations encounter other means of communication compared to employees from the office. Therefore, throughout this study, a distinction was made between the types of employees to specify the communication to achieve greater awareness for sustainability. Employees from operations mainly work on aircraft during their shifts, making them less tied to a computer, on which e-mails and newsletters are sent. During breaks, they are often in areas were CleverDisplays are located on which a variety of news is projected. Office employees spend most of their working day behind the computer, and therefore they mostly encounter mails, general newsletters and departmental newsletters. Employees within Airframe agree that there is an appalling amount of general communication in circulation, flooding them with both relevant and irrelevant information. Employees indicated that e-mails are ineffective in disseminating particular information given the fact that they receive numerous e-mails on a daily basis, with many unread messages as a result. In addition, general newsletters do not appeal to most employees as it contains general news and not specific to their department.

Taking a critical look at the outcomes of the study and the third research question, *"To what extent do the existing communication tools within Airframe contribute to creating awareness among employees for sustainability?"*, it can be stated that the current communication tools hardly increase awareness for sustainability. The low priority given to sustainability was confirmed by a respondent from Hangar 14, who commented: *"There is not much happening here regarding sustainability, so there is hardly any communication on this theme"*. Almost all respondents agree that communication on sustainability is minimal, which again confirms the low commitment in sustainable actions and awareness. There is no consistent provision of information when it comes to sustainability, which also prevents resources from contributing to higher awareness. However, there are communication tools that have the potential to make sustainability a more significant part within Airframe. This will be addressed in the next section.

5.4 The correlation between psychological needs and employee behaviour

Scientific research has found that it is necessary to match sustainable initiatives in the workplace with employees' behaviour and attitudes to achieve the desired effect (Dahiya, 2020; Stolzenberg and Heberle, 2022). Meeting the needs of employees creates an environment where employees are more likely to change their minds when confronted with corporate change and will be more willing to accept the relevant alteration. Due to the apparent significance in the literature of people's needs in driving effective change, both general needs when it comes to sustainability implementations and needs in sustainability communication were investigated in the field research. Specifically considering the general needs around sustainability, there are several concepts that emerge that have been explained in detail in Section 5.2 *Psychology of behavioural modification*. First, employees want to be involved in business plans related to sustainability, which then ensures faster acceptance when changes occur. In addition, personal appreciation appears to be an important factor and employees crave for an effortless implementation of sustainable initiatives. The sections below elaborate on employees' needs when it comes to internal communication on sustainability.

5.4.1 Suitable means of communication

As previously mentioned, a distinction was drawn between employees from the operation and employees from the office. Several communication tools emerged that proved to be suitable to deploy for sustainability communication. Firstly, CleverDisplays prove to be suitable for deployment to raise awareness of sustainability among employees in the operation. The data analysis through ATLAS.ti demonstrates that the effectiveness of CleverDisplays was brought up no less than 23 times in 14 of the conducted interviews. This proves to be an important theme for employees within Airframe that requires further attention and is interesting to use for sustainability communication. In addition, departmental newsletters sent separately for each unit are found to be appropriate for employees from the office. Many employees read the departmental newsletters for their relevance to personal work and developments within the unit. This is in line with the need of employees for involvement in both sustainability and other corporate changes. And finally, the KLM NewsApp has the potential to be used for both groups. It is vital to create more awareness of the application within Airframe. The results of the analysis suggest considerable variation in the usage of the NewsApp, indicating low or no usage of the application 8 times in 4 interviews, while in 10 instances in 8 interviews it emerged that it is being used. The general purpose of the communication tools is to inform employees on developments within the organisation. Bringing sustainability more to the fore in these means conveys a perception that this theme is becoming increasingly important to the organisation as a whole.

5.4.1.1 CleverDisplays

Given the nature of the work performed by operation employees, it appears that these employees encounter different means of communication compared to office workers. Since production employees are mainly hands-on, certain communication tools may be seen as ineffective in reaching this target group. Since CleverDisplays are located in multiple locations, employees encounter the screens in various places. The low threshold of the tool ensures that providing information through the screens does not feel like an obligation for employees to read it. The participatory observations at LMS and Hangars 11 and 12 therefore revealed that ground engineers come into frequent contact with CleverDisplays, as the screens are often located in places where they regularly find themselves throughout a working day. At the LMS department in particular, there was a screen located in almost every transparent room where alternating information was displayed. A ground engineer at LMS said the following about the effectiveness of CleverDisplays: *"We sometimes have two-hour intervals and then you just sit and stare at one of those screens and very occasionally there is something that catches your attention and then we talk about it. Then someone does have a comment and then the ball starts*

rolling". Often, attention is subconsciously drawn to the screens due to the variety of information being displayed. Operations staff therefore express their interest in reading more on sustainability through this device, provided it is designed in a careful and well-thought-out manner.

5.4.1.2 Departmental newsletters

Office employees appreciate being informed about developments within their respective departments. Consequently, departmental newsletters distributed via email garner significant readership. An employee from Hangar 14 has insight into the statistics and confirmed this information. She mentioned the following on the use of departmental newsletters: *"It is really the medium we use for important information, informal and formal, and often it contains things they [employees] need in the work environment. As a result, it is therefore well read. Thus, this is a good place to publish things when something changes in the environment or on sustainability in the hangar"*. Hence, this means of communication enables them to stay updated on departmental developments, which hold relevance for their individual work and the overall work environment. As evidenced by the field study, employees expressed less interest in reading general newsletters, as they are less pertinent to their personal work environment. Thus, it will be effective to disseminate information on sustainability and its practical implementation through departmental newsletters.

5.4.1.3 KLM NewsApp

The usage of the KLM NewsApp appears to vary greatly among respondents. A respondent from Hangar 14 confirmed this and stated the following: *"I know some use it a lot and watch it on a daily basis and some don't even know of its existence"*. In general, respondents are familiar with the existence of the NewsApp. However, for some, the barrier to downloading the app is high due to unfamiliarity on the exact use of the tool. Employees who did install the app indicated that they are enthusiastic about this communication tool and mentioned that they use it regularly. Since the results of this research demonstrated that the NewsApp needs more awareness to encourage employees to use the app, the app was promoted in the Scope, a general newsletter of KLM E&M, on April 4, 2023. Creating more awareness for the app, therefore, could result in more employees making use of it. Communication on sustainability specifically could therefore be given more prominence in the NewsApp to raise awareness among both employees in operations and in the office. During the investigation, both groups regularly expressed their interest in the NewsApp as a means of communicating sustainability.

5.4.2 Specific content of the communication tools

In order to effectively reach employees and capture their attention in the communication, it is crucial that communication tools provide comprehensible and relevant content that matches the needs and interests of the target audience. The content should attract, encouraging employees to read further, making them absorb the information and being triggered to engage in sustainability in the workplace as a result. The following sections delve deeply into the needs employees have specifically when it comes to sustainability communication content. By analysing the data using constructivist grounded theory, the correlation that exists between human cognition and the ability to stimulate desired behaviour unconsciously, i.e. nudging, emerged. By responding to and taking into account the specific, individual needs and requirements of employees in the internal communication regarding sustainability, desired behaviour can be stimulated both consciously (cognition) and unconsciously (nudging).

5.4.2.1 Positive sustainability communication

A significant aspect in the whole communication process on sustainability is to address the issue from a positive angle. Most respondents believe that by positively stimulating employees, employees gain a

positive view of the relevance and necessity of sustainability and this may encourage them to contribute to it on a personal level.

In contrast, employees indicate that negative communication is counterproductive. According to the data analysis, a negative communication strategy on sustainability within Airframe was found to have the opposite effect in motivating employees to engage in environmentally conscious behaviour, as indicated in 13 instances in 8 interviews. By communicating one's shortcoming within the working environment, which consequently increases the environmental impact, has a demotivating effect, as employees then develop the feeling that they are obliged to contribute to sustainability and this evokes resistance. In addition, displaying images showing the consequences of climate change in communications fails to serve as an effective source of motivation. Employees are already sufficiently exposed to this in contemporary means of communication, creating a kind of immunity, keeping the impact low.

Highlighting sustainability from a positive angle by demonstrating what has been saved in the working environment in a given month or by giving people recognition when they have made a significant contribution in improving the sustainability of the working environment can encourage environmentally aware behaviour. A staff member from the MEF department was of the opinion that if people are told: *"Through your efforts, we have already reduced the consumption of cups with […] and that has a very positive effect on [...]"*, it can encourage people to make their further contribution in this regard.

5.4.2.2 Relevance of sustainability

During the field research, it was strongly emphasised that employees are in need of information that communicates the relevance of sustainability. Employees would like to be given knowledge on the importance of applying sustainable implementations in the working environment. Two aspects emerged in this context that are important to emphasise in sustainability communication.

First, the concept of sustainability needs to be made concrete. The size and comprehensiveness of the concept results in employees experiencing a certain distance with the term. They encounter challenges in fully comprehending the exact implications of KLM's intentions to enhance the sustainability within the working environment and the concrete measures involved. Consequently, almost all employees are unfamiliar with the sustainability targets specifically related to the working environment. The size of these objectives is limiting employees' ability to recognise what they can contribute to this on an individual level. Making sustainability and the established sustainability objectives more concrete can consequently result in employees being more likely to display sustainable behaviour. Providing knowledge on the exact meaning of sustainability in the workplace, its relevance and how one can influence it independently, can subsequently narrow the gap between sustainability and employees. In addition, the relevance of sustainability can be made more apparent by demonstrating the positive impact of acting sustainably in the workplace. It is often approached from a negative perspective, focusing on the possible, negative consequences if humanity does not embark on a sustainable course and often highlights what people are doing incorrectly. This has a demotivating effect on employees. Employees appreciate it when they notice that their efforts result in concrete results and thus serve a purpose. By putting emphasis on this in the internal communication, it can encourage people to adopt an even more sustainable attitude.

While observing the PSFc department, I was confronted with a board on the wall that provided knowledge on the CO_2 emissions caused by aviation and KLM's ambition to reduce this (Figure 8). By providing this information, employees gain knowledge on the emissions, as well as the measures taken to counteract it. An interesting and original way of providing knowledge and highlighting the relevance of sustainability. However, one may wonder to what extent the content really reaches employees due to the amount of text. In fact, the current research shows that employees prefer to perceive as little text as

possible and plenty of visual content in sustainability communication. This will be further explained in Section 5.4.2.4 *Tangible communication*.

Figure 8. Knowledge on CO_2 emissions

5.4.2.3 Emphasising the individual contribution

Many employees consider that their personal contribution to sustainability is negligible and this line of thinking is therefore an obstacle in actually acting sustainably. Given the size of the environmental impact, many employees have the impression of having no impact on the larger picture. Nonetheless, just as every environmentally detrimental action bears consequences for the environment, each contribution towards sustainability plays a role in diminishing the ecological footprint. However, the actual influence of the individual contribution to reduce the environmental impact is unknown to employees, causing them not to feel motivated to exhibit environmentally conscious behaviour. The data analysis revealed a strong need to emphasise the individual influence in sustainability communication. This aspect came up as many as 19 times in 10 interviews in the overall analysis. Employees are eager to witness, through effective communication, that their individual efforts towards environmentally conscious practices are yielding visible outcomes. This aspect has a direct connection to the preceding section, which highlights the necessity of making sustainability more concrete as a phenomenon. By accenting the potential impact that an individual's commitment to a healthier environment can have, it becomes possible to inspire them to integrate sustainable practices into their daily routines.

In this process, it is important to be concrete in communication, by specifically demonstrating the changes one can make during their daily work to contribute to this effort. Providing employees with tools in ways to reduce the environmental impact lowers the threshold to participate. Personalising and providing concrete examples in communication, along with highlighting the added value of environmentally conscious actions, can effectively foster sustainable behaviour.

In doing so, it is important to demonstrate what someone personally gains from contributing to a sustainable working environment. This also reflects the "What's In It For Me approach". The need to clarify this is confirmed by a respondent from PSFc: *"People are still sensitive to: What does it do for me on an individual level? If it will benefit me personally, then I will do it"*. It is therefore important to emphasise in the communication that contributing to sustainability serves a clear and beneficial purpose.

5.4.2.4 Tangible communication

Employees need tangible communication in which they instantly interpret the relevant message correctly. In this respect, a number of aspects are important that will promote the correct interpretation of the respective message.

First, employees need consistent information regarding sustainability. The various messages disseminated have to correlate well and reinforce each other. The information provided should not contradict each other, but rather provide clarity regarding this increasingly important topic. In addition, the content should be straightforward. The communication medium should avoid complex language or jargon, as it tends to cause employee disengagement and disinterest. It should be clear at a glance what the exact message is that one would like to convey. In addition, employees stress the importance of repeating the message. Providing information on sustainable practices only once proves to be ineffective as the message does not linger. By providing information on sustainability on a regular basis, employees are periodically confronted with sustainability, which at the same time indicates that sustainability is becoming increasingly important within the organisation.

Secondly, visual communication holds greater appeal for employees. Presenting extensive texts without incorporating images or videos proves to be counterproductive, as they are less likely to engage with the content. A ground engineer from LMS pointed to one of the CleverDisplays while being interviewed and indicated that he would not read this particular text, as it was too long and the screens often switch quickly to the next screen. Conversely, clear and short yet powerful messages with sufficient visual content can be effective. Therefore, the effectiveness of the board (Figure 7) perceived during the observation at PSFc can be questioned. The communication should be attractive, which then makes it appealing for employees to participate in sustainable action. Visual content makes the communication intriguing, often subconsciously drawing their attention towards it.

Third, the relevance of sustainability and its impact can be reinforced by using facts. Employees express a need for concrete evidence on the positive impact of sustainability in the workplace. In addition, facts are short yet powerful, which matches the need to receive concise information regarding sustainability. I noticed during the participatory observation at PCM that the hangar doors in both Hangar 11 and 12 were left open for long periods of time without any aircraft movements. When I raised the issue to an employee, he indicated that this occurs very regularly although it is not particularly sustainable due to the large amount of cold or heat loss, which in turn requires a lot of energy to restore the hangars to temperature. A respondent from Hangar 14 confirmed this phenomenon, however, indicated that they try to keep the doors closed as much as possible. However, in practice, this turns out to be a more complicated process than one might think. Providing facts on the potential savings when the hangar doors are only opened when necessary can make employees more alert and aware that this needs to be changed.

