

MASTER

Hybrid working: what do employees want?

Exploring hybrid working preferences of government employees using conjoint analysis : At the Dutch Ministry of the Interior and Kingdom Affairs

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**In partial fulfillment of the requirements for the degree of
Master of Science in Operations Management & Logistics**

Hybrid working: what do employees want?

Exploring hybrid working preferences of government employees using conjoint analysis

At the Dutch Ministry of the Interior and Kingdom Affairs

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Anne Munnich, June 2022

Executive summary

This master thesis is the result of a project at the Ministry of the Interior and Kingdom Affairs (BZK) in the Netherlands, which is responsible for protecting the Dutch democracy and ensuring citizens can live in affordable, safe, and sustainable housing.

Problem description - Due to insights gained from working from home during the COVID pandemic, BZK wants to change its way of working into a hybrid way of working. This means that employees will get the opportunity to work both from home and in the office. BZK wants to gain as many benefits as possible from hybrid working and avoid the negative consequences of working from home, such as diminished organizational commitment or social isolation. Thus, they want to investigate their employees' preferences for hybrid working approaches.

Research goal and questions - The scope of this research was limited to a selection of policy workers because these kinds of workers are considered ideal hybrid workers. Additionally, this selection was made because they are all located in the same building, had a sufficient number of employees, and had been involved in experiments with hybrid working. The research goal was to investigate the employees' preferences regarding hybrid working while taking into account their time-spatial fit. In this research, time-spatial fit is defined as the choices employees make regarding their work times, locations, and places to perform optimally at work while meeting their private demands.

This resulted in the following research question:

“What are the preferences of BZK employees for the approach of hybrid working to optimize their time-spatial fit?”

Research methodology - This research used conjoint analysis to investigate employees' preferences. Conjoint analysis is a quantitative research method, often used in marketing research to quantify consumers' values for components of products or services. For example, when investigating consumers' preferences for electric vehicles, possible components could be the driving range or the charging time of a vehicle. The levels over which the driving range could vary could be 300km, 500km, and 750km. The procedure followed for conjoint analysis is shown in Figure 0.1.

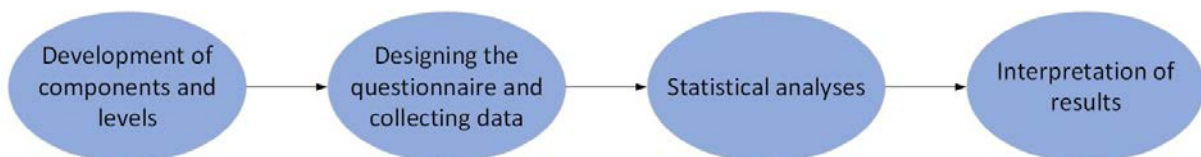


Figure 0.1 – Procedure conjoint analysis

Figure 0.2 illustrates the conceptual model used in this research. This model shows how demographic and work characteristics influence the choice of levels within components. The set of components results in a chosen approach that affects an employee's time-spatial fit.

Data collection took place using questionnaires that were sent out to employees of six different departments. The final sample size consisted of 263 employees. The data was analyzed using a counting analysis, multinomial logit analysis, Hierarchical Bayes analysis, latent class analysis, and some additional analyses such as a Chi-Squared analysis and a one-way ANOVA with a Tukey HSD posthoc test.

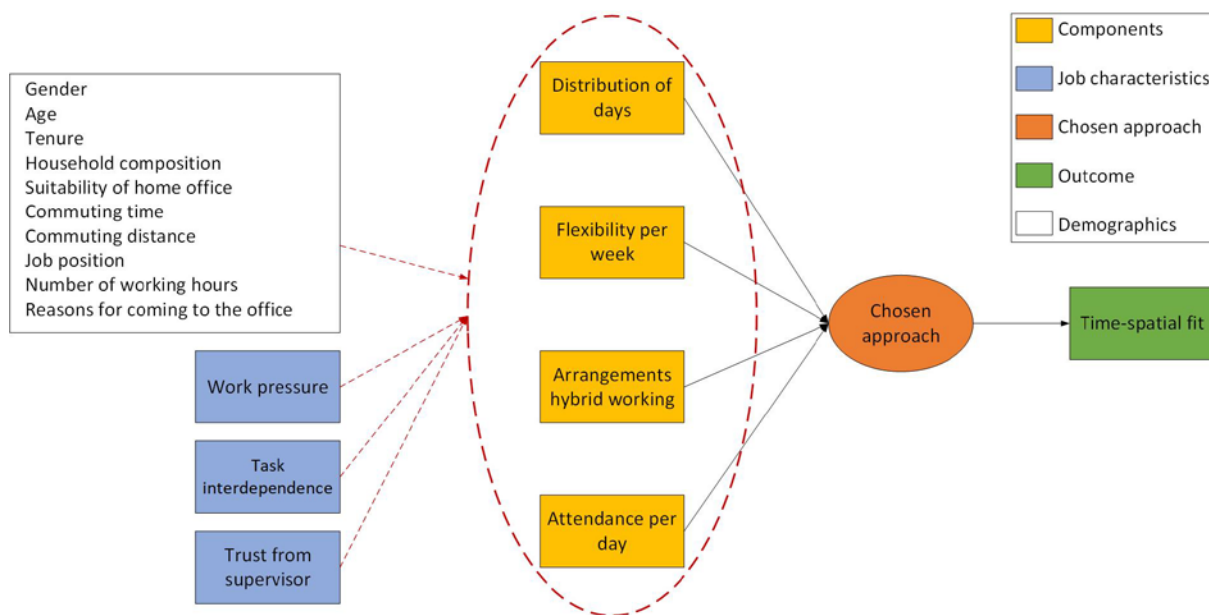


Figure 0.2 – Conceptual model

Results of the research - The results of this study showed that four components of a hybrid working approach could be identified, each with two to five different levels. In addition, the impact the components had on choosing an approach was examined, which was in this case the component ‘*Distribution of days*’. Moreover, the most preferred level per component was investigated. The results are summarized in Table 0.1, which shows the highest impact score and most preferred level(s) in bold.