It is therefore crucial to maintain the interest of employees by presenting facts in an engaging manner, avoiding the use of large numbers that may not convey meaningful information. Emphasising the impact of saving a specific number of tonnes of plastic may not be particularly captivating. This can be made more tangible by making the amount of plastic visible in visual content, by projecting the plastic as a mountain of waste. In this regard, the focus can be shifted to highlight the significant quantity of plastic, measured in terms of heaps, that is being saved on a monthly basis, thanks to the contribution of employees. By doing so, the impact of sustainability becomes more tangible and relatable for employees.

5.4.2.5 Recognisability

Due to the amount of information employees receive on a daily basis, it is necessary to make sustainability communication stand out. It needs to have a certain recognisability, making it stand out to employees immediately on the one hand, and making it attractive to employees at the same time, thereby capturing their attention. This can be accomplished by developing a template containing a logo and a

certain use of colour in order for employees to recognise the communication at a glance. This was highlighted during a conversation with an employee of Hangar 14 who mentioned the following on using a template: *"Always use the same type of format. So if you use colours, it is important to always use the same kind of colours or show the same kind of videos or a logo. That the moment it is placed in the NewsApp or in a newsletter, on the screens or wherever, that it is immediately associated with that topic"*. Due to the fact that this emerged in the research as an important aspect of communicating sustainability within Airframe, a colleague was commissioned to develop a template for this purpose.

Thus, in the search for an answer to the fourth research question, *"What are employees' needs in terms of means of communication?"*, the following aspects emerged. The CleverDisplays are suitable to be used for employees in the operation, the departmental newsletters for office employees and the KLM NewsApp for both of these groups. In addition, employees have specific needs when it comes to the content of communication surrounding sustainability. The overall communication should be positive in nature, emphasising the relevance of sustainability by making the concept and sustainability objectives concrete on the one hand, and by showing the positive effect of acting sustainably in the working environment on the other hand. Furthermore, it is essential to emphasise the significance of the individual contribution in communication, as many employees believe that their own contribution has no effect on the larger picture. Providing consistent and simple information that is repeated regularly is crucial as well. Visual communication, which has a nudge effect, appeals most to employees and specifically when reinforced with facts that can be seen as evidence for the necessity of sustainability. And finally, it is crucial to give sustainability-related communication a certain recognisability with a fixed template, logo and use of colour, in order to create an immediate association with sustainability. By taking these factors into account, employees' needs regarding internal communication are met with the aim of promoting environmentally aware behaviour in the working environment.

5.5 Constructivist grounded theory (results)

In summary, the aforementioned findings demonstrate that several important aspects emerged in the analysis of the data from the field research using constructivist grounded theory. A number of new aspects need to be taken into account that are important to include in the internal communication regarding sustainability within Airframe to increase awareness specifically among the employees of the department. These are the main aspects identified:

First, the analysis brought out the correlation between cognition and nudging. Both conscious and unconscious displays of certain behaviours are a response to specific stimuli. By addressing the needs of employees when it comes to sustainability communication, employees will either consciously or unconsciously display certain behaviour, however, they both serve the same purpose, demonstrating that a combination of these can effectively drive the desired behaviour. For instance, placing waste separation bins conveys a direct image to employees that they should sort their waste and this drives them to conscious action. In contrast, creating a set template for sustainability communication can subconsciously capture employees' attention by making them recognise the format, after which they absorb the information and potentially act on it. A combination of these behavioural control techniques can therefore be effective in creating an environmentally conscious work environment.

Second, employees' attitudes and behaviour towards sustainability appear to be related to positive or negative associations with the phenomenon from the past and current barriers in the work environment. For instance, as some employees have developed the idea from society that sustainability is imposed, resistance arises that prevents them from participating. This highlights the importance of taking into account employees' needs regarding internal communication, which is also considered in the literature as an indispensable element to achieve desired behaviour.

Finally, considering specifically employees within Airframe, it is important to bridge the gap between employees and sustainability by emphasising the relevance of sustainability and by making it personal and appealing. The above aspects from the analysis are indispensable to consider in the internal communication and will consciously or unconsciously raise awareness for sustainability and can encourage the desired behaviour if applied correctly.

Chapter 6. Communication plan

The research findings offer valuable insights into the most effective approach for communicating sustainability to employees within the Airframe division. By discerning the underlying factors influencing employee behaviour and taking their needs into consideration, the most suitable communication methods were identified. Furthermore, the key content that these communication channels should incorporate to encourage the desired sustainable behaviours is determined. By consistently considering the interrelationship between psychology, communication, and sustainability throughout the research process, a communication approach is ascertained that aligns best with the employees within Airframe. The outcomes of this study serve as the foundation for the communication plan outlined below.

Communication plan

Raising awareness for sustainability among Airframe employees

June, 2023

Elise de Vries

Commissioned by DT&CI Airframe

Royal Dutch Airlines

I. The sustainable growth of global aviation

Worldwide, the emphasis among companies on corporate social responsibility (CSR) is rising. Increasingly, businesses are adapting their operations with the aim of minimising their negative impact on society as a whole. The motivation behind KLM's sustainability efforts is fuelled by its awareness of their social role and position in society. Due to the size of the company and the increasing focus on CO_2 emissions caused by aviation, KLM is under a magnifying glass. In increasing numbers, competing companies are integrating sustainability into their business strategies, making it virtually unacceptable for a company to be left behind. In addition, KLM wants to be prepared for the future in which sustainability is going to be an increasingly high priority. Moreover, a growing number of (prospective) employees attach value to this aspect in their daily lives and aim to make an active contribution to sustainability within the professional setting.

To reduce the ecological impact, KLM has conveyed specific sustainability targets for the year 2030, showing that as a company it aspires to contribute to reducing climate impact. The overarching objective in advancing the overall sustainability of the organisation involves striving to *creating memorable experiences on the planet we care for* (KLM Royal Dutch Airlines, 2023). Additionally, a set of climate ambitions has been devised and are formulated as follows:

- CO_2 flight operations: -30% CO_2 per pax/km in 2030 vs 2005
- CO_2 ground operations: Zero emissions at the hub
- Non-hazardous waste: -50% residual waste in 2030 vs 2011

The last two objectives have a direct impact on business processes for the Engineering & Maintenance (E&M) department. In addition, E&M strives for a carbon-neutral department by 2050 and aims to implement various initiatives to take sustainability to the next level (KLM Royal Dutch Airlines, 2023). Achieving these targets requires cooperation from employees. Implementing effective communication strategies to convey the message of sustainability to employees is essential for fostering a sustainable business culture. The plan arose to launch an awareness campaign to communicate the need for sustainability within the various subdivisions within KLM Airframe.

The research focused on three main pillars, namely sustainability, communication and psychology and the correlation amongst them. Gaining insight into employees' behaviour towards sustainability is crucial in properly communicating this topic to increase employee engagement in sustainable actions. The objective of the study was to find out which communication tools would be suitable to use to communicate sustainability. The Airframe departments involved in the scope of the study were:

- Material, Equipment & Facilities (MEF)
- Line Maintenance Schiphol (LMS)
- Planning, Scheduling & Fleet control (PSFc)
- Preventive plant, Corrective plant & Maintenance Support (PCM)
- Hangar 14

By doing participatory observations and semi-structured interviews among employees within the scope, data was obtained on employee awareness around sustainability in the workplace, employees' thoughts when they think of the concept, employees' needs when it comes to sustainability and ways of communication that appeal most (and least) to employees in conveying information regarding sustainability. Moreover, a thorough understanding was gained of the essential content elements that a communication tool must contain to be truly effective and encourage employees to actively participate in sustainability initiatives.

II. Corporate objectives

Sustainable business strategy

KLM's corporate strategy and vision 'pioneering to become a frontrunner in sustainable aviation' demonstrates the company's commitment to maintaining the leading role in aviation by being at the forefront of innovations and evolving with societal developments. The strategy is composed of three pillars that collectively support the corporate strategy. The pillar 'transform to a net-positive company' involves generating more value for society, the environment and the global economy than is consumed. This can be achieved by reducing the impact on the environment and society by implementing sustainable initiatives. In addition, the 'create technological advancement' pillar strives to reduce emissions by optimising all kinds of processes within the company. On a social level, KLM also strives to ensure that people experience a level of satisfaction with the company. This is reflected in the pillar 'run a great airline for our customers and our people'. The three pillars contribute to the overall goal of being a forerunner in sustainable aviation and employees have an indispensable role in this endeavour. Intrinsically motivated employees are necessary to implement and ensure sustainable changes to thus become sustainable as a company. Suitable communication on the added value of sustainable changes is crucial to achieve the objectives.

Figure 1. Corporate strategy KLM

Employee engagement

The aforementioned sustainability objectives set by KLM contribute to the company's business strategy. The company's sustainability efforts in various areas demonstrate that the airline is aware of the added value of sustainability. Within the Airframe department, the current focus is on increasing sustainability awareness among employees with the ultimate aim of reducing the environmental impact in the overall working environment. By deploying appropriate communication tools, the company aims to increase sustainability awareness among Airframe employees. Through the awareness campaign, KLM demonstrates that sustainability is not limited to large-scale initiatives. It is also present in the smaller aspects of the working environment and is considered increasingly important. The position of sustainability in the company as well as employee engagement can be enhanced as a result. The various initiatives around sustainability and the strategy underlying these efforts can collectively create a more sustainable airline.

Through the integration of sustainability as a prominent component within communication, employees are increasingly confronted with the importance of sustainability in different ways. Despite the

prominence of sustainability in society, sustainability remains in the background within Airframe. In the various subdivisions, there are ample opportunities to optimise the working environment through sustainable initiatives, however, this requires cooperation from employees. To motivate and stimulate employees in applying sustainable practices during their daily work, it is vital to communicate the added value of sustainability at an individual level.

Sustainability awareness will ultimately increase engagement and participation in environmentally responsible behaviour. By providing information regarding environmentally conscious action and emphasising its importance in the working environment, employees will be included in KLM's plans for sustainability. Research into human behaviour has shown that employees in organisations are more understanding and committed to change when they are involved in the process. Being transparent in internal communication creates a sense of commitment and ensures more rapid employee participation in change. It is therefore essential to pay sufficient attention to this aspect in the internal communication.

The transition to environmentally conscious behaviour

The primary objective of utilising communication tools for the dissemination of sustainability is to induce transformative behavioural changes among employees. This needs to be accomplished using a positive approach by providing knowledge about the urgency of sustainability within the organisation. This is currently lacking, leading employees to perceive sustainability as complicated and too much effort to apply. The intended effect of the provision of information is to intrinsically encourage employees to actively contribute to sustainability within the working environment. To achieve this, it is crucial to enthuse employees to participate in this endeavour. Increasing employees' awareness of their environmental impact in their daily work can result in decreasing CO_2 emissions and less material wastage during operations. Taking a critical look at both the information needs and general needs of employees and taking these necessities into consideration when implementing communication tools can make a valuable contribution to promoting sustainability awareness within the company.

III. Target audience and needs

The target group specifically aimed at in the communication are the employees within Airframe. The department, as part of Engineering & Maintenance, consists of about 1.200 employees who can be roughly divided into employees working in production and employees working in the office. The study has shown that there is an observable difference in the communication tools used by production and office employees due to the difference in the nature of the occupation. While employees in the office mainly carry out their work behind their computers, employees in operations are mainly doing hands-on work. Logically, internal communication will reach these two types of employees differently. It is therefore important to take this into consideration when deploying communication tools.

Throughout the study, various research techniques were used to collect data. This data provided insights into employees' needs for sustainability communication. During the field research, 18 semi-structured interviews were conducted with employees in the various subdivisions of Airframe. Two of these were group interviews. A diversity of employees were incorporated into the investigation to gather data from multiple angles, aiming to capture a wide range of perspectives. In addition, a number of participatory observations took place in the departments. The needs of employees when it comes to internal communication is an important starting point for the deployment of communication tools. In fact, scientific research demonstrates that it is crucial to pay attention to employees' needs and to take into account the emotional side of employees that is triggered by changes. By appropriately integrating their needs into the final outcome, the aspiration to effectively reach employees through communication can be achieved.

A number of (general) needs emanating from employees strongly emerged from the research and are essential to include in the communication regarding sustainability:

- Need for positive communication on sustainability.
- Need for involvement in sustainability.
- Need for personal appreciation.
- Need for simple implementation of sustainable actions.

First, there is a need for positive information when it comes to sustainability. In general, it is not appealing to employees when they perceive images of the impact of climate change or when the employees are personally attacked for their lack of environmental awareness. This actually causes negative associations with sustainability, while that should be avoided. Generally, employees tend to disfavour situations where they perceive imposition without their input. Communicating sustainability from a positive angle may alter this feeling and can create positive feelings among employees for environmentally conscious action.

Second, employees within Airframe are in need of more involvement in sustainability. In general, the KLM sustainability goals are virtually unknown to employees and they experience little motivation from the company to apply sustainability in their daily activities. Although sustainability is playing an increasing role in society and within KLM as a whole, there is little awareness of the phenomenon in the working environment. Employees recognise the need for sustainability, however, due to a lack of motivation from the departments where they work in and from KLM in general and the absence of a representative in this area, little consideration is given to it. The employees also consider sustainability to be a catch-all term and would prefer a concrete and tangible concept, making it more explicit how they can contribute to it individually.

In addition, employees feel the need for personal appreciation. Employees experience a sense of satisfaction when they are told that their contribution to the company is appreciated. Genuinely expressing appreciation when the employees make a positive contribution to sustainability can increase motivation to apply sustainability further in the department.

Finally, employees indicate that adopting environmentally conscious behaviour should be easy and should not require extra effort. Change within organisations often creates resistance, as people have to change something in the structure of their daily activities. In communication, it is therefore important to emphasise that sustainability within Airframe does not require a complicated transition, instead, it has the potential to yield positive secondary effects.

Identifying employees' needs is very important prior to deploying communication tools. Employee dissatisfaction can lead to resistance to any change within the organisation. Therefore, it can be considered urgent to understand employees' needs before the implementation of communication tools. The communication of sustainability should appeal to employees and therefore it is essential to have a clear understanding of which forms of communication appeal to people and which, on the contrary, could be considered ineffective. Furthermore, fostering a collaborative environment where employees can ask questions and provide input promotes a two-way communication flow and encourages active engagement.