Table 0.1
Results of components and their levels

Components	Impact score	Levels
<i>Distribution of days</i>	67.80	- Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office
<i>Flexibility per week</i>	5.57	- Fixed days at the office/home - Days at the office/home differ per week
<i>Arrangements hybrid working</i>	14.56	- Maximum freedom to choose where I work - Team arrangements without obligations - Team arrangements with flexibility to deviate - Team arrangements that everyone has to stick to
<i>Attendance per day</i>	12.08	- All day at the office - Part of the day at the office - Different each time

Based on the analyses, four groups of employees with similar preferences could be identified, each with their own characteristics. These results are summarized in Table 0.2. All four groups consistently preferred the level ‘*Team arrangements with flexibility to deviate*’ most. Furthermore, both Group 1 and Group 3 preferred an approach in which they would be working 50% from home and 50% from

the office. They differed in the degree of flexibility on when to be present in the office. The most contrasting preferences could be found between Group 2 and Group 4. Whereas Group 2 preferred to stay working from home most of the time, Group 4 wanted to work in the office for 75% of the time. In addition, the degree of flexibility on when to be present differed completely. In terms of employee characteristics, Group 1 and Group 2 consisted mostly of older employees, without (resident) children and long tenure. Group 3 consisted mostly of younger employees with younger children, who have not been working at BZK for a very long time. Lastly, Group 4 consisted of younger employees, without (resident) children, who less often had access to a suitable home office and just started working at BZK. Group 4 considered all reasons for coming to the office important. Both Group 1 and Group 3 considered most reasons important but Group 2 considered all reasons for coming to the office less important. The groups did not differ significantly on gender, commuting time and distance, working hours, job function, work pressure, and trust from supervisor.

Table 0.2
Groups of employees and their characteristics

	Preferred approach	Dominant employee characteristics
Group 1 (27.1%)	<ul style="list-style-type: none"> - 50% home, 50% office - Fixed days at the office/home - Team arrangements with flexibility to deviate - All day at the office 	Older employees without (resident) children who have been working at BZK for a long time (10+ years), and think most reasons for coming to the office that have been presented to them are important, with the exception of personal circumstances.
Group 2 (30.0%)	<ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Days at the office/home differ per week - Team arrangements with flexibility to deviate - Different each time 	Older employees without (resident) children who have been working at BZK for a long time (10+ years), and think most reasons for coming to the office (e.g., collaboration with colleagues or learning from each other) are not that important.
Group 3 (30.4%)	<ul style="list-style-type: none"> - 50% home, 50% office - Days at the office/home differ per week - Team arrangements with flexibility to deviate - Different each time 	Younger employees with younger children who have not been working at BZK for a long time (2-5 years), and think most reasons for coming to the office that have been presented to them are important, with the exception of personal circumstances.
Group 4 (17.9%)	<ul style="list-style-type: none"> - 25% home, 75% office - Fixed days at the office/home - Team arrangements with flexibility to deviate - All day at the office 	Younger employees who less often have a suitable home office without (resident) children, who have just started working at BZK (<2 years). They think all reasons for coming to the office that have been presented to them are important.

Furthermore, two scenarios were developed and matched with the preferences of the four identified groups. Scenario 1 was a scenario in which employees work 50% from home and 50% in the office. Scenario 2 was a scenario in which employees work 75% from home and 25% in the office. The preference scores for the scenarios can be found in Figure 0.3, where a higher score indicates a higher preference.

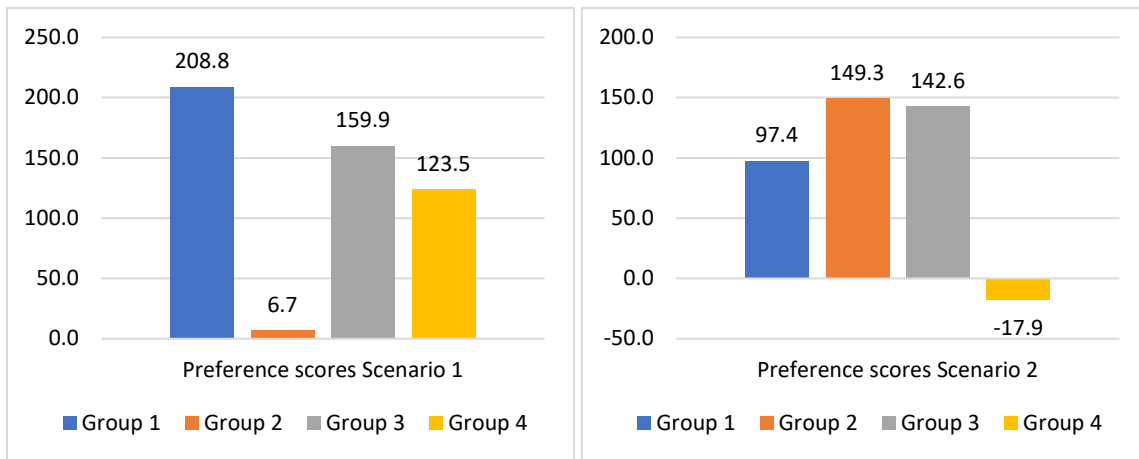


Figure 0.3 – Preference scores Scenario 1 (50% home/50% office, left) and 2 (75% home/25% office, right)

Lastly, a scenario was created when employees were allowed to have one fixed day of working from home per week, as was the norm pre-COVID. The preference scores per group are presented in Figure 0.4.