IV. Means of communication

Within KLM Airframe, several means of communication are used to inform employees of the latest developments within the organisation in general and specifically in the departments. A mix of communication tools was chosen to suit the diverse group of employees who each prefer a different means of communication. Consequently, a larger target group is reached than if the focus was placed on only one medium.

Throughout the field research, through personal conversations and participatory observations, insight was gained into effective ways to communicate sustainability in the Airframe department. This revealed which means are suitable and unsuitable for this purpose. The study distinguished between employees in the office and in the production, given that the nature of the work is not comparable, which would make using the same resources ineffective. The research took a critical look at the course of employees' daily work, which revealed that certain means of communication are inefficient to deploy given the operational work. Communication tools that emerged strongly in the study to use in communicating sustainability are CleverDisplays, departmental newsletters and the NewsApp.

CleverDisplays

The results of the research among Airframe employees emphasised that the deployment of CleverDisplays is an effective way of conveying information. The approachability of the tool ensures that providing information through screens does not feel like an obligation for employees to read it. Forcing information on employees is an incorrect approach in communication as it evokes feelings of obligation, leading to resistance. The effectiveness of CleverDisplays does not lie in employees deliberately walking towards the device to absorb the information. CleverDisplays generally are suspended in tactically chosen places, for instance in waiting rooms or canteens. Often, employees' attention is subconsciously drawn towards the screens, causing them to read the information displayed. In addition, the versatility of the slides attracts and draws employees' interest.

The operational work of the production department demonstrates that for production employees specifically, certain resources will not be effective in conveying information. Looking at the daily schedules of employees in operations, it becomes evident that employees are particularly engaged in practical work and do not, unlike office workers, spend their time behind the computer. Providing information through e-mails or newsletters would therefore not be appealing and effective in conveying the importance of sustainability.

However, the use of CleverDisplays in the production department could raise awareness of sustainability. Screens offer a solution for sharing internal information with employees who do not use computers frequently. During the field study, employees from both production and the office expressed interest in communication through CleverDisplays. They consider displays to be an effective and interesting way to receive information. However, employees indicate that communication through CleverDisplays must be carefully designed in order to achieve the desired effect. The content must be relevant and intriguing to employees to the extent that it generates employee interest.

Departmental newsletters

A large number of office staff indicated that newsletters are ineffective in disseminating information as employees already receive a large number of newsletters. However, it emerged that employees do show interest in the departmental newsletter of their own department. Due to the relevance on personal work, departmental newsletters appeal more than general newsletters and are therefore being read. Employees are interested in news related to their own department since it often concerns and affects their personal work and contains relevant information, keeping them abreast of departmental developments. Employees feel more connected to their own department than to the company in general. Using departmental newsletters to communicate sustainability will therefore be effective. The newsletters could also contain challenges that employees can take part in collectively to take environmental awareness to the next level and reduce emissions in the department concerned. In this way, acting

sustainably is made more concrete and personal, by showing how employees can engage in sustainability in their own activities.

NewsApp

The study demonstrates that the use of the NewsApp is highly variable among employees. Employees are generally familiar with the existence of the communication tool. However, the impediment to actually downloading the app is high for some, due to unfamiliarity on how to use the tool. The research revealed that employees who do have the app installed, also use it regularly.

Publicising the use of the NewsApp can promote the use of the tool. To raise awareness of the NewsApp among employees, the app was promoted in the Scope on April 4, 2023. More publicity for the NewsApp subsequently provides opportunities to raise awareness for sustainability by disseminating information about its importance through the app. The NewsApp is a modern communication tool that could appeal to employees, as almost everyone possesses a mobile phone nowadays. The barrier to downloading the app should be lowered by simplifying the installation and login system for employees.

Frequency

Repetition of the message is required to raise the desired awareness for sustainability. Finding the right balance is necessary to ensure, on the one hand, that the message is brought to the attention of employees and, on the other hand, not to overwhelm employees with information, possibly resulting in them becoming immune to certain communications. The frequency of communication will vary according to the means deployed. In order to ensure effective communication across all personnel within Airframe, it is imperative that every individual has been provided with ample opportunities to encounter a specific message.

It is advisable to periodically alter the messaging displayed on the CleverDisplays with a frequency of once every two weeks. By displaying a particular message on the CleverDisplays across various departments for a duration of two weeks, employees will be provided with sufficient occasions to encounter it. Taking into account variations in working days and hours, it is deemed inefficient to restrict sustainability-related communication to a single day each week. The NewsApp could publish a new article or news item on sustainability every fortnight as well. By regularly providing new sustainability-related information, variety is ensured and employees have ample opportunity to access this information. The key distinction from the CleverDisplays is that previously published communications pertaining to sustainability are retained within the app instead of being deleted. The quantity of times sustainability is shown in departmental newsletters depends on when the newsletters are distributed. Given that departmental newsletters have a significant readership, it is advisable to provide information related to sustainability in each edition of the departmental newsletter.

Communication sustainability representative

Consistent and effective communication regarding sustainability will lead to employees encountering the significance of practicing sustainability in the workplace on a daily basis. Consequently, it becomes imperative to enhance the facilitation of sustainability within the department. To accomplish this, the department intends to recruit a working intern who will assist in establishing a sustainable working environment. The intern's responsibilities will involve developing and providing relevant resources within the departments to promote sustainable behaviour among employees. This could include setting up sustainability councils in the various departments within Airframe or creating recognition and clarity when it comes to separating waste. Through the implementation of various initiatives, the collaborative intern will encourage employees to actively contribute to sustainability.

V. Communication strategy

The research reveals that CleverDisplays, departmental newsletters and the NewsApp are most effective as internal communication tools in reaching employees within Airframe. Among the various communication tools offered within the department, these three digital communication tools appeal most to employees. Once the most effective communication tools have been identified, it is vital to determine the content that matches the needs of employees. Employees within Airframe expressed their interest in hearing more on sustainability within KLM in the communication, provided it is conveyed in the desired way. The same aspects regularly emerged in the field research and are elaborated in the following sections.

Consistency, simplicity and repetition

Considering the content of communication tools in general, the study findings indicate that employees require information about sustainability that is consistently presented and easy to comprehend. Moreover, repetition was identified as a crucial element to effectively engage employees and ensure the information resonates with them.

Particularly when it comes to sustainability, providing consistent information is of great importance. Given the diversity of opinions (and preconceptions) on the usefulness of sustainability, disseminating non-contradictory and reliable messaging on this subject is essential. Employees currently feel that they are inundated with irrelevant information. An important point in this regard is that sustainability communication will not be seen as irrelevant, but as useful and meaningful. This requires consistent communication that stands out amidst all other information and matches employees' needs.

Moreover, employees want the information provided to be simple and free of complex and difficult-to-understand terminology. Employees rapidly lose interest when faced with incomprehensible information. Visual communication can play a valuable role in simplifying sustainability-related information provision.

Providing information related to sustainability only once proves to be ineffective, as the information then fails to reach employees. Repetition plays an important role in the effectiveness of sustainability communication. However, it is important to bear in mind that an overflow of sustainability-related information can in turn have the opposite effect. Finding a good balance in the frequency of communication is crucial. This ensures that everyone has the opportunity to absorb the information and simultaneously does not get frustrated by the frequency of the information provision.

Thus, the information that will be communicated should be consistent, simple and regularly repeated. Considering the specific content of the communication medium, employees have needs for a variety of aspects that are further explained below.

Relevance of sustainability

The size and comprehensiveness of the concept of sustainability leads employees to feel a certain distance from contributing to it. To improve employees' attitudes towards sustainability within the organisation, it is important to make sustainability as a phenomenon concrete. This will enable employees to understand its added value when applying sustainability within Airframe. Currently, there is a sceptical view on sustainability among employees, due to awareness of the negative impact of aviation on the environment and the observation that many business activities do not qualify as environmentally friendly. As a result, employees rapidly develop the attitude of "what difference does my personal contribution make?". Thus, there is a lack of awareness about the added value of sustainability within Airframe. This highlights the need to provide more knowledge about the importance of sustainability in general and specifically for Airframe. As it is currently unclear what sustainability can mean for the organisation, the motivation for cooperation is low. It is therefore crucial to provide the right information from a positive angle. To impart more knowledge regarding sustainability, it is initially advisable to focus on simple, attractive information provision.

First, it is important in communication to make the definition of sustainability concrete. Questions like: What exactly is meant by sustainability? What 'type' of sustainability is the focus? And why is it important to become sustainable as an organisation?, are important to ask in order to make visible to employees that sustainability is genuinely important within the department and has the potential to reduce environmental impact. The unfamiliarity with the sustainability objectives set by KLM also requires more clarification for employees. Making the targets concrete for staff by informing them on how they can personally help achieve the targets is crucial. This will clarify the relevance of acting sustainably within the working environment.

Secondly, employees express their interest in seeing the positive impact of acting sustainably. Often, sustainability is approached from a negative perspective, emphasising the possible, negative consequences for the world if humanity does not follow a sustainable course and highlighting what people do wrong that increases climate impact. Communication on the positive impacts can instead encourage participation in environmentally conscious behaviour. Employees value seeing that their efforts result in concrete outcomes and that their efforts thus serve a purpose. By communicating the positive impact of sustainable actions, the results of their actions become visible.

Personal communication

Employees within Airframe emphasise the importance of personalising communication related to sustainability. Given the scope of the concept, employees experience difficulties in identifying concrete opportunities to participate. A significant number of employees believe that their personal contribution to sustainability is negligible, as they feel that their impact on the bigger picture is minimal. Through personalised sustainability communication, employees can become aware of their own ability to reduce climate impact. This can be conveyed in several ways.

First, the influence of employees' individual contribution to sustainability should be emphasised. This requires first identifying the areas in which employees can contribute to sustainability within Airframe. Internal communication should then focus on the influence of these sustainable actions in the working environment on reducing the environmental impact. This could be done by disclosing savings with figures or facts. By highlighting the connection between individual actions and the broader environmental targets, internal communications can empower employees to actively participate in sustainability initiatives and create a more environmentally conscious workplace.

Secondly, internal communication ought to focus on personal work. When employees have a clear understanding of the specific actions they can take to minimize their personal environmental impact at work, they are more likely to demonstrate willingness to cooperate, compared to when the communication regarding sustainability remains general. For instance, when aircraft mechanics become aware of the potential savings if they take five cloths for cleaning aircraft parts instead of ten, this can encourage positive behaviour. By making sustainable action concrete and personal, awareness around this phenomenon can be raised significantly. Personalising internal communication results in higher employee commitment to organisational change. Currently, employees express a limited sense of engagement in sustainability initiatives within the department. Involving them in the strategic plans regarding sustainability and emphasising the significance of their individual contributions can enhance their level of involvement.

Visual communication

The study showed that long texts without visual communication are counterproductive in reaching employees as it fails to capture their attention. When it comes to communication, employees need clear, simple and short but powerful communication. Visual communication is very appealing in this regard, as it is a way of bringing information to employees in an enticing way. This might include images that provide knowledge concerning the significance and individual influence of sustainable actions. For instance, potential savings can be visualised when using mugs instead of plastic or cardboard coffee cups. In addition, short videos could be appealing as well. A key point in communication is to ensure that employees understand the meaning immediately, by conveying the message concretely and as clearly as possible.

The ratio of textual content to visual elements will vary for each communication medium. It is recommended to display short texts with abundant visuals on the CleverDisplays, as employees indicate disengagement when faced with excessive text. Furthermore, it is crucial to maintain the approachability of communication through CleverDisplays to effectively capture employees' attention. Conversely, the NewsApp will feature more extensive text, as it serves the purpose of keeping employees informed about company developments through articles and news updates. Therefore, communication regarding sustainability on the NewsApp will include more background information, taking into account the specific content preferences of employees. The amount of text and visual communication in the departmental newsletters will vary across departments, as plant leaders have the responsibility of disseminating departmental newsletters. Nonetheless, it is essential to consider employees' needs when it comes to conveying information and ensuring its appeal.

Facts

A solid foundation for the relevance of sustainability can be provided through facts. Employees need concrete evidence on the positive impact of sustainability in the working environment. On one hand, employees express a desire for factual evidence to substantiate the importance of contributing to sustainability. Compelling facts regarding sustainability not only capture employees' interest, but also align with their preference for concise yet impactful information. On the other hand, employees are keen on facts as they provide tangible statistics that reflect the individual impact of sustainable actions.

Recognisability

Considering the amount of information employees receive on a daily basis, communication regarding sustainability needs to take the forefront to achieve the desired effect. It is crucial that communication surrounding sustainability gains a sense of familiarity. This familiarity can be enhanced by developing a consistent template specifically for sustainability communication, including a logo and specific colour usage. This way, it captures the attention of employees and they can associate the communication with sustainability at a glance.

To conclude, it can be stated that the key pillars in sustainability communication can be formulated as follows: First, it should be ensured that the substantive message is consistent, straightforward, and reiterated periodically to effectively reach employees. Second, the relevance of sustainability in both external and internal communication should be emphasised, considering that employees may not be sufficiently aware of its significance. Moreover, placing emphasis on individual contribution and influence within the work environment, with the aim of illustrating that each individual is capable of exerting an impact, is considered important. By utilising visual communication methods to convey sustainability and incorporating factual evidence and statistics, sustainability communication can capture employees' attention. Last, establishing a certain level of recognisability is efficient to make sustainability communication stand out. The aforementioned pillars for sustainability are interrelated, underscoring the importance of evaluating future sustainability communication initiatives to determine their compliance with these pillars.

Chapter 7. Conclusion and discussion

7.1 The deployment of suitable communication strategies

This research attempted to answer the main research question which was formulated as follows "*What specific internal communication strategies should be employed to effectively induce sustainable behavioural change among employees of KLM Airframe?*". The research revolved around the central concepts: psychology, sustainability and communication. One important aspect was to take a critical look at people's attitudes and behaviour regarding sustainability changes in the working environment. After all, sustainability implies that changes are going to be made within the organisation in order to reduce environmental impact.