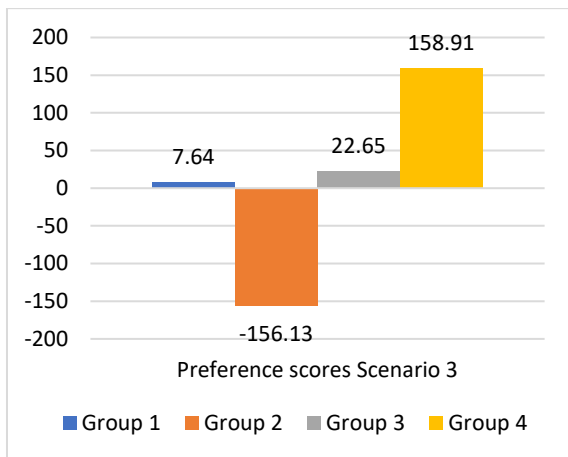


Figure 0.4 – preference scores Scenario 3

Discussion of the findings - This research demonstrated that employees prefer to keep on working from home regularly and want to maintain some flexibility on when to be present in the office. Moreover, employees want to make work arrangements with their team but want to have some flexibility to deviate. An explanation for these preferences could be that employees have gotten used to the increased flexibility they experienced when working from home during the pandemic. It was found from the different groups of employees, that the majority of these employees would prefer to work 50% from home and 50% in the office, being both Group 1 and Group 3. These groups differed in employee characteristics, which therefore could not give an explanation for these preferences. However, employees within these groups considered most reasons for coming to the office important, which likely explains why they want to work 50% in the office. Then, there were two groups with contrasting preferences. Group 2 consisting of older and more experienced employees who would prefer to keep on working from home most of the time, and Group 4 consisting of younger employees who just started working and preferred to work more in the office. An explanation for these differences could be the differences in established networks within the organization and differences in the familiarity with work practices and organizational culture. An examination of the three scenarios makes it clear that the majority of the employees would be dissatisfied when going back to a pre-COVID situation (scenario 3). A likely reason for this is that employees have gotten acquainted with the

benefits of working from home. This indicates that hybrid working is here to stay. In contrast, both Scenario 1 and Scenario 2 satisfy most employees. However, for each of the scenarios, one group of employees will be dissatisfied, i.e., either Group 2 or Group 4. Thus, implementing a 'one-size-fits-all' approach would not satisfy all employees.

Recommendations for BZK - This study resulted in the following recommendations for the ministry.

The first recommendation is that employees should be *participating in the decision-making process* of establishing a hybrid working approach. However, company goals should be included in this decision-making as well and therefore the final decision should be made by the manager. If this results in an approach that is not preferred by the employees, reasons for choosing this approach should be communicated using a tell-and-sell strategy.

The second recommendation could be a part of this tell-and-sell strategy. Namely, BZK should *motivate employees to come back to the office*. Otherwise, negative effects, such as a lonely office effect in which working from home becomes contagious because employees are no longer meeting their colleagues, or problems regarding organizational learning might arise.

The third recommendation is to *think critically about the 'no one-size-fits-all' fundamental*. Although one group of employees will be dissatisfied when implementing only one approach, it should be considered whether it is desirable to implement multiple approaches. Implementing one standardized approach has its benefits for employees, for instance, it reduces the complexity of working processes. Additionally, when choosing multiple approaches, choices need to be made on how to differentiate. For example, this could be done on an individual or team level, but differentiation could also take place considering different types of work activities. Each form of differentiation has its own advantages and disadvantages.

The fourth recommendation is, when implementing only one hybrid working approach, to *implement an approach in which employees are expected to work 50% from home and 50% from the office*. More specific arrangements should be made within the teams. This will satisfy most employees, is in line with the national government's definition of hybrid working, and the BZK fundamentals of hybrid working. Moreover, this ensures that BZK will remain an attractive employer for young professionals.

The final recommendation is to *evaluate the approach regularly and make changes if necessary*. This should be done using a questionnaire including topics such as the working arrangements, perceived autonomy and performance, work-life balance, commitment to the organization and the team, and what the most important reasons were to come to the office. The questionnaire should take five to ten minutes to complete and in the beginning be sent out after three, six, and nine months. After which the questions can be included in an annual employee satisfaction survey.

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1. Introduction

This research is conducted at the Dutch Ministry of the Interior and Kingdom as partial fulfillment of the master's program in Operations Management & Logistics at Eindhoven University of Technology (TU/e).

The goal of this master thesis is to investigate the preferences of BZK employees concerning hybrid working. Thus, the following research question has been formulated:

“What are the preferences of BZK employees for the approach of hybrid working?”

This chapter will introduce the research project, by first introducing the company and giving a description of the problem that the company is facing. After that, the research objective, with its corresponding research questions, will be discussed, and the scope of the research will be defined. Lastly, the report outline will be sketched out.

1.1 Company introduction

This research was conducted at the Dutch Ministry of the Interior and Kingdom Relations (Binnenlandse Zaken en Koninkrijksrelaties; BZK). This ministry is one of the eleven ministries of the Netherlands and is responsible for safeguarding the core values of the Dutch democracy. BZK is concerned with effective public administration and public authorities the people can trust. Additionally, BZK ensures people can live in affordable, safe, and sustainable neighborhoods where everyone matters and takes part in society (Government of the Netherlands, n.d.). Currently, BZK has three ministers: the minister of the Interior and Kingdom Relations, the minister of Housing and Spatial Planning, and the Minister for Digitalization.

At BZK, around 11.000 employees work in various departments. The work at the ministry is quite diverse, ranging from governing the real estate for the entire national government to developing policies for the democratic system of the Netherlands.

The national government defines hybrid working as a way of working that allows employees to choose how, when, with whom, and where they work together (Rijksoverheid, 2021). This could be in the office, at home, or an external location. Those choices are coordinated with the manager and colleagues employees work with. This allows employees to align their way of working with what is needed for the tasks or assignments they are working on, and with their personal situations and preferences.

Following the definition of hybrid working from the national government, BZK has set up six fundamentals for hybrid working:

1. **No one size fits all:** differences regarding employee day/week schedule preferences are taken into account;
2. **Mutual trust:** managers provide space and trust, and employees deal with this professionally and responsibly;
3. **Working from home:** hybrid working means that employees are not only working at the office but also from home. However, working from home should not be seen as an obligation, but also not as a right;
4. **Regularly present in the office:** after a period of strict COVID measures and working from home, employees are expected to be regularly present in the office again. Collegial responsibility is vital because even if some employees do not consider it useful to work in the office, colleagues could benefit from this employee's presence;

5. **Good conversation:** in the triangle team, employee, and manager working agreements are made, evaluated, and adjusted;
6. **Equality:** everyone's contribution matters, regardless of where they work from.