The ADKAR-model by Jeff Hiatt demonstrates how change within organisations can be successfully achieved and it is therefore applicable considering the situation regarding sustainability within Airframe. It involves the following steps: awareness, desire, knowledge, ability and reinforcement. The previous intern noted that *awareness of the need for change* is required and the current study sought ways in which this can be increased by investigating what internal communication strategies should be deployed to achieve this objective. The results revealed that it should be made attractive for employees to contribute to change. This aligns well with the second step in the model: *desire to support the change*. The research indicates the importance of taking employees' needs into account during organisational change.

It is therefore crucial to design the internal communication in a way that appeals to employees and thus makes it attractive for employees to contribute to the change. Employees must develop a desire to contribute to sustainability and the use of suitable communication tools with appropriate content contributes to the process. Considering the internal communication specifically, a number of key aspects emerged during this research to increase employee engagement for sustainability.

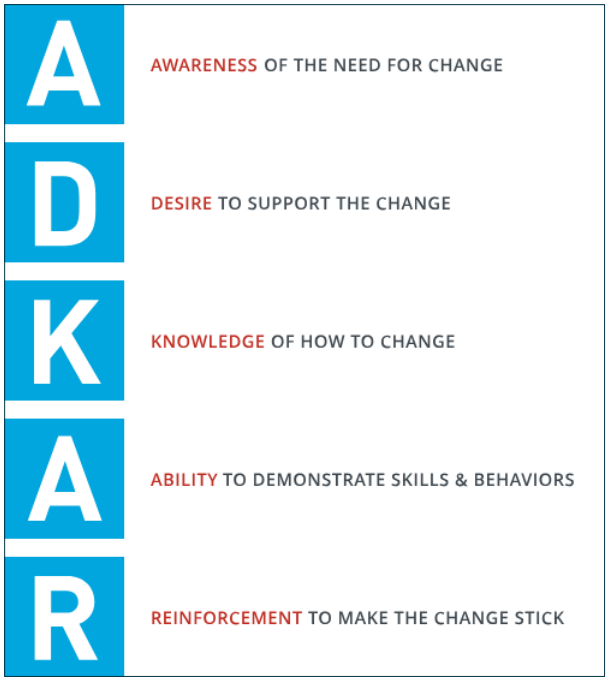
It is vital to deploy specific communication tools for the respective target groups for communicating sustainability. First of all, CleverDisplays appear to be suitable for employees from operations, departmental newsletters for office staff and the KLM NewsApp for both groups. These tools could provide more insight into the knowledge to understand the importance of following a sustainable course, which corresponds to the third step in Jeff Hiatt's model, *knowledge of how to change*. This knowledge should be disseminated in an engaging way through the internal communication. This marks the next phase in Airframe's internal communication efforts.

To achieve the desired effect, insight was gained into the needs of employees when it comes to the content of these specific communication tools. Employees desire consistent and simple communication that is repeated regularly, in order to be confronted with sustainability on a regular basis. As employees indicate that they do not always perceive the value of sustainability in the workplace, it is crucial to concretise in the communication the concept of sustainability and the sustainability targets set by KLM, emphasising the positive impact of sustainability in the working environment. In addition, employees have a need for communication that clearly conveys how their individual contribution affects the bigger picture. And likewise, employees require tools that clearly indicate how they can apply sustainability while performing their personal work. To make the information conveyed through internal communication attractive, employees indicate the importance of visual communication, using illustrations and limited text to convey the message on sustainability. This can be reinforced through facts, as employees would like to see evidence of why acting sustainably is effective. In addition, the attractiveness can be increased by creating a fixed template, a logo and specific use of colour, in order for the communication to instantly catch the attention of employees, subconsciously drawing their attention to the relevant message. Increasing the attractiveness of the means of communication by, for

instance, using eye-catching colours or providing interesting facts with an underlying, sustainable message can also be considered as nudging, by subconsciously attracting employees' attention.

By incorporating the aforementioned internal communication strategies, KLM Airframe can enhance employees' awareness of sustainability by effectively addressing their needs and take this into account while communicating on sustainability.

Figure 9. ADKAR-model of Jeff Hiatt



7.2 Discussion

The research findings provide a clear insight into employee behaviour and attitudes towards sustainability and how to influence them appropriately to encourage environmentally conscious behaviour. To draw a representative picture of suitable, internal communication strategies that should be deployed within Airframe, employees from different subdivisions with a diversity of functions were involved in the study. Throughout the internal analysis, seven employees within Airframe were spoken to: four Continuous Improvement Leads, one Culture Lead, two employees involved in internal communication and one employee involved in sustainability. During the field study, semi-structured interviews took place with a total of 22 respondents: six ground engineers, three warehouse employees, nine office employees, two plant leaders, one Continuous Improvement Lead and one Culture Lead. The diversity of respondents gave a clear insight into employees' wants and needs in the internal communication on sustainability in the working environment. By listening to as many different perspectives on the subject as possible, reliable data was collected that clearly highlighted the way in which the internal communication regarding sustainability should be organised. Although the results often highlighted the same aspects, it would have been even more reliable to include more respondents in the investigation. The scope could have been larger by sending out a questionnaire to employees within Airframe. However, this was deliberately not chosen, as the research dealt strongly with psychological aspects underlying whether or not employees show environmentally conscious behaviour. For this topic specifically, questionnaires would give an overly perfunctory impression and not provide an in-depth understanding into the personal mindset of employees. Therefore, semi-structured interviews were chosen that provided a reliable insight into sustainability within Airframe and attitudes

towards it. Due to the time period of 4.5 months, there was limited time to conduct more interviews. However, the interviews conducted gave an accurate overview of the current state of affairs, as employees indicated they recognised the different elements that emerged from the investigation in their daily work, after I presented the results to the Airframe management (on June 19, 2023) and to the respondents from the study (on June 20, 2023) and after personal conversations afterwards with employees.

During the conduct of the research activities, several adjustments were made with the aim of improving the quality of the research. Interactions with both the supervisors from KLM and the respondents occasionally identified important aspects that required adjustments to optimise the study. In particular, the process of field research and the related analysis proved to be a continuous learning process. Critically evaluating the research and implementing adjustments when necessary demonstrably contributed to the creation of a valid investigation.

At the beginning of my research, the focus was on stimulating and increasing the intrinsic motivation of employees. During a conversation with supervisors from KLM Airframe, we came to the conclusion that awareness is first needed to achieve intrinsic motivation. Critically examining Prochaska's and DiClemente's model (1982), it appears that awareness is indeed needed first, before one feels the motivation from within to make an effective contribution to reducing the ecological footprint. Due to this conclusion, the research questions were adjusted by focusing on creating more awareness among employees rather than increasing the intrinsic motivation. In addition, the focus in the research questions was also specifically on the communication tools, while I found out that in fact the content of the tools have an indispensable role in the internal communication. Therefore, I adapted my research questions by focusing on both aspects, both appropriate communication tools and content, and thus chose to specifically focus on finding adequate internal communication strategies for communicating sustainability within Airframe.

In addition, throughout the conduct of the interviews, it became clear that when I presented my research to the respondents, there were frequent ambiguities regarding the concept of sustainability. Due to the comprehensiveness of the term, some respondents had difficulties in identifying the specific focus of my research when I presented my research. Respondents regularly confused the concept with sustainable employability where the focus is on optimising the work environment to improve employee health. In response to the confusion, I specifically mentioned in subsequent interviews which form of sustainability was the focal point of the study. The confusion that arose on sustainability proved to be a widespread issue within the organisation. The results demonstrated ambiguity on the term and employees emphasised the importance of making the phenomenon more concrete and personal.

Lastly, during the analysis of the transcripts in ATLAS.ti, I progressively adopted a more discerning approach to the coding. As I proceeded with coding the interviews, I came to the realisation that there were instances where I revisited previous transcripts due to identifying noteworthy elements in the interviews that had already been addressed earlier, but which I did not consider to be sufficient important at that time. This experience prompted me to recognise the necessity of incorporating as many codes as possible during the open coding phase, as certain aspects that did not seem significant to me at first turned out to be important.

7.3 Implications

Within the Airframe department, there is limited awareness regarding sustainable practices, despite its growing significance in the airline's vision. The findings of this study indicate a lack of employee engagement in sustainability, resulting in the absence of motivation to participate in environmentally conscious operations. Insufficient internal communication regarding the importance of sustainability and available initiatives has created a disconnect between employees and the concept. Unless this situation changes, sustainability will remain on the sidelines, hindering KLM from achieving its

sustainability goals, as employees play an indispensable role in their attainment. The study emphasises the need for strategic internal communication that effectively appeals to employees and promotes behavioural change with regards to sustainability. By emphasising the positive individual impact and contribution of employees in future sustainability communication, highlighting its relevance of sustainability in the workplace and presenting this through visually appealing content, employees will be more inclined to engage in sustainable practices within the Airframe department. Sufficient opportunities to contribute to a sustainable workplace are imperative in this context.

7.4 Recommendation

The research I conducted demonstrates the necessity of initially raising awareness regarding sustainability in the workplace by deploying appropriate communication tools with corresponding content. Once employees have become more aware of the need for change, it becomes vital to provide sustainable tools that can then aid them in displaying sustainable behaviour. Therefore, the recommendation for a follow-up assignment is to specifically recruit a collaborative intern who will work more practically to prioritise sustainability within Airframe. This can be achieved by introducing sustainable implementations, for example by organising workshops centred on sustainability within Airframe (‘Climate Fresk’), ensuring a clear visibility and recognisability of waste separation bins or by exploring the feasibility of establishing sustainability councils for each unit while critically assessing their viability. Key in this regard is to continue to take into account the diversity of employees by continuing to use and reflect on the different behavioural models before implementing sustainability initiatives. The ultimate objective of this follow-up assignment is therefore to make sustainability more of a priority, fostering its integration withing Airframe and creating more awareness among employees. This endeavour will also facilitate a stronger connection between the sustainability vision and day-to-day operations and lastly, it will contribute to achieving KLM’s 2030 sustainability targets.

The figure on the next page shows the vacancy text sent out as a follow-up to my research. The follow-up job will revolve around the following main interrelated aspects: communication, sustainability and decisiveness.

Figure 10. Follow-up internship assignment

Stage opdracht: Sustainability initiatieven en communicatie binnen Airframe
Help jij Airframe te verduurzamen? Ben jij zelfstandig, communicatief sterk, geïnteresseerd in human behaviour en analytisch? Dan ben jij misschien wel onze nieuwe Sustainability stagiair. Voor de afdeling Airframe zijn wij op zoek naar een student die ons kan helpen om duurzaamheid en duurzaam handelen een stap verder te brengen, om te kunnen voldoen aan de duurzaamheidsdoelstellingen van KLM en KLM E&M.
Je helpt Airframe bij de implementatie van een duurzame werkomgeving door de juiste middelen te ontwikkelen en beschikbaar te stellen die leiden tot een grotere bijdragen van medewerkers aan duurzaamheid.

Wat ga je doen?
Je maakt duurzaam handelen een integraal onderdeel van Airframe. Dit doe je enerzijds door initiatieven op duurzaamheid te realiseren, en anderzijds door communicatie het bewustzijn bij medewerkers te vergroten. Communicatie zal in het Nederlands geschieden.
Je maakt een communicatieplan, én voert dit uit.
Je zorgt ervoor dat duurzaamheid concreet en tastbaar wordt voor medewerkers door de betrokkenheid op duurzaamheid te vergroten.
Je creëert een uitnodigende sfeer waarin medewerkers zich aangemoedigd voelen om gezamenlijk bij te dragen aan het behalen van de duurzaamheidsdoelstellingen van KLM E&M.

Wie zoeken wij?
Een stagiair die drie hoofdaspecten van deze opdracht op een unieke wijze kan verbinden en daar synergie uit kan halen. Dit zijn: communicatie – sustainability – daadkracht.
De daarbij gevraagde competenties zijn:
- Interpersoonlijke sensitiviteit
- Initiatief
- Gedrevenheid
- Plannen en organiseren
- Realisatie van doelen
- Verzamelen van informatie
- Werken in teamverband
- Organisatiebewustzijn

Waar land je?
Airframe is een onderhoudsdivisie van KLM Engineering & Maintenance, waar het onderhoud van vliegtuigen plaatsvindt. Op Schiphol met ca. 1200 collega's, wereldwijd met ca. 2000 collega's. De scope van de opdracht is Airframe op Schiphol.
Tijdens je opdracht werk je samen met collega's van Airframe, maar je stemt ook af met collega's van de E&M centrale organisatie en met andere stagiairs e/o afstudeerders om van elkaar te leren en integraliteit te zoeken.
Je komt te werken bij The MRO (Maintenance, Repair and Overhaul) Lab, onderdeel van het Improvement Team bij KLM E&M, dat zich bezighoudt met innovatie, duurzaamheid en andere verbeterprojecten binnen KLM E&M.

Wat bieden wij?
KLM biedt jou een onvergetelijke ervaring in een dynamische organisatie. Tijdens deze stage kun je jezelf ontwikkelen op persoonlijk en professioneel vlak. Daarnaast biedt deze stage je de mogelijkheid om je netwerk uit te breiden, omdat je met veel verschillende KLM-medewerkers aan de slag gaat. Via het MRO-lab studentennetwerk helpen we je met het opbouwen van je netwerk en het regelen van diverse excursies binnen de KLM-organisatie. Daarnaast ontvang je een stagevergoeding.

Last, the current research demonstrates that it is crucial, in future academic research as well, to focus not only on the change itself, but on the various contexts in which these changes occur. The established internal communication strategy within KLM may be successful within this context to raise sustainability awareness, while it may possibly have the opposite effect in another business environment. This again highlights the importance of paying increasing attention to employee engagement and the emotional aspect in changes and the underlying factors that result from certain behaviours which is highlighted in the model of Ajzen and Fishbein (2010). Therefore, the main focus in similar follow-up studies would be the different psychological and behavioural perspectives to gain a deep understanding of how individuals and specific groups respond to change and how behaviour unfolds within different contexts. In addition, it would be useful in future research to further elaborate on the concept of nudging. The motivation technique provides opportunities to implement organisational change in a noncoercive way and is therefore interesting to explore further in future academic research.

Afterword

The previous months were dedicated to conducting research, collecting and analysing data and the composition of the master thesis. An intensive yet instructive period, where I experienced both professional and academic growth. Throughout my internship at KLM Airframe, I had the privilege of gaining valuable insights into what it is like to be employed by a large company and I witnessed the challenges associated with implementing corporate change due to divergent opinions and attitudes among employees towards the respective change.

Through my research, which involved participatory observations and semi-structured interviews with employees, I found myself captivated by human behaviour and its formation. I came to realise that employees attitudes towards sustainable change are influenced by a multitude of factors, including their educational background and personal experiences related to sustainability. The scope of my research allowed me to delve deep into the diverse sub-units of Airframe and engage with employees across various locations, making my internship a truly enriching and diverse experience.

The challenging part of my research was to engage in conversations with employees who held opposing views on sustainability and regarded it as redundant. The occasionally fierce responses required me to handle the situation in an understanding and calm manner, as I realised that showing understanding and allowing employees to express themselves is more effective than opposing them. In these conversations in particular, I found it very interesting to explore the roots of their resistance towards environmentally conscious actions. I therefore found the diversity of employees and their behaviour very intriguing and it provided valuable input for my research.

In conclusion, I am very pleased with the final outcome of this thesis. The internship and research unfolded precisely as I had envisioned and I am grateful for the opportunity to conduct this research for KLM. It has been an unforgettable period, marked by personal and professional growth, valuable connections and I came to realise that the past years, both in my bachelor and master, have prepared me sufficiently to start my professional career.

Elise de Vries

Breda, July 2023.

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List of Appendices

Appendix I Conversations CILs and CL (notes)

Doel: Algemeen beeld vormen van de verschillende divisies binnen Airframe om een idee te krijgen van hoe de afdelingen in elkaar zitten, wat de precieze werkzaamheden zijn en of duurzaamheid leeft binnen de afdeling, door het voeren van gesprekken met Continuous Improvement Leads en een Culture Lead.

1. Planning, Scheduling and Fleet control (PSFc) – Dinsdag 28 februari 2023

Algemene informatie

- Medewerkers PSFc zijn gewend aan veranderingen.

Duurzaamheid

- Duurzaamheid op zichzelf zou geen moeite moeten kosten, ook al wordt dit vaak wel zo gezien. Eigenlijk zou het meer moeite moeten kosten om er *niet* aan bij te dragen → Hoe kan dit worden overgebracht op werknemers?
- Verkeerde motivatie → Wanneer men zegt dat ze er alleen maar aan willen bijdragen als iedereen het doet.
- Goede motivatie → Iemand ziet de waarde ervan in. Het is goed voor het milieu, goed voor de toekomst, goed voor de aarde.

Duurzaam bewustzijn

- SFC (Scheduling Fleet Control) (Planning) → Er is *bewustzijn* dat de uitvoering van een A-check of C-check in het buitenland weer een extra vlucht kost, maar er wordt nog niks mee gedaan → Er wordt wel nagedacht om de checks op locatie (Schiphol) uit te voeren, alleen *tijd* speelt hierbij een rol (duurt langer).
- Duurzaam bewustzijn onder medewerkers kan worden gestimuleerd door duidelijk te maken wat het *effect* is van duurzaam handelen → Afvalscheidingsbakken kunnen demotiverend werken wanneer werknemers zien dat de verschillende afvalzakken op één hoop worden gegooid wanneer ze door de vrachtwagen worden opgehaald; de motivatie is weg zodra werknemers dit zien, niet wetende dat deze zakken later weer op een depot worden gescheiden. → *Gebrek aan kennis* kan hierdoor zorgen voor demotivatie om bij te dragen aan duurzaamheid. → Kennis met betrekking tot duurzaamheid kan door communicatiemiddelen worden gegeven.
- Demotivatie om te participeren in duurzaamheid kan ook voortkomen vanuit het besef dat de luchtvaart op zichzelf al vervuilend is → '*Wat maakt mijn bijdrage dan uit?*' → Druppel op een gloeiende plaat.

Duurzame communicatiemiddelen

- Vrijwel geen communicatiemiddelen die duurzaam bewustzijn kunnen stimuleren.
- Binnen de afdeling is er communicatie met betrekking tot de duurzaamheidsdoelstellingen van KLM → Een van deze communicatiemiddelen is bijvoorbeeld de KLM nieuwsapp (gerichte informatie per unit/bedrijfsonderdeel, wat is er gaande?) → Hier wordt ook het een en ander gedeeld over duurzaamheid; Wat hierin mist volgens X: de link naar *'Waar doen we het voor?'*. Doen we het omdat elk bedrijf het doet?
- Duurzaamheid kan ook worden benaderd door te laten zien wat er gebeurt als we er *niet* aan bijdragen: hier komt het *effect* ook weer in naar voren → Duurzaam opereren draagt bij aan een succesvolle organisatie die kan blijven voortbestaan, maar kiezen we ervoor duurzaamheid achterwege te laten dan… (effect!) → Op deze manier kunnen werknemers zich bewust worden van duurzaamheid, omdat de toegevoegde waarde ervan naar voren komt.
- Communicatiemiddel om het duurzaam bewustzijn te vergroten moet: Luchtig zijn; Te maken hebben met kennisopbouw (denk aan het voorbeeld van de afvalscheidingsbakken); Laten zien

wat de persoonlijke bijdrage/het effect is → Om op deze manier werknemers aan het denken te zetten.
- Medewerkers binnen Airframe zijn (over het algemeen) wat meer technisch georiënteerd, dus zij zullen dan ook een wat meer technische uitleg willen in de communicatiemiddelen (→ Interviews moeten dit verder uitwijzen).

Conclusie: Belangrijk dat de communicatiemiddelen het *effect* laten zien van duurzaam handelen en de persoonlijke bijdrage hierin benadrukken. De kennis vergroten door de inzet van communicatiemiddelen werkt effectief. 'What's in it for me?' (wat hebben werknemers eraan?) → middelen moeten aansluiten bij de doelgroep.

2. Preventive plant, Corrective plant & Maintenance support (PCM) – Dinsdag 28 februari 2023

Algemene informatie
- Bestaande uit drie units: Preventive Maintenance (alles wat planbaar is), Corrective Maintenance (kort cyclus werk) en Maintenance Support (GOV Team: specifiek onderhoud aan het regeringsvliegtuig, Exterior cleaners: zorgen dat alles schoon blijft, Plaatwerkers: constructiewerk bijv. schade aan de romp, Motorwisselteam en Cabinewerkzaamheden).
- Bestaande uit 400 à 500 medewerkers.
- Over het algemeen hebben de medewerkers een gemiddelde leeftijd van boven de 56. Er is wel wat verjonging binnengekomen, maar die zijn vaak snel weer weg vanwege betere aanbiedingen of vinden het werk te statisch bij de Preventive unit (veel repeterend werk).

Duurzaamheid
- Binnen de afdeling willen ze zo min mogelijk papier gebruiken, ze willen het gebruik van kwasten en olie terugdringen, ze hergebruiken materialen, ze denken na over plastic reductie en ze zijn overgegaan op ledverlichting.
- De tijdsdruk van de operatie kan ook ten koste gaan van duurzaam handelen → Er zijn afspraken gemaakt om op tijd te leveren, alles staat in verband met elkaar; daarom is de doorlooptijd erg belangrijk → Deze druk kan erin resulteren dat duurzaamheid achterwege wordt gelaten, zodat het niet ten koste gaat van de tijd.
- De KLM duurzaamheidsdoelstellingen worden weinig besproken op de werkvloer.

Duurzaam bewustzijn
- Bewustzijn duurzaamheid in de hangaars door de ontwikkeling van bepaalde apps, bijvoorbeeld de Good House Keeping App → Werknemers worden zich hierdoor bewust van het feit dat ze de hangaars moeten opruimen, dat ze het afval goed moeten scheiden.
- Er wordt erg wisselend omgegaan met duurzaamheid: de een is er wat serieuzer mee bezig dan de ander → Maar X denkt wel dat er bewustwording is.

Duurzame communicatiemiddelen
- De nieuwsbrief zou een geschikt communicatiemiddel kunnen zijn om werknemers meer bewust te maken van duurzaamheid.
- Performance meetings werden in het verleden gehouden, waarbij teams werden gechallenged op bepaalde doelstellingen die ze zelf bedacht hadden → Zou ook kunnen werken als communicatiemiddel om duurzaam bewustzijn te kunnen bevorderen.
- Er zijn een aantal CleverDisplays te vinden op de afdeling. Elke teamruimte heeft een CleverDisplay → Er wordt hierop soms content gedeeld die betrekking heeft op duurzaamheid. → Of er echt naar gekeken wordt is de vraag: interviews met werknemers zijn daarom belangrijk.

- Werknemers hebben een IPad → Kan dit ook worden ingezet als communicatiemiddel om duurzaam bewustzijn te stimuleren? Zitten werknemers daar op te wachten?

Conclusie: Duurzaam bewustzijn onder medewerkers is erg verschillend. *Tijdsdruk* speelt mogelijk een rol in het wel of niet duurzaam handelen. Het is daarom belangrijk om specifiek te kijken welke communicatiemiddelen aansluiten bij de doelgroep, rekening houdend met hun werkzaamheden.

3. Line Maintenance Schiphol – Woensdag 1 maart 2023

Algemene informatie

- De afdeling bestaat uit 230 werknemers → De gemiddelde leeftijd is vrij hoog, aangezien er bij LMS veel werknemers zitten met ervaring.

Duurzaamheid

- Binnen Engineering & Maintenance zijn er zo'n 80 à 90 auto's → Deze voertuigen worden volop geëlektriseerd → Dieselauto's gaan eruit.
- Twee elektrische oliewagens → Dit alles om de doelstelling over de CO_2-emissie te halen → Heeft niet alleen voordelen voor het milieu, maar ook voor de werknemers → Vanuit deze benadering kunnen communicatiemiddelen ook worden ingezet: Wat zijn de voordelen van duurzaamheid voor medewerkers? Wat levert het op voor hen?
- Bij LMS wordt plastic gescheiden van de rest → Door zelfgemaakte containers op de afdeling neer te zetten → Deze containers zitten vaak overvol → Hier komt verandering in.
- Plastic bekers bij de automaat zijn vervangen door mokken.
- Er wordt gebruik gemaakt van IPads om zo min mogelijk papier te gebruiken ('paperless') → Alle GWK's en technici hebben een IPad → De meeste werknemers vinden deze werkwijze gemakkelijker, slechts een aantal (5 à 10 medewerkers) geven de voorkeur aan papier.
- Maak kenbaar dat iets schadelijk is en bied een alternatief → Op deze manier mensen 'meenemen' in duurzaamheid.
- Er wordt onvoldoende aandacht besteed aan de KLM duurzaamheidsdoelstellingen → Mogelijke oorzaak: het is een container begrip, de doelen moeten concreet zijn voor elke unit → Het liefst zo klein mogelijk, zodat het effect zichtbaar is voor werknemers en dit bespreekbaar maken.
- Daarnaast zou er meer gedaan kunnen worden om bijvoorbeeld de verlichting te verduurzamen.

Duurzaam bewustzijn

- Bewustzijn rondom duurzaamheid is er → Echter moet het wel op de juiste wijze worden gefaciliteerd, zodat mensen eraan kunnen bijdragen (overvolle plastic containers werken hier niet aan mee) (Kan ook worden gelinkt aan het onderzoek van X waarin wordt beschreven dat werknemers zich niet altijd bewust zijn van het juiste gebruik van de milieueilanden → Kennis, zie gesprek X, en een juiste facilitatie zijn hierin van belang → Kan worden gecreëerd door de implementatie van communicatiemiddelen).

Duurzame communicatiemiddelen

- Stand-up: Elke donderdag is er een stand-up van een half uur waarin alle projecten, alles wat speelt op de afdeling en alles vanuit de councils wordt besproken → Ook duurzaamheid komt hier zo nu en dan aan bod.
- Nieuwsbrief: Wordt elke vrijdag verstuurd.
- CleverDisplay: Aanwezig in de teamruimtes → Hier wordt wel eens iets gemeld over duurzaamheid.

- X is van mening dat duurzame communicatiemiddelen daadwerkelijk overkomen bij werknemers: duurzaamheid is zo'n actueel thema en het bewustzijn is aan het groeien.
- Zorg voor een goede facilitatie van duurzame communicatiemiddelen, want op deze manier gaan mensen erin mee.

Conclusie: Duurzaamheid moet op zo'n manier worden gecommuniceerd dat het effect zichtbaar is voor medewerkers. De toekomstige communicatiemiddelen moeten duurzaamheid zo concreet mogelijk maken, waardoor het gemakkelijker wordt eraan bij te dragen.

4. Material, Equipment & Facilities (MEF) – Maandag 6 maart 2023

Algemene informatie
- Continuous Improvement Lead gaat over de processen.
- Culture Lead gaat over het gedrag.

Duurzaamheid
- Binnen MEF kan er veel worden verbeterd op het gebied van duurzaamheid.
- Binnen E&M is er eerder een begin gemaakt met duurzaamheid. X en een (voormalig) blackbelt hebben het gehele proces van aankoop van materialen tot en met de levering aan de hangars in kaart gebracht (hierbij hebben ze gekeken naar: waar zit nu veel afval?) → Dit proces (en de knelpunten) zijn gepresenteerd aan X: aan de hand hiervan vertelde hij dat de eerste stap hierin awareness is → Hier is over gebrainstormd.
- Eén idee dat uit deze brainstormsessie was gekomen waren QR-codes: Sodexo (facilitaire dienstverlening, e.g. afval) had aangegeven dat het sorteren van het afval een probleem was. Werknemers doen vaak de hele doos in een bak in plaats van deze dozen eerst plat te maken. Er wordt per container betaald, dus daarom is het ook van belang om niet de doos in het geheel in de bak te gooien. Toen ontstond het idee om een soort journey te maken door heel E&M met allemaal verschillende QR-codes, waarna medewerkers na het scannen een (grappig) filmpje te zien krijgen die mensen aansporen om de dozen eerst plat te maken (kan ook worden gezien als voorbeeld van nudging) → Voor de uitvoering hiervan is ook budget gekomen, maar doordat de blackbelt wegging is dit idee eigenlijk nooit uitgevoerd.
- Issues binnen MEF: Leveranciers stoppen kleine onderdelen in een grote doos (redenen: gevoelige onderdelen of materialen/ standaard doos); veel plastic.
- Proces MEF: Goederen komen binnen in Hangaar 14 bij CS, daar krijgen ze een ingangscontrole (de doos wordt opengemaakt, alles wordt bekeken en als alles goed is gekeurd wordt het naar het magazijn van MEF in Hangaar 11 gebracht) → Het wordt hierna in het magazijn bij MEF uitgepakt en dit resulteert in veel afval.
- In de contracten met de leveranciers staat wel waar het afval aan moet voldoen, maar er staat niet bij dat de leverancier zo min mogelijk materiaal moet gebruiken voor de verpakking → Er was veel onvrede bij de werknemers bij CS die werkzaam waren bij de ingangscontrole over het vele verpakkingsmateriaal → De hoeveelheid heeft er zelfs wel eens voor gezorgd dat het onderdeel is weggegooid, omdat het onderdeel simpelweg niet te vinden was door de grote hoeveelheid verpakkingsmateriaal.
- Organisational behavioural management → Mensen worden beloond/ er worden complimenten gegeven → Kan ook worden gebruikt om duurzaam gedrag te stimuleren → Duurzaamheid benaderen vanuit positiviteit.