1.2 Problem description

Before the COVID-19 pandemic, employees at BZK were mainly working at the office. Employees were allowed to work from home a couple of days per week if they wanted; often this was only one fixed day per week. However, this was not something set in stone and the organization was not equipped for large numbers of employees to be working from home. This way of working changed when in March 2020 COVID-19 hit the Netherlands, and the national government forced the working population to start working from home. BZK employees needed to radically change their way of working because, as before the pandemic, employees would work from home only incidentally, but now this had become a new reality. Their daily life changed drastically and they needed to get used to aspects such as meeting each other through videoconferencing, and setting up a home office while at the same time, for example, homeschooling children. Additionally, BZK needed to set up the proper digital infrastructure to make working from home possible for most of their employees and provide office equipment, such as office chairs and computer screens.

Due to insights gained from working from home during the pandemic, BZK wanted to change its way of working into a more hybrid way of working. Hybrid working can be considered as a way of working in which employees can perform their work both at home and in an organizational setting (e.g. the office), using ICT to continue their work tasks and relationships (Halford, 2005). For BZK specifically, this meant that employees would be allowed to work from the office as well as from home or someplace else. At the end of September 2022, when the national government relaxed the regulations for working from home, BZK started to experiment with hybrid working. The idea behind this experiment was that employees themselves would be responsible for the chosen approach, as long as it was not hindering the collaboration within the team. This resulted in departments taking different approaches for hybrid working, ranging from no norms at all to more strict schedules on when to be present in the office.

However, due to rising numbers of COVID infections, the national government again enforced a strict working from home policy in October 2021. Hence, the experiments were put on hold. Because it was unclear how long the new lockdown would last, it was decided to abolish the goal of measuring the effects of these experiments. Instead, to be able to give advice on how to proceed with working in a hybrid way, the desire was to get insights into what employees would prefer when they needed to start working in a hybrid way.

Because BZK regards hybrid working as a new sustainable way of working for the future, they wanted to gain as many benefits as possible from hybrid working and avoid negative consequences such as diminished organizational commitment or social isolation. They needed to know which approach works best for their employees and whether they needed to set up norms and rules in their policy which still needs to be drawn up. Therefore, the preferences of the BZK employees needed to be investigated.

When investigating the preferences of BZK employees, their time-spatial fit should be taken into account as well. According to Wessels (2017, p.25), time-spatial fit can be defined as: *“the degree to which a given choice of work locations, workplaces, and times assist employees in performing their work tasks and private demands during a particular workday”*.

1.3 Research questions

Arising from the abovementioned problem description, the following main research question has been formulated:

“What are the preferences of BZK employees for the approach of hybrid working to optimize their time-spatial fit?”

Before investigating employees’ preferences regarding hybrid working approaches, it should be clear how the approaches are made up. Hybrid working approaches can be made up of several components, such as the number of days that employees should be present in the office or if there are arrangements regarding the presence in the office. Moreover, these components can vary over several levels. For instance, the number of days that employees should be present in the office can vary from only one day to five days per week. Hence, the following sub-question has been formulated:

1. *“What components and levels should be included to make up the approaches?”*

Once these components and their levels are identified, employees’ preferences regarding these levels should be investigated. Additionally, it should be explored which components have the highest impact on preferred approaches. Thus, the following two sub-questions are formulated:

2. *“What levels within these components are preferred most by BZK employees to optimize their time-spatial fit?”*

3. *“What component(s) have the highest impact on the preferences of BZK employees to optimize their time-spatial fit?”*

Moreover, the population of employees is diverse at the ministry, which may lead to differences in employees’ preferences for hybrid working approaches. Therefore, the following sub-question is formulated:

4. *“What different groups of employees can be distinguished and what approaches do these groups prefer?”*

Lastly, when investigating employee preferences, only the employee perspective regarding hybrid working approaches is examined. However, as discussed in Section 1.1, the ministry has defined six fundamentals regarding hybrid working. These so-called organizational fundamentals include 1) no one size fits all, 2) mutual trust, 3) working from home as well, 4) regularly present in the office, 5) good conversation, and 6) equality. This led to the following sub-questions:

5. *“How do employees’ preferences connect to the organizational fundamentals of hybrid working?”*

6. *“Which approach of hybrid working is optimal, given the employees’ preferences and the ministry’s hybrid working fundamentals?”*

1.4 Scope

Following the problem description, the focus of this research is to investigate the preferences of BZK employees, keeping in mind their time-spatial fit. Due to the work at the ministry being so diverse and its large number of employees, it was not possible to conduct the research for all departments and ask all employees. Hence, five different departments were chosen to participate in this research.

The five departments that were selected were based on a select number of criteria. First of all, these departments were specifically chosen because they mainly consist of policy officers who perform similar work tasks. Policy officers are typically knowledge workers, which means they create, manage,

transform, and/or spread information for which the centralization of information is needed, rather than physical centralization. Therefore knowledge workers can be considered ideal hybrid workers (Illegems et al., 2001). Another reason why these departments were selected is because they are all primarily located in the same building. This reduces the chance of differences in outcomes due to the physical environment in which employees are working. Furthermore, these departments were selected because they had different approaches in mind in the discontinued experiments for hybrid working approaches during the exploration phase of the project. Lastly, these departments were chosen because of the number of employees working in the departments. Every department had at least 50 employees, which was considered necessary to obtain a sufficient number of respondents for the study.

1.5 Report outline

The next chapter will provide an overview of the evolution of hybrid working and will further elaborate on time-spatial fit. In addition, factors influencing hybrid working and different hybrid working approaches will be discussed. Chapter 3 will introduce conjoint analysis, the key method of analysis used in this research. Chapter 4 will dive into the development of attributes and levels of conjoint analysis. The chapter will, in addition, provide the conceptual model that derives from those attributes and levels. Chapter 5 discusses the design of the questionnaire used for the conjoint analysis after which Chapter 6 discusses the statistical techniques with which the data were analyzed. In Chapter 7, the results of all analyses will be presented. Lastly, Chapter 8 will provide the most important findings, as well as the theoretical and managerial implications, the limitations of the study, and future research possibilities.