Duurzaam bewustzijn
- Bij de vraag of duurzaamheid leeft op de afdeling was er onduidelijkheid → Geeft waarschijnlijk aan dat het niet erg speelt op de afdeling.

- Bewustzijn kan worden gecreëerd door mensen kennis te geven over duurzaamheid en de gevolgen van hun acties te laten zien (bijvoorbeeld de kosten van een volle afvalbak, terwijl deze kosten ook minder zouden kunnen zijn door het platmaken van de dozen).

Duurzame communicatiemiddelen

- Binnen MEF wordt er gebruik gemaakt van verschillende communicatiemiddelen in het algemeen:
    - De nieuwsapp wordt gebruikt binnen MEF → Er is vrijwel nog nooit iets gemeld over duurzaamheid.
    - Tweewekelijkse mail → Nieuws over de afdeling → Dit wordt wel gelezen én er wordt op gereageerd.
    - SharePoint.
- QR-codes boven afvalbakken (mogelijkheid).
- MEF Spirit Council → Duurzaamheid zou hier kunnen worden behandeld.

Overige zaken

- Het is belangrijk om rekening te houden met het feit dat binnen dit onderzoek mensen van verschillende soorten levels/scholing betrokken zijn → Communicatiemiddelen moeten kunnen aansluiten bij de verschillende type werknemers.
- Het is ook goed om rekening te houden met het feit dat niet iedereen beschikt over dezelfde systemen → Een app kan niet voor iedereen werken, omdat niet iedereen over een IPad beschikt.
- X is ook geïnteresseerd in het retourproces → MEF levert materialen aan LMS, maar niet alle materialen worden gebruikt → Materialen worden geleverd met een pakbon, waarop staat wat het materiaal is, het materiaalnummer en het registratienummer (alles is gecertificeerd) → Alles wat in een vliegtuig zit moet terug te leiden zijn naar een certificaat → De pakbon wordt momenteel vaak weggegooid, waardoor het retourproces niet altijd goed gedaan kan worden, want ze weten niet op welke registratie het moet worden teruggestort → Dit gedrag van medewerkers kan uiteindelijk leiden tot afval.
- Meelopen MEF magazijn (10.03.23): Inslag en retour kunnen interessant zijn voor het onderzoek.

Conclusie: Onduidelijkheid over het bewustzijn rondom duurzaamheid binnen MEF. Er wordt weinig over gecommuniceerd. Er wordt gebruik gemaakt van verschillende communicatie-middelen, dus dit biedt mogelijkheden voor het creëren van duurzaam bewustzijn.

Appendix II Observation scheme

Participatory observation- KLM Airframe		
Date: **Time:**	**Department:** **Method:** Systematic observation	
Observation criteria	**Observations**	**Comments**
Conduct (verbal/non-verbal) employees		
Sustainable implementations are clearly visible (it is convenient for employees to utilise)		
Employees use sustainable implementations (and if not, ask “why not?”)		
Employees are aware of sustainable practices		
Employees utilise communication tools in their work activities		
There are (in)visible obstacles in actually operating sustainably		
Detailed description of observation:		

Appendix III Participatory observations

Participerende observatie MEF - KLM Airframe	
Datum: Vrijdag 10 maart 2023 **Tijd:** 09.30 uur	**Afdeling:** Material, Equipment & Facilities (MEF) **Methode:** Systematische observatie
Gedetailleerde beschrijving observatie	
Bij binnenkomst in het magazijn van Material, Equipment & Facilities in Hangaar 11 krijg ik een rondleiding van X. We beginnen bij het deel van het magazijn waar alle aanvragen binnenkomen voor materialen. Vervolgens worden de nodige materialen bij elkaar verzameld. Het valt me op dat de materialen apart worden verpakt in een plastic zak. Wanneer ik hierna vraag geeft X aan dat er alleen meerdere onderdelen in één verpakking mogen zitten als het gaat om precies dezelfde onderdelen. Verschillende onderdelen die worden gebruikt voor hetzelfde vliegtuig moeten los van elkaar worden verpakt en worden dus niet in dezelfde verpakking geplaatst. X geeft aan dat hij van mening is dat dit anders moet, omdat er veel plastic wordt gebruikt voor het verpakken van de onderdelen. Er worden namelijk meerdere plastic zakken gebruikt voor het verpakken van één type onderdeel. Daarnaast wordt er voor elk onderdeel een pakbon uitgeprint, wat leidt tot een toename in het papierverbruik. Vervolgens lopen we door naar een aantal stellingen waar diverse bakken staan met onderdelen die de verschillende vliegtuigen van KLM nodig hebben. Vanaf daar gaan we door naar de plek waar bestelde onderdelen binnenkomen en worden uitgepakt door medewerkers om de inhoud te controleren. X vertelt dat onderdelen vaak dubbel worden besteld, omdat medewerkers niet door hebben dat diezelfde onderdelen al zijn besteld door iemand anders. Hierdoor moeten onderdelen vaak worden teruggestort, wat het proces niet bepaald duurzaam maakt, door een toename in het papierverbruik. X vertelt dat er papieren worden uitgeprint met informatie over het onderdeel (certificering) wanneer de onderdelen binnenkomen, zodat medewerkers weten met welk onderdeel ze te maken hebben. Wanneer de onderdelen worden teruggestort worden er nogmaals papieren geprint terwijl dit niet nodig was geweest als de onderdelen niet dubbel waren besteld. X is van mening dat het aantal geprinte papieren drastisch verlaagd kan worden wanneer er bij het terugstorten van de onderdelen geen papier meer zou worden geprint. Het creëren van bewustzijn onder medewerkers over het belang om eerst te controleren of bepaalde onderdelen nog op voorraad zijn in plaats van deze onderdelen gelijk te bestellen kan dit papierverbruik verminderen. Communicatiemiddelen die iets over het duurzame effect hiervan vertellen zouden mogelijk kunnen leiden tot minder papier op de afdeling. Daarnaast valt het mij op dat er verschillende afvalbakken staan op de afdeling, waaronder een voor plastic en karton. X vertelt dat er onduidelijkheid heerst over het scheiden van afval, doordat medewerkers vaak niet weten in welke bak bepaald soort afval thuishoort. Zo worden kartonnen koffiebekers vaak in de kartonnen bak gegooid, terwijl de binnenkant van deze beker plastic bevat, waardoor de beker niet in de kartonnen afvalbak thuishoort. Toen dit werd verteld, realiseerde ik me dat er eigenlijk een gebrek aan kennis is om als medewerkers binnen MEF te kunnen bijdragen aan duurzaamheid. Doordat medewerkers bijvoorbeeld niet weten wat wel of niet in bepaalde afvalbakken mag, wordt het lastig om daadwerkelijk bij te dragen aan duurzaamheid. Het inzetten van communicatiemiddelen die de kennis over duurzaam handelen vergroot en die aansluiten bij de medewerkers kan ertoe leiden dat er minder papier en plastic wordt verbruikt, doordat er bewustwording wordt gecreëerd over het belang van verduurzaming.	

Participerende observatie LMS - KLM Airframe	
Datum: Maandag 13 maart 2023 **Tijd:** 09.00 uur	**Afdeling:** Line Maintenance Schiphol (LMS) **Methode:** Systematische observatie

Gedetailleerde beschrijving observatie

Bij binnenkomst in het kantoor van LMS stelt de Lead GWK, die mij deze dag begeleidt, mij voor aan het team van GWK's, waar hij deze dag verantwoordelijk voor is. Ik leg kort uit waar mijn onderzoek over gaat, zodat het team hier ook van op de hoogte is. De Lead GWK geeft een korte rondleiding op de afdeling, waardoor het duidelijk wordt hoe de afdeling in elkaar zit en welke functies werknemers bekleden. Het valt mij op dat er veel CleverDisplays te vinden zijn op de afdeling. Vrijwel elke transparante ruimte heeft een CleverDisplay waar zowel algemene als KLM-gerelateerde informatie op wordt gedeeld. Daarnaast zie ik in de keuken een afvalbak staan speciaal voor plastic, wat laat zien dat er wordt gedaan aan afvalscheiding op de afdeling. Ik vraag me af of werknemers 'extra moeite' zullen doen om met hun plastic afval naar de keuken te lopen en het daar weg te gooien. Na de rondleiding gaan X en ik in het midden van de afdeling zitten bij hoge tafels en laat X mij op een blad papier het systeem zien waar LMS mee werkt. Het systeem geeft een duidelijk overzicht van de shifts, de werknemers, hun functies, taken en op welke vluchten de verschillende teams staan. Al snel pakt X de IPad erbij waar exact hetzelfde blad op te zien is. Ik vraag mij af wat de toegevoegde waarde is van het uitgeprinte papier. Daarna neemt hij mij en een andere werknemer die werkzaam is in Hangaar 11 mee met een KLM busje naar een platform op Schiphol waar diverse vliegtuigen van KLM staan opgesteld. We gaan een vliegtuig in en ik krijg meer te horen over hoe de verschillende knoppen in de cockpit werken. Daarna gaan we terug naar het kantoor en wachten we kort op het vliegtuig dat vanuit Brazilië op Schiphol arriveert. Ik loop mee met twee GWK's en als eerste wordt de onderkant van het vliegtuig, de wielen en de remmen gecontroleerd. Als vrijwel alle passagiers zijn uitgestapt mogen de technici het vliegtuig in. Als eerste wordt er in de cockpit gekeken naar de aantekeningen die de piloot heeft gemaakt in een boekje over defecten in het vliegtuig en wordt er gekeken of dit gelijk of op een later tijdstip opgelost kan worden. Een van de defecten is de wc in het vliegtuig die verstopt zit. Deze wordt vervangen door de technici. Ze hebben een gereedschapskist en doeken bij zich. Een van de monteurs geeft aan een extra zak mee te nemen waar hij de vuile doeken ingooit na gebruik. Hij doet dit zodat de doeken chemisch gereinigd en hergebruikt kunnen worden in plaats van ze bij het afval weg te gooien. Hij geeft aan dat hij een van de weinige is die de doeken hergebruikt. Veel andere werknemers gooien de doeken na gebruik bij het afval. De gereedschapskist in zijn geheel wordt samen met de doeken naar het oliemagazijn gebracht, waarna deze gereinigd worden. Ik vraag me af waarom de gehele kist daarheen wordt gebracht, terwijl lang niet al het gereedschap is gebruikt en vraag me af of het misschien duurzamer zou zijn om alleen het gebruikte gereedschap naar het oliemagazijn te brengen. Nadat het vliegtuig is gecontroleerd en er technisch onderhoud heeft plaatsgevonden, gaan we weer terug naar het kantoor van LMS. Het is opvallend dat iedereen op de afdeling gebruikt maakt van mokken wanneer zij koffie pakken in plaats van gebruik te maken van plastic of kartonnen bekers. Wanneer ik hierna vraag, blijken de plastic en kartonnen bekers uit het automaat te zijn gehaald met het oog op duurzaamheid, waardoor mensen, wanneer ze koffie willen, wel gebruik moeten maken van een mok. In het kantoor houd ik nog een aantal interviews met werknemers om verdere informatie te vergaren als input voor het onderzoek.

Figure 11. Pier F Schiphol

Figure 12. Waste separation

Participerende observatie PCM I - KLM Airframe	
Datum: Dinsdag 28 maart 2023 **Tijd:** 09.00 uur	**Afdeling:** Preventive, Corrective & Maintenance support (PCM) **Methode:** Systematische observatie

Gedetailleerde beschrijving observatie

Bij binnenkomst in een kantoor in Hangaar 11 zie ik verschillende grondwerktuigkundigen aan een tafel zitten. Ik ben op zoek naar de Lead GWK, maar X is niet aanwezig op het kantoor. De werknemers geven aan dat er een verschuiving heeft plaatsgevonden in de werkzaamheden, waardoor het werkaanbod sinds de dag ervoor flink is afgenomen. Doordat medewerkers meer tijd hebben, is een werknemer bereid om een interview te doen voor mijn onderzoek. We lopen naar een andere ruimte waar ik X een aantal vragen stel. X geeft tijdens het interview aan dat er veel plastic in de rondte gaat en dat de milieueilanden niet altijd even efficiënt werken. Hij stelt voor om na het interview een rondje te doen in de hangaar om mij het een en ander te laten zien met betrekking tot plastic en afvalverwerking. Na het interview lopen we naar een stelling met meerdere vakken waar bestellingen (vliegtuigonderdelen) in worden gedaan vanuit MEF, zodat GWK's deze onderdelen kunnen gebruiken bij het technisch onderhoud van het vliegtuig. Het valt mij op dat zelfs het kleinste onderdeel in meerdere plastic zakjes is verpakt en daarbij heeft elk onderdeel een of meerdere papieren met details over het onderdeel. X is van mening dat er te veel plastic wordt gebruikt en vindt dat dit duurzamer kan. Daarna lopen we naar de milieueilanden en ik zie dat er verschillende bakken zijn voor verschillende materialen waaronder voor olieblikken, oliefilters en vetpatronen. Het lijkt mij een functionele manier van afvalscheiding. Maar wanneer ik in de bakken kijk, zie ik dat er bij sommige bakken ook ander afval in is gegooid, zoals een plastic koffiebekertje in de bak voor sealant/lijm/verf. X zegt dat het dit keer meevalt met het verkeerde afval in de bakken en geeft aan dat hij het wel erger heeft gezien. Hierna lopen we door naar de ruimte waar het afval tijdelijk neer wordt gezet voordat het wordt opgehaald. X wijst naar een aantal lege, op elkaar gestapelde emmers voor vet die daar zomaar door medewerkers zijn neergezet. Omdat werknemers niet weten waar ze met deze lege emmers heen moeten, worden ze maar ergens neergezet en wordt er niet meer naar omgekeken geeft X aan. Een betere communicatie hierover zou kunnen helpen. Ik zie grote vaten staan met vervuilde olie. X vertelt dat het onduidelijk is hoe vol een vat exact is, waardoor het af en toe voorkomt dat het vat overstroomt wanneer werknemers er olie ingooien, waardoor het terechtkomt op de grond. Ook dit is niet bevorderlijk voor de duurzaamheid. Het zou volgens X handig zijn dat men kan zien hoe vol de vaten zitten om op deze manier te voorkomen dat de vaten overstromen en het op plekken terecht waar het niet terecht zou moeten komen. We lopen de ruimte uit en zien een medewerker bij het milieueiland staan. De medewerker is foto's van het type afval op het milieueiland aan het plakken ter verduidelijking van welke materialen in welke bak moeten. We maken kennis en de medewerker vertelt hoe het milieueiland tot stand is gekomen en uit zijn onvrede over de hele manier waarop hij het milieueiland uiteindelijk in zijn eentje heeft moeten ontwikkelen. De medewerker is bereid om een interview te doen, dus hij vertelt mij het een en ander over hoe het eraan toe gaat op de afdeling qua werkzaamheden, duurzaamheid en communicatie.