2. Theoretical background

This chapter will provide an overview of relevant literature that can be a basis for determining the elements that play an important role in a hybrid working approach. First, an overview of the evolution of hybrid working will be provided. Then time-spatial fit will be introduced. Afterwards, several factors influencing hybrid working will be discussed, and lastly, specific hybrid working arrangements will be presented.

2.1 Evolution of hybrid working

Visionaries from the 1970s and 1980s, such as Nilles and Toffler, introduced the term teleworking and identified several benefits related to teleworking, such as cost reductions for organizations, a reduction in commuting time, and even greater community stability and environmental benefits (Messenger & Gschwind, 2016). However, the adoption of telework proceeded slower than anticipated due to several factors. For instance, working from home greatly depended on technological advancements, and reduced commuting time was not as big of a motivator as expected (Messenger & Gschwind, 2016; Vilhelmson & Thulin, 2016). Other factors included: the traditional way of working being challenged which led to issues of control and trust by managers, issues related to work-life balance, and social isolation (Messenger & Gschwind, 2016; Vilhelmson & Thulin, 2016). Even though the adoption of teleworking started slowly, it kept on increasing steadily (Messenger & Gschwind, 2016). For example, in the years pre-COVID-19, the percentage of workers working from home in the Netherlands had already increased from 34% in 2013 to 39% in 2019 (CBS, 2020). However, working from home was mostly seen as a part-time option instead of a full-time endeavor and it was not mandatory as it was a response to employees' preferences (Kniffin et al., 2021; Vilhelmson & Thulin, 2016).

Due to COVID-19, working from home became the norm for millions of workers. This was enforced by many governments around the globe to prevent the disease from spreading. Typically, only key workers were allowed to work at their workplaces (e.g. De Nederlandse Rijksoverheid, 2020). This resulted in almost 40% of the European working population teleworking full-time, whereas in 2019 only 5.4% of this working population was working from home and often only part-time (European Commission, 2020). Many of the workers saw the advantages of working from home, such as saving commuting time and greater flexibility. Also, disadvantages were experienced, such as being deprived of social interactions at work, staying inside the home all the time, and poor physical work conditions (Ipsen et al., 2021).

Now that more workers have experienced the positive effects of working from home, it is likely that more workplaces will keep on offering their employees possibilities to continue working from home to meet the increased demand for flexibility at the same time (Ipsen et al., 2021). To make optimal use of the advantages that working at home and working at the office may offer, the new way of working will be a hybrid way of working. Hybrid working can be defined as *'Being employed to work both at home and also in an organizational setting, using ICTs to maintain workloads and relationships across both domestic and organizational spaces ...'* (Halford, 2005 p.20).

2.2 Time spatial fit

Hybrid working is suggested as a new way of working in the post-COVID-19 era (Ipsen et al., 2021). Because hybrid working offers employees to work from both the office and their home, it offers them greater time-spatial flexibility. Time-spatial flexibility can be defined as *"the ability of workers to make choices influencing when, where, and for how long they engage in work-related tasks"* (Hill et al., 2008 p.152). Although organizations can offer the possibility of more flexible work arrangements, this does not necessarily mean that employees experience this as intended or use these work arrangements

(Wessels et al., 2019). To exploit the advantages of time-spatial flexibility, employees should optimize their time-spatial fit (Wessels et al., 2019).

According to Wessels (2017, p.25), time-spatial fit can be defined as: *“the degree to which a given choice of work locations, workplaces, and times assist employees in performing their work tasks and private demands during a particular workday.”* This differs from person-environment fit by not dealing with the fit of the person with the environment. Instead, it is concerned with the fit of HR policy and office design on the one hand, and private demands on the other hand (Wessels et al., 2019).

2.3 Factors influencing hybrid working

Based on a literature study on the enablers for hybrid working by Munnich (2021), several factors affecting hybrid working were investigated. These factors included socio-demographic factors and factors related to job characteristics and the process of coming to a hybrid working approach. In Section 2.3.1, first, the socio-demographic factors will be discussed, after which in Section 2.3.2 the job characteristics will be discussed. Lastly, in Section 2.3.3 factors related to the process of coming to an approach will be discussed. A visual representation of these factors can be found in Figure 1.

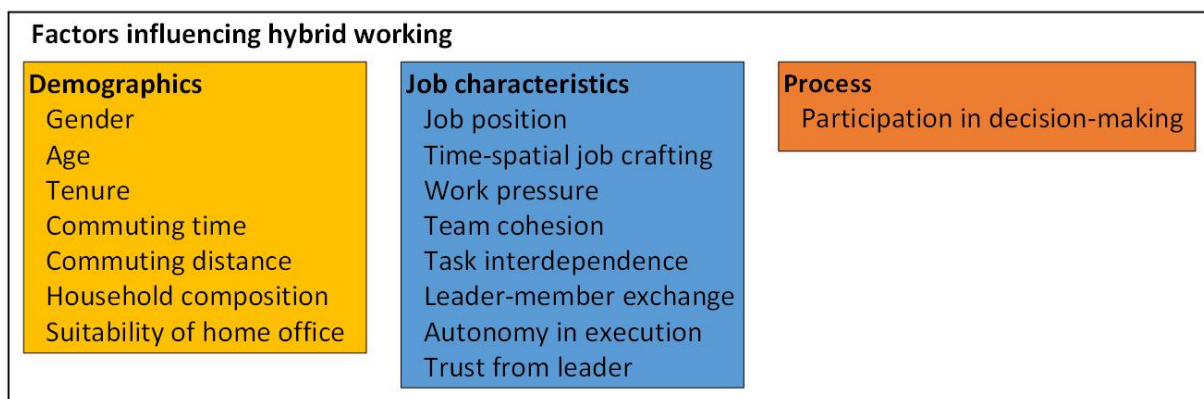


Figure 1 – Factors influencing hybrid working, derived from literature study (Munnich, 2021)

2.3.1 Socio-demographic factors

Gender

Although the gender gap has been narrowing over the past decades, gender still affects hybrid working and its outcomes (Feng & Savani, 2020; Gajendran & Harrison, 2007). When taking gender role theory into account, the family role still belongs to women’s but not men’s identity, which causes women to take on more housework and childcare than men (Feng & Savani, 2020). Effectively, the reasons for hybrid working differ per gender. Women prefer to work from home to take care of family responsibilities, reduce stress, and have more time for themselves whereas men often prefer to WFH to get more work done (Lyttelton et al., 2020).

Research shows mixed results on the consequences of hybrid working per gender. Gajendran & Harrison, (2007) found that women experienced greater benefits than men from working from home, such as improved performance and improved perceived career prospects. This is explained by the fact that although women have the primary responsibility in the family domain, an option to work from home offers them more control over the family and work domain. When working hybrid, women have more freedom to structure their work in such a way that it is beneficial to them to meet their demands. On the other hand, Lyttelton et al. (2020) found that women’s productivity and mental well-being suffers from working from home because they are more responsive to family demands, resulting in a more blurred boundary between work and family. This has implications for the quality of the work done at home and leads to women multitasking more often than men. Multitasking and work

interruptions, in turn, are linked to higher emotional strain. Consequently, this research implied that because men are less responsive to family demands, working from home has a more positive effect on men's well-being compared to women's (Lyttelton et al., 2020). In addition, research by Feng & Savani (2020) found that women, more so than men, saw a decline in their work productivity when working from home full-time and when there is no access to childcare services. This was also explained by the fact that women take on more housework and childcare compared to men. Moreover, women often sacrifice their leisure time to accomplish more work. This means that women take on more demands compared to men and their recovery time decreases simultaneously. Therefore, preferences for hybrid working approaches can be expected to differ per gender.

Age

Research by Rothe et al. (2012) shows that age influences an employee's work environment preferences. For instance, younger employees value work environments that support teamwork, social interaction, and innovation more compared to older employees. A likely reason is that older employees typically have a more advanced career and, therefore, often have more developed social networks within the company compared to younger employees (Westerman & Yamamura, 2007). Additionally, older employees might have different preferences and possibly choose different approaches because of their closer retirement (Kniffin et al., 2021).

Tenure

Organizational tenure is a practical surrogate to measure familiarity with the organization and work culture. Hence, the more time an employee has spent in an organization, the more likely an employee is to have experience with its culture, norms, and expectations (Turetken et al., 2011). Research by Turetken et al., (2011) has investigated the role of organizational tenure in telework success since organizations emphasize tenure in their telework policies. Results indicated that employees with a shorter tenure are often less satisfied when working from home, which can be explained by them being less acquainted with the organization and its expectations and therefore face more stress. So, for employees with a shorter tenure, employee well-being could be negatively affected when working from home. Therefore, it could be expected that employees with a shorter tenure would prefer to work more in the office in a hybrid working setting compared to employees with a longer tenure.

Commuting time/distance

Reducing commuting time was considered the main reason for working from home when it first was introduced, but in reality, this has proven not to be a strong motivator for people to start working from home (Bailey & Kurland, 2002). Neither commuting time, nor the commuting distance seemed to be predictive of the frequency of working from home or the preference for employees to choose to work from home (Bailey & Kurland, 2002). However, other research did show that a longer commuting distance leads to a higher probability of working from home (Helminen & Ristimäki, 2007).

In recent years traffic congestion in cities has strongly increased. Negative consequences for employees working in those cities are, for instance, arriving late at work or leaving work earlier to get home (Illegems et al., 2001). Companies faced with these problems turned out to be more willing to adopt new ways of working, such as hybrid working, to tackle this problem (Illegems et al., 2001). When COVID-19 shut down the world and people were forced to only work from home, workers experienced a reduced commuting time as one of the biggest advantages in this new work setting (Ipsen et al., 2021). Many workers were fine with the disappearance of their daily commute during COVID-19, and working from home left them with more time to spend on other activities (PwC Netherlands, 2020). Consequently, this could influence an employee's preference to return to the office in a hybrid working setting and thus an employee's time-spatial fit.

Household composition

Hybrid working influences the work-life balance of an employee, causing for the household composition determining both an employee's motivations for and the success of hybrid working. It is often stated that teleworking helps to reduce work-family conflict because it offers flexibility to employees to schedule work optimally to minimize interference from family (e.g., prevention of juggling multiple roles) (Gajendran & Harrison, 2007). Research by Zhang et al. (2020) shows that children are the most important feature in family life that influences telework behavior. Often, employees with young children are less likely to prefer telework compared to employees without children. This is explained by the fact that (younger) children in the household lead to an increase in household demands and, therefore, parents are more likely to experience an increased family-to-work conflict due to their children causing distractions during work. The increased family-to-work conflict is also supported by research from Schieman, Badawy, Milkie, and Bierman (2021), which states that younger children need more supervision and greater care, especially when there is no daycare available. As a result, due to the increased demands and increased work interruptions, workers in households with younger children might experience higher strain and lower productivity while working from home when children are present.

Research by Schieman et al. (2021) found that in households where the youngest child is older than 13, the employees did not experience this increase in family-work conflict when working from home. An explanation is that older children are more independent and do not need as much help or supervision from their parents. In addition, those older children have to go to school during the day and can spend time with their friends outside the house during their free time. This implies that employees with older children might not experience the disruptions and strains as much as workers with younger children. Therefore, hybrid working could be more beneficial to them in terms of wellbeing and output.

When looking at households without children, Zhang et al., (2020) have shown that single individuals are more likely to telework than individuals living together. This is explained by the fact that single individuals are not experiencing as much role conflict due to there being only a slight work-family and family-work conflict. However, single individuals are probably less likely to work from home full-time, especially when they do not have geographical and close family ties, due to social isolation. Consequentially, hybrid working would be an ideal way of experiencing the benefits of working from home for a single individual without losing social connections, to keep up their well-being and to, perhaps, also improve their output. In households with individuals who live together with others (e.g., their spouse or roommates), employees who work from home might experience more distractions, and as a result, might face more family-work conflict. Increased family-work conflicts while working hybrid may deteriorate an employee's well-being, and increased interruptions may decrease an employee's output. However, the effects for a household without children will not be as large as for a household with (younger) children. Hence, the household composition could have a large impact on the preferences for hybrid working approaches to optimize time-spatial fit.