Figure 13. Airplane parts

Figure 14. Milieueiland I

Figure 15. Incorrect waste separation

Participerende observatie PCM II - KLM Airframe	
Datum: Woensdag 29 maart 2023 **Tijd:** 09.00 uur	**Afdeling:** Preventive, Corrective & Maintenance support (PCM) **Methode:** Systematische observatie

Gedetailleerde beschrijving observatie

Bij binnenkomst in een kantoor in Hangaar 11 word ik voorgesteld aan de Lead GWK die mij op deze dag zal rondleiden. Er zitten verschillende medewerkers in het kantoor. Ze zitten achter computers, zijn met hun IPad of mobiel bezig of zijn aan het communiceren met elkaar. Ik leg kort uit aan de Lead GWK wat ik precies zal onderzoeken in mijn onderzoek en wat het doel ervan is. Ik kijk rond of ik duurzame implementaties zie, maar die zijn vrijwel niet zichtbaar. Ik zie als enige aparte bakken staan waarin het papier wordt gescheiden. Voor de rest wordt het overige afval in één bak gegooid. Ook zie ik dat medewerkers gebruik maken van plastic bekers wanneer ze hun koffie drinken. Daarna lopen we door zowel Hangaar 11 als Hangaar 12 en krijg ik een beter beeld van de locatie. X geeft aan dat er cultuurverschillen zijn waar te nemen kijkend naar Hangaar 11 en 12 in de manier van doen. In Hangaar 11 werken met name de wat oudere collega's met meer ervaring en in Hangaar 12 de wat jongere medewerkers. Sinds corona zijn de hangaars samengegaan, waardoor er sprake is van kruisbestuiving, maar hier is veel onvrede over. X geeft mij verdere informatie over hoe de werkzaamheden eraan toegaan en hoe de processen verlopen. Hij is van mening dat er op het gebied van duurzaamheid nog veel te verbeteren valt. Op het moment dat wij in Hangaar 12 staan, gaat de schuifdeur open om een vliegtuig naar binnen te rijden. X geeft aan dat dit onnodig is op dit moment, omdat het vliegtuig nog niet klaarstaat. Volgens X is dit niet duurzaam, omdat het dan alleen maar kouder wordt in de hangaar, waardoor het alleen maar langer duurt voordat het weer is opgewarmd nadat de schuifdeuren weer zijn gesloten. X is van mening dat de schuifdeuren pas open moeten gaan, wanneer het vliegtuig ook daadwerkelijk klaarstaat om naar binnen te worden gereden. Hierna lopen we verder naar de kantoren en ruimtes in Hangaar 12. Voordat we naar binnen zien valt het me op dat er drie banners staan die informatie geven over verschillende onderwerpen, zoals over een nieuwe organisatievorm, informatie over Hangaar 12 zelf en over de fysiotherapie waar medewerkers gratis gebruik van kunnen maken bij lichamelijke klachten. Bij het laatste hebben medewerkers de medewerkers de mogelijkheid om een QR-code te scannen om een afspraak te maken. Wanneer we de kantoren en ruimtes binnenlopen zitten er verschillende medewerkers op hun mobiel/IPad. Er hangt een ontspannen, rustige sfeer. X geeft aan dat medewerkers deze ruimtes vaak gebruiken om pauze te houden, maar X is hier niet tevreden over. Hij vindt het te dicht bij het werk zitten, doordat medewerkers uitzicht hebben op de vliegtuigen. Hij is van mening dat écht pauze houden er dan niet inzit, omdat men dan bezig blijft met werkzaamheden. Hij vindt het jammer dat de pauzes niet meer zo zijn als vroeger toen iedereen, van schoonmakers tot leads, op hetzelfde moment pauze hielden en bij elkaar kwamen. Het sociale aspect mist tegenwoordig op de afdeling. We lopen verder en het valt mij op dat er geen prullenbakken te zien zijn die afval scheiden. Het wordt allemaal in één bak gegooid. Ook wordt er gebruik gemaakt van plastic bekertjes in het koffiezetapparaat in plaats van dat iedereen zijn eigen mok/beker heeft. X geeft aan dat dit puur gemak is voor medewerkers, omdat medewerkers tijdens hun werkzaamheden anders hun beker de hele tijd ergens neer moeten zetten in plaats van dat ze gewoon het plastic bekertje gemakkelijk kunnen weggooien. Maar toch geeft hij aan dat het inderdaad wel erg veel plastic is als je bedenkt dat elke medewerker zo'n 3 à 4 keer per dag koffie haalt. Verder vertelt X dat in een aantal gangen bij de kantoren in Hangaar 12 de lichten pas aangaan als er iemand rondloopt, dus op die manier wordt er wel weer rekening gehouden met duurzaamheid. We lopen de kantoren weer uit en gaan verder naar een andere ruimte waar een collega bezig is met de processen om de vliegtuigen van Schiphol Centrum naar de Hangaars te brengen. Hij geeft aan dat de processen niet altijd zo duurzaam zijn, vanwege een slechte communicatie. Zo staat er buiten de hangaars een vliegtuig te wachten om naar binnen te mogen, maar deze mag niet naar binnen, omdat er nog catering aan boord is, wat eigenlijk bij Schiphol Centrum al uit het vliegtuig had moeten worden gehaald. X geeft aan dit ook dit niet duurzaam is, doordat er nu een vrachtauto moet komen om de catering op te halen, waardoor het proces én wordt vertraagd én het zorgt voor extra uitstoot. Hierna lopen we weer verder door de hangaars en laat X mij zien wat er gebeurt met het afval. Er zijn verschillende milieueilanden te zien in de hangaars. Met tekst en plaatjes wordt er

gecommuniceerd wat in welke bak moet. Het is opvallend dat er ook ander afval in de bakken wordt gegooid, terwijl dit niet de bedoeling is. Volgens X weten medewerkers niet wat het proces is nadat zij het afval in de bakken gooien. Er is weinig bewustzijn en kennis over de consequenties wanneer men onderdelen in verkeerde bakken gooit. X is van mening dat het niet verkeerd is om medewerkers meer kennis te geven over het gehele proces van afvalverwerking. Wanneer spullen in de verkeerde bakken komen, worden bakken namelijk afgekeurd, wat extra geld kost, maar ook zeker niet duurzaam is. Tijdens een later gesprek met een medewerker geeft X aan dat de locatie van de milieueilanden ook niet handig is, omdat men veel moet lopen om het afval weg te gooien. Verduurzaming moet volgens deze medewerkers gemakkelijk gemaakt worden en geen 'extra moeite' kosten. Hierna lopen we door naar de plek waar het afval tijdelijk wordt opgeslagen voordat het wordt opgehaald. Ik zie diverse tonnen staan met afval. Ook staan er tonnen met olie en andere benodigdheden voor het vliegtuigonderhoud. Daarna lopen we verder en doen we een rondje door baai 3 waar iemand vanuit een extern bedrijf bezig is met een drone. X geeft aan dat dit initiatief in de toekomst zal worden geïmplementeerd op Schiphol Centrum, omdat deze uitvinding de processen bij het onderhoud gemakkelijker maakt, maar ook is het duurzamer. Nu komen de vliegtuigen naar de hangaars voor technisch onderhoud, maar door gebruik te maken van drones kunnen de vliegtuigen die bijvoorbeeld problemen hebben aan de bovenzijde met drones op Schiphol Centrum worden geïnspecteerd, in plaats van ze naar de hangaars te brengen. Hierdoor zijn er minder verplaatsingen van kisten nodig van Schiphol Centrum naar de hangaars, waardoor de uitstoot ook wordt beperkt. We lopen weer terug naar het kantoor waar we de dag zijn begonnen en X laat mij zien welke communicatiemiddelen hij gebruikt tijdens zijn werkzaamheden. We gaan achter een computer zitten en hij pakt zijn IPad erbij. Hij laat verschillende systemen zien die worden gebruikt op een reguliere werkdag. Ook Intranet staat op de IPad, maar hij geeft aan dat hij met name informatie leest die specifiek betrekking heeft op de afdeling PCM waar hij werkzaam is. Ook geeft hij aan dat er een Good House Keeping app is. Volgens X moeten er elke shift twee personen worden aangewezen die dan tijdens de shift verantwoordelijk zijn voor het netjes houden van de hangaar, wat ook bevorderlijk is in het zo duurzaam mogelijk opereren (bijvoorbeeld om ervoor te zorgen dat afval in de daarvoor bestemde bakken terechtkomt). X laat weten dat dit vrijwel nooit gedaan wordt, waardoor de hangaar vaak rommelig wordt en werknemers niet weten waar ze bepaalde materialen kwijt kunnen. Dit bevestigt hetgeen wat ik de dag ervoor had waargenomen in de hangaar, waarbij verschillende emmers vet op elkaar waren gestapeld en op een willekeurige plek waren neergezet, omdat men niet wist waar ze dit afval heen moesten brengen, aangezien hier geen speciale bak voor was.

Figure 16. Milieueiland II

Figure 17. Milieueiland III

Observatie PSFc - KLM Airframe	
Datum: Dinsdag 30 mei 2023 **Tijd:** 09.30 uur	**Afdeling:** Planning, Scheduling and Fleet control (PSFc) **Methode:** Systematische observatie

Gedetailleerde beschrijving observatie

Bij binnenkomst in het Operations Control Centre (OCC) wil ik de trap oplopen, maar wordt mijn aandacht gelijk getrokken door twee borden met daaronder een ton aan de linkerzijde van de trap. Het linker bord geeft informatie over de CO_2-uitstoot als gevolg van vliegen. Het geeft weer wat CO_2 exact inhoudt en manieren waarop deze uitstoot verlaagd kan worden. Het rechter bord geeft informatie over de ambitie van KLM om de uitstoot met 5% te verminderen in 2030 ten opzichte van 2005. Er worden vier ambities besproken om dit doel te kunnen bereiken. Onder de borden staat een ton met de vraag: 'Weet jij hoeveel brandstof KLM gebruikt?'. Het middel in zijn geheel is bedoeld om informatie te geven over de uitstoot dat wordt veroorzaakt door de luchtvaart en de maatregelen die worden getroffen vanuit KLM om de uitstoot te verminderen. Ik realiseer mij dat dit ook een communicatiemiddel is dat wordt ingezet om een boodschap over te brengen. Ik merk dat de hoeveelheid tekst op de borden mij ervan weerhoudt om de gehele tekst te lezen, waardoor ik eigenlijk alleen de in het blauw geschreven koppen lees. Hierna loop ik de trap op en loop ik naar de kantine. Ik zie dat de kantine verschillende bakken heeft, zodat werknemers hun afval kunnen scheiden. Eenmaal aangekomen in het kantoor staat er een groep werknemers te praten bij het koffiezetapparaat. Het doet denken aan een ontmoetingsplek, waar werknemers even een korte pauze nemen van hun werk om kort bij te kletsen met andere collega's. Het valt mij op dat veel werknemers gebruik maken van de plastic bekers die uit het koffiezetapparaat komen. Daarnaast zie ik op de kantoren verschillende papierbakken staan bij de bureaus van werknemers, echter is dit het enige afval dat wordt gescheiden van het restafval. Dit gegeven is ook bevestigd in de interviews die ik heb gehouden bij PSFc. Wat ik opvallend vind in het OCC is dat er vrijwel nergens CleverDisplays te zien zijn. Een groot verschil met LMS, waar in elke transparante ruimte een scherm was opgehangen. Het enige communicatiemiddel dat ik zie zijn de computers, waar vrijwel elke werknemer die ik zie op het kantoor achter zit. Ik hoor van een werknemer van PSFc dat er binnen de afdeling niet veel bewustzijn is voor duurzaamheid, zoals het scheiden van afval of het minder gebruiken van papier. Wel is PSFc de eerste unit van Airframe die een Sustainability Council heeft opgericht, waarbij het doel is om duurzaamheid een grotere rol te laten spelen op de afdeling. Zo verschaffen zij nieuwsbrieven of factsheets die specifiek ingaan op duurzaamheid en wat er gedaan wordt en gedaan kan worden om gezamenlijk milieuvervuiling tegen te gaan, zowel in het dagelijks leven als in de werkomgeving. Er wordt mij verteld dat een van de successen van de Sustainability Council het introduceren van Fruit op het Werk is, waarbij PSFc elke dinsdag wordt voorzien van vers fruit om de gezondheid van medewerkers te stimuleren. Er wordt binnen deze council niet alleen gekeken naar duurzaamheid om de milieu-impact te verkleinen, maar ook naar duurzame inzetbaarheid, waarbij ze een zo gezond mogelijke werkomgeving willen creëren, zodat medewerkers gezond en tevreden naar het werk kunnen gaan. Ik vind het opvallend dat er voor de rest binnen het OCC niet iets erop duidt dat duurzaamheid een grote rol speelt. Naast het bord met informatie over de uitstoot heb ik verder geen banners of andere communicatiemiddelen gezien die iets vertelden over het belang van duurzaamheid.