Suitability of home office

A requirement for hybrid working is a proper space to work from at home. Nevertheless, during the COVID pandemic employees had no choice but to make it work at home. Research by Cuerdo-Vilches et al. (2021) demonstrates that 33.3% of their respondents had an inadequate home office during the pandemic in terms of space, the number of people at home, access to digital resources, overall lighting, room size, and furniture. Employees desire similar qualities for their home office as they desire for their corporate offices (e.g. privacy, good quality lighting, and adequate equipment). That being said, many employees experience far more distractive aspects when working from home, especially when

they do not have a workspace far from the private areas of their home (Ng, 2010). An inadequately equipped home office could lead to all kinds of negative consequences, such as ergonomic issues or reduced work productivity due to distractions (Gerding et al., 2021; Ng, 2010). Hence, the presence of a suitable home office could influence preferences for hybrid working approaches.

2.3.2 Job characteristics

Job position

Employees in managerial positions and non-managerial positions might experience hybrid working differently. Managers may, for instance, experience a fear of losing control over their employees because they are no longer present in the office all of the time (Gajendran & Harrison, 2007). On the other hand, employees might experience increased autonomy when working hybrid (Gajendran & Harrison, 2007). Additionally, changing to a hybrid form of working requires management to change their leadership behaviors (Stoker et al., 2021), which could make them more reluctant to support this type of change. Because of these different experiences, differences in preferences for hybrid working approaches to optimize time-spatial fit may be expected.

Time-spatial job crafting

Job crafting is a bottom-up work design approach in which employees proactively change job characteristics, such as altering work tasks or relationships, and hence, can change the meaning of their job (Wrzesniewski & Dutton, 2001). According to Wrzesniewski & Dutton (2001), the reasons for employees to perform job crafting arise from three needs, namely: to assert control over their jobs, to create a positive self-image in their work, and to fulfill the basic human need for connection to others.

However, in job crafting research, little attention is given to time and spatial dimensions (Wessels et al., 2019). Therefore, Wessels (2017, p.28) introduced the term time-spatial job crafting. This is a type of job crafting in which employees reflect on specific work tasks and private demands. Moreover, they select their workplaces, work locations, and work hours in such a way that they fit those tasks and private demands. Then, they possibly adapt either their location of work and working hours or tasks and private demands to ensure that these still fit each other. Thus, when employees are allowed to perform more time-spatial job crafting behavior, they can start working hybrid in a way that fits their situation best, and thus, optimize their time-spatial fit, which simultaneously is the goal of time-spatial job crafting (Wessels, 2017).

Work pressure

When a hybrid working approach is chosen that allows employees to work from home more frequently, this is likely to reduce an employee's work pressure (Sardeshmukh et al., 2012). A reason for this is that commuting time is reduced, with the freed-up time often being spent on work activities (PwC Netherlands, 2020). Another reason for reduced work pressure is that employees perceive an increase in job resources, such as increased job engagement due to receiving benefits from their employer (Sardeshmukh et al., 2012).

JD-R theory states that to be able to engage in job crafting behaviors, employees need to have the capacity and the right resources, implying that their job demands should be manageable (Knight et al., 2021). Moreover, COR theory predicts that once employees have low or moderate job demands, individuals can craft the resources they need, gaining even more job resources for the future or enhancing current resources that fit their personal goals (Knight et al., 2021). On the other hand, COR predicts that when job demands are high, individuals could feel fearful of losing their current resources when they engage in job crafting. Therefore, they would engage in activities to protect their current job resources instead of acquiring more (Knight et al., 2021). Work pressure, being a key job demand, is as a result an important moderator for job crafting activities (Knight et al., 2021). As a result, it could

be that the degree of work pressure leads to different preferences, with employees experiencing high work pressure preferring approaches closer to the way of working they are already used to, regardless of how well this optimizes their time-spatial fit. Whereas employees experiencing lower work pressure prefer approaches that could be different from the way they are used to, to optimize their time-spatial fit.

Team cohesion

According to Carron & Brawley (2000), team cohesion refers to a dynamic process that is reflected in the tendency of a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of members' affective needs. Even when employees are given the opportunity for more flexible work arrangements (e.g., hybrid working), employees still desire a co-located office for social ties and work collaborations (Rockmann & Pratt, 2015). Team cohesion has three dimensions: task cohesion, social cohesion, and individual attraction to the group (Carless & De Paola, 2000). Task cohesion is the extent to which the team is united and committed to performing work tasks; social cohesion is the degree to which team members like socializing with each other; and individual attraction to the group is the extent to which individual team members are attracted to the group (Carless & De Paola, 2000).

Rockmann & Pratt (2015) found that in companies where everyone was working away from the office, the onsite office where employees socialize and brainstorm together de facto no longer existed. Thus, a decrease in social cohesion and attraction to the group occurred. This lack of social cohesion and individual attraction to the group made people choose to work from home more often, as there was no surety in meeting colleagues in the onsite office, and there not being any benefits in going if they would have to sit by themselves (Rockmann & Pratt, 2015). Consequently, instead of choosing locations, workplaces, and work times to optimize private and work demands, this choice was heavily influenced by the lack of social cohesion in the office, potentially leading to a worse time-spatial fit. Marques-Quinteiro et al. (2020) state that task cohesion is an essential team-level resource. Moreover, according to JD-R theory, social cohesion can be considered a vital job resource as well (Urien et al., 2017). These job resources can buffer the negative effects of demands that employees may experience. Hence, the chosen approach is likely to have a strong influence on team cohesion. However, it could be that the degree of team cohesion leads to different preferences, with employees in high-cohesion teams preferring approaches where they would be able to meet each other in person more often to keep socializing with each other, and employees in lower-cohesion teams having a lower preference for such approaches. Thus, team cohesion could influence preferences as well.

Task interdependence

Task interdependence can be defined as the extent to which employees are dependent upon each other to perform their job (Van De Ven et al., 1976). When employees experience a high degree of task interdependence, they need to collaborate with other team members to finish their work tasks (Aubé & Rousseau, 2005). On the other hand, when task interdependence is low employees can perform their work independently from each other (Aubé & Rousseau, 2005).