Figure 18. Knowledge on CO_2 emissions

Observatie Hangaar 14 - KLM Airframe	
Datum: Vrijdag 14 april **Tijd:** 09.00 uur	**Afdeling:** Hangaar 14 **Methode:** Systematische observatie
Gedetailleerde beschrijving observatie	
Tijdens mijn bezoek aan Hangaar 14 wordt mij verteld dat dit een van de grootste gebouwen van Nederland is. In de hangaar wordt het langdurig onderhoud van vliegtuigen gedaan. In vergelijking met Hangaar 11 en Hangaar 12, waar met name kortstondig onderhoud wordt gedaan, gaat het in Hangaar 14 om het grote onderhoud, zoals het vervangen van alle zitplaatsen van een vliegtuig. Ik neem plaats in de kantine en het valt mij op dat de lampen aanstaan, terwijl de zon volop schijnt door de grote ramen die aanwezig zijn in de kantine. Het feit dat de lampen aanstaan heeft dan ook geen nut, aangezien de zon al voldoende licht geeft. Wanneer ik uit het raam kijk, kijk ik neer op een dak dat volstaat met zonnepanelen. De elektriciteit die hiermee wordt opgewekt blijkt weer gebruik te worden in de hangaar zelf. In de kantine valt het mij verder op dat er veel verpakkingen in plastic zijn gewikkeld en ik vraag mij af of dit niet op een andere manier kan. Ik zie dat werknemers die plaatsnemen in de kantine koffie pakken uit de automaat en gebruikmaken van de bekers die hieruit komen. Alleen in de kantine vallen mij al een aantal dingen op die duurzamer zouden kunnen worden. Wel zie ik een paar CleverDisplays hangen. Daarna loop ik naar het nieuwe gedeelte van Hangaar 14 waar kantoren zijn gevestigd. Het kantoor heeft een open, moderne en rustige uitstraling en het is duidelijk dat hier dan ook in is geïnvesteerd. Ik zie een afvalbak staan waar plastic, GFT, plastic bekers en restafval wordt gescheiden. Ik loop de trap af en ga de hangaar in en ik loop naar een kantoor dat is gelegen midden in de hangaar. In het kantoor hangt één CleverDisplay, waar een verscheidenheid aan informatie op wordt getoond. Het kantoor is in vergelijking met het nieuwe kantoor even verderop donker. In het kantoor valt het mij op dat bij de bureaus bakken staan om papier te scheiden. Een werknemer vertelt mij dat dit eigenlijk het enige is dat hier wordt gescheiden. Ik vind het opvallend dat in het ene kantoor wel mogelijkheden zijn tot afvalscheiding, terwijl dit in de andere kantoren, in dezelfde hangaar, niet het geval is. Dezelfde werknemer vertelt mij dat zij probeert rekening te houden met datgene wat zij print. Ze wil zo min mogelijk printen om het papierverbruik laag te houden. Na de observatie ben ik met name verbaasd over de verschillen die ik heb waargenomen in de hangaar als het aankomt op duurzaamheid. Op de ene plek in de hangaar wordt er veel meer meegedaan in vergelijking met andere gedeeltes van de hangaar. Ik ben dan ook van mening dat hier één lijn in moet worden getrokken, al zal dit ook ingewikkeld zijn vanwege de afhankelijkheid van verschillende partijen. **Figure 19.** Waste separation bins 	

Appendix IV Interview guide

Interview guide – KLM Airframe	
Administrative data	
Name of interviewer (I):	Elise de Vries
Residence:	Breda, Noord-Brabant
Education:	MSc Cultural Geography and Tourism
University:	Radboud Universiteit Nijmegen
ID-code:	s1088450
Name of respondent (R):	(Anonymous)
Airframe department:	
Place and date:	Schiphol, Noord-Holland
Start time:	
End time:	
Introduction interview	
• Introducing myself	
• Research objective	
• Interview objective	
• Interview topics	
• Duration of the interview	
• Confidentiality aspect	
• Permission to record the interview	
• Questions	

Start recorder

Start interview
Topic 1. Persoonlijke informatie respondent
• Zou u uzelf kort willen voorstellen? (Anoniem) • Op welke afdeling bent u werkzaam? • Wat is uw functie en wat zijn uw werkzaamheden binnen deze afdeling?
Topic 2. Duurzaam bewustzijn – Dagelijks leven
• In hoeverre bent u zich bewust van uw persoonlijke invloed op het milieu? • Kunt u mij vertellen wat duurzaamheid voor u persoonlijk betekent? • In hoeverre ziet u de noodzaak in van een duurzame levensstijl? • Wat motiveert u om bij te dragen aan duurzaamheid? • Via welke kanalen wordt u in het dagelijks leven geconfronteerd met het belang van duurzaamheid? • Welke communicatiemiddelen werken voor u motiverend om daadwerkelijk duurzaamheid toe te passen in het dagelijks leven?
Topic 3. Duurzaam bewustzijn – Werkomgeving
• Wat zijn de KLM E&M duurzaamheidsdoelstellingen volgens u? • In hoeverre bent u zich bewust van uw invloed op het milieu bij de uitvoering van de dagelijkse werkzaamheden?

• Ziet u het belang (de toegevoegde waarde) in van het toepassen van duurzaamheid binnen de afdeling? (Waarom wel/niet?) • Op welke manier wordt u in de dagelijkse werkzaamheden geconfronteerd met duurzaamheid? • Op welke manier wordt u vanuit KLM gemotiveerd om duurzaamheid toe te passen in de dagelijkse werkzaamheden? • Mist u iets in de werkomgeving op het gebied van duurzaamheid? (Mogelijk iets wat voor u motiverend kan werken om bij te dragen aan duurzaamheid?) • Is er verschil in de manier waarop u omgaat met duurzaamheid op de werkvloer in vergelijking met thuis?
Topic 4. Communicatiemiddelen
• Van welk(e) communicatiemiddel(en) maakt u (het meeste) gebruik om op de hoogte te blijven van ontwikkelingen binnen KLM? (Kunt u twee voorbeelden hiervan noemen?) • Welke communicatiemiddelen worden er gebruikt op de afdeling om u te informeren over duurzaamheid? • Welke communicatiemiddelen zouden u aanspreken om geïnformeerd te worden over duurzaamheid? • Wat voor inhoud zou een communicatiemiddel voor u moeten bevatten om bewuster te worden van duurzaamheid? (bijv. *kennis* over klimaatverandering of duurzaamheid, *effect* van duurzaam handelen, *consequenties* van niet-duurzaam handelen etc.) • Wat is uw mening over de effectiviteit van het gebruik van CleverDisplays voor het overbrengen van informatie? • Zou u het interessant vinden om meer te lezen over duurzaamheid op CleverDisplays? • Welke manieren van communicatie zijn volgens u ineffectief om te gebruiken binnen Airframe?
Topic 5. Afronding
• Kort samengevat kan ik concluderen dat… Heb ik dit goed begrepen? • We zijn aan het einde gekomen van dit interview. Hartelijk dank voor uw medewerking. Heeft u verder nog vragen?

Stop recorder

Appendix V Sustainable ideas

Gedurende het veldonderzoek zijn er tijdens de gespreken met medewerkers waardevolle, duurzame ideeën naar voren gebracht die het overwegen waard en kunnen bijdragen aan het verkleinen van de milieu-impact. Het is raadzaam om als KLM Airframe deze ideeën te onthouden voor een mogelijke implementatie in de toekomst.

Afvalscheidingsbakken
Op veel kantoren binnen Airframe hebben medewerkers niet de mogelijkheid om hun afval te scheiden (enkel papier en restafval). Door het faciliteren van afvalscheidingsbakken worden medewerkers gestimuleerd om hun afval in de juiste bak te gooien.

Besparen op verlichting
Medewerkers geven aan dat de verlichting vaak onnodig aanstaat in de verschillende ruimtes binnen Airframe (kantines, kantoren, werkplaatsen). Op het moment dat er geen werknemers aanwezig zijn of natuurlijk licht voldoende is, staat de verlichting vooralsnog aan. Er zou flink bespaard kunnen worden als hier bewuster mee om zou worden gegaan.

Computerschermen
Vaak blijven computerschermen aanstaan, terwijl de computers niet worden gebruikt. Ook vergeten medewerkers vaak aan het einde van de dag om hun computer uit te zetten. Om energie te besparen is het van belang om computerschermen uit te zetten.

Duurzaam vervoer
Medewerkers binnen Schiphol-Oost moeten regelmatig van het ene gebouw naar het andere gebouw vanwege afspraken. Veel medewerkers pakken de auto om van de ene plek naar de andere plek te gaan. Het gebruik van FlickBikes zou gestimuleerd moeten worden om de uitstoot op het terrein te beperken. Daarnaast zou carpoolen ook uitkomst bieden, omdat ook dit bijdraagt aan het beperken van de uitstoot, doordat er minder auto’s heen en weer hoeven te rijden.

Eten kantine
In de verschillende kantines bij Airframe zijn er weinig vegetarische alternatieven en daarnaast zitten veel voedingsmiddelen verpakt in plastic. Het aanbieden van duurzame alternatieven die goedkoper zijn, zou medewerkers (onbewust) kunnen motiveren in het maken van duurzamere keuzes in de kantine. Ook zou er gekeken kunnen worden naar mogelijkheden om etenswaren op een duurzamere manier te verpakken om het plasticgebruik omlaag te brengen.

Etiketteringen/pictogrammen scheidingsbakken
Medewerkers hebben regelmatig aangegeven dat ze het onduidelijk vinden welk afval in welke afvalbak hoort. Hierdoor komt het afval vaak in de verkeerde bakken terecht, wat problemen oplevert bij de afvalverwerking. Een duidelijke herkenbaarheid over het verschil qua afvalbakken en wat waar in moet zou kunnen helpen om het scheidingsproces te vergemakkelijken. Het plakken van etiketteringen kan medewerkers helpen bij het afval scheiden.

Hangaar deuren
Een aantal medewerkers hebben aangegeven dat de hangaar deuren vaak onnodig openstaan, wat leidt tot een enorme koude of warmteverlies. Vaak kan het nog een lange tijd duren voordat een vliegtuig naar binnen of buiten wordt gereden door de pushback truck, terwijl de deuren al lange tijd openstaan.

Medewerkers bewustmaken van het aantal kubieke gas dat hiermee wordt verspild, kan ertoe leiden dat werknemers hier bewuster mee omgaan en de deuren niet onnodig open laten staan.

Hergebruik doeken
Vliegtuigmonteurs, zowel op Schiphol Centrum als op Schiphol-Oost, gebruiken doeken voor de afhandeling van een vliegtuig. Deze doeken worden vaak uit gemak gelijk weggegooid na gebruik, terwijl ze ook kunnen worden ingeleverd bij het oliemagazijn die ze vervolgens chemisch reinigt, zodat de doeken weer hergebruikt kunnen worden. Een duidelijk beleid voor het hergebruik van doeken kan ervoor zorgen dat er minder materiaal wordt verspild. Daarnaast zouden de weggooidoeken die momenteel nog worden gebruikt in Hangaar 11 moeten worden afschaft om single-use producten tegen te gaan.

Hergebruik doosopvulling
De dozen waar sommige vliegtuigonderdelen in verpakt zitten zijn gevuld met opvulchips ter bescherming van de onderdelen. Momenteel wordt deze opvulling gelijk weggegooid nadat de onderdelen zijn uitgepakt, terwijl deze opvulchips bij het uitbestedingsteam van MEF weer hergebruikt zou kunnen worden voor het verpakken van onderdelen naar het buitenland. Momenteel bestellen zij deze opvulchips, terwijl zij dit materiaal net zo goed zouden kunnen hergebruiken vanuit de verpakkingen die binnenkomen. Om de opvulchips her te gebruiken zou een stofzuiger uitkomst bieden. De stofzuiger zuigt de chips op en komt terecht in een knapzak, waarna het uitbestedingsteam de opvulchips weer kan hergebruiken.

Papierverbruik verminderen MEF – IPads
De aanschaf van tablets op de afdeling MEF zou het papierverbruik kunnen verlagen. Op dit moment wordt er veel papier gebruikt om bonnen weg te sturen en spullen in het magazijn in te boeken. Op de tablet zouden de bonnen op kunnen komen te staan, die medewerkers kunnen wegwerken, waardoor medewerkers niet genoodzaakt zijn om papier te gebruiken.

Plastic bekers automaten
Op veel locaties binnen Airframe komen er nog steeds plastic bekers uit de koffieautomaten. Op deze manier worden werknemers niet gestimuleerd om een eigen mok aan te schaffen. Door simpelweg geen plastic (of kartonnen) bekers meer aan te bieden, zullen medewerkers zich genoodzaakt voelen om een mok aan te schaffen.

Plasticverbruik verminderen MEF – Aparte bak
Vliegtuigonderdelen worden momenteel apart verpakt in plastic zakken voordat ze naar de desbetreffende afdeling worden gestuurd. Om het plasticverbruik te verminderen, zouden er aparte bakken moeten komen waar de onderdelen voor vliegtuigen inkomen. Eén medewerker binnen Airframe had ooit voorgesteld om aparte bakken te maken voor de verschillende delen van het vliegtuig (bijvoorbeeld lang, dwars, staart, motor 1, motor 2). De medewerker had een berekening gemaakt van de hoeveelheid plastic dat hiermee kon worden bespaard en kwam uit op ongeveer drie à vier ton plastic per jaar.

Plasticverbruik verminderen MEF – Recyclebare zakken
De plastic zakken die worden gebruikt voor het verpakken van vliegtuigonderdelen zouden mogelijk hergebruikt kunnen worden. Er zou gebruik kunnen worden gemaakt van hersluitbare plastic zakken. Op deze manier kan worden bespaard op het plastic. Ook zou een duurzame oplossing zijn om gebruik te maken van composteerbaar plastic in plaats van single-use plastic.