Higher task interdependence requires a higher degree of knowledge sharing, information exchange, and interaction among team members, working from home may hinder productivity due to limited interactions between team members (Beauregard et al., 2019). Especially in teams with a high degree of reciprocal task interdependence, working from home can hinder team performance and even team collaboration (Gajendran & Harrison, 2007). When looking at teams that experience less task interdependence, such as sequential or pooled interdependence, working from home may cause less negative outcomes for team productivity and collaboration (Beauregard et al., 2019). Thus, hybrid working approaches that require employees to work more often in the office, would facilitate higher

levels of task interdependence, whereas, hybrid working approaches that require employees to work from home more often, would better fit lower degrees of task interdependence.

Leader-member exchange

Leader-member exchange (LMX) involves the different types of relationships that can be developed between leaders and their employees which can be characterized by the physical or mental effort, material resources, information, and/or emotional support exchanged between the two parties (Liden et al., 1997). High LMX quality relationships include the exchange of materials and non-material goods that extend beyond what is specified in formal job descriptions. In contrast, low LMX quality relationships are the ones that are limited to the exchanges that take place according to the employment contract (Liden et al., 1997).

When an approach is implemented in which employees are less than two and a half days per week working in the office, negative consequences for interpersonal relationships may occur (Beauregard et al., 2019). A reason for this is that when working from home more frequently, the opportunity for face-to-face employee-leader contact is reduced (Gajendran & Harrison, 2007). Face-to-face is the richest communication medium (Smith et al., 2018). Therefore, when an approach is chosen in which employees are expected to work from home more than two and a half days per week, a diminished LMX quality is expected.

When employees experience high-quality LMX, a higher level of decision influence is expected, which can be explained by managers rewarding employees who are already performing well with increased levels of decision influence (Singh, 2009). Moreover, research by Kozlowski and Doherty (1989) has shown that a high-quality relationship between employees and their supervisors leads to higher preferential treatment of the employee. Thus, employees experiencing high LMX could arrange a hybrid working approach that fits their preferences better. Moreover, these employees likely prefer an approach in which they are present at least two and a half days per week to maintain their high-quality LMX. Employees in lower-quality LMX may have lower preferences for such approaches.

Autonomy in execution

Job autonomy refers to “the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out” (de Spiegelaere et al., 2016, p. 516). Job autonomy can be subdivided into four different dimensions: work method autonomy, work scheduling autonomy, work time autonomy, and locational autonomy (de Spiegelaere et al., 2016). According to de Spiegelaere et al. (2016) work method autonomy refers to the choice an employee has to make to determine their work procedures and methods. Work scheduling autonomy refers to the choice an employee has to determine in what order they want to do their tasks (de Spiegelaere et al., 2016). Work time autonomy refers to the choice an employee has in regard to when to start and stop working (de Spiegelaere et al., 2016). Lastly, locational autonomy refers to the choice an employee has regarding where to perform their work tasks (de Spiegelaere et al., 2016). Therefore, when an employee experiences a high degree of job autonomy, this employee is given more freedom in where, when, and how to perform their job. Thus, when employees are given more autonomy in how to perform their job, they can go for a hybrid working approach that fits their ideal approach better. Thus, they are better able to optimize their time-spatial fit.

Trust from leader

When an approach is chosen in which employees are expected to be in the office more frequently, there is a more frequent possibility of face-to-face interactions with colleagues. Face-to-face interaction is the highest medium of communication (Smith et al., 2018). This is necessary to build and

maintain relationships and will result in more trust amongst colleagues (Fayard et al., 2021). Hence, an approach that requires more presence in the office is likely to lead to a higher degree of trust from the leader.

When employees start to work hybrid, they are no longer physically present in the office all the time and the perceived control of a leader might decrease (Stoker et al., 2021). When leaders distrust employees, and they want to maintain the level of control they would have in the situation before hybrid working, they might use monitoring software or strict detailed agreements, which would hurt an employee's perceived autonomy (Gajendran & Harrison, 2007; Singh & Verma, 2020). On the other hand, when leaders feel that they can trust employees, there is less need for monitoring and control, and therefore, autonomy will increase (van Hoorn, 2018). Thus, employees that experience a high level of trust from their supervisor will experience a higher degree of autonomy and may prefer to work from home more often compared to employees experiencing low supervisor trust.

2.3.3 Process of establishing an approach

Participation in decision-making

Vroom & Jago (1995) identified several ways to make decisions within organizations, ranging from autocratic decision making to participative decision making. For instance, when employees' acceptance of a decision is crucial and an autocratic decision will not be accepted, participative decision-making should be chosen. Alternatively, when employees do not share the organizational goals and it is an important decision to be made, one would opt for autocratic decision making (Vroom & Jago, 1995). Sometimes, because of time constraints, it is not possible to involve all employees (Vroom & Jago, 1995). Then, a form of indirect participation can be used, in which the influence of the employee is exerted through representatives (García et al., 2017).

Starting to work in a hybrid way is an impactful organizational change. Allowing employees to participate in decision-making contributes to minimizing the negative outcomes of organizational change and ensures that in times of change, the person-organization fit will not diminish (Xeo et al., 2014). Therefore, it is expected that involvement of employees in the decision-making process of coming to a hybrid working approach leads to an approach that can meet their preferences better and thus will lead to a better time-spatial fit. Additionally, besides improving time-spatial fit, this will also lead to higher procedural fairness, which will reduce resistance to the organizational change (Konovsky, 2000). This is vital because it is unlikely to satisfy all employees with a new way of working. It is therefore likely that employees have a higher preference for approaches that result from a participative process than for those that do not.

2.4 Hybrid working approaches

Currently, not much has been published on how companies should organize their hybrid working structure. The general prediction coming from the industry is that workers will be working from home two days per week, meaning that they will be working at the office for the remaining three (AWVN, 2020; Bloom, 2021). A report compiled by Dorenbosch (2021) suggests ten different possibilities on how organizations can arrange their work policies to return to the office in a post-pandemic world, disregarding an all-or-nothing way of working (i.e. returning to the office full-time or working from home full-time). The other ten ways to return to the office are divided into three categories: '*company-dependent*', '*job-dependent*', and '*person-dependent*'.

The *company-dependent* category can be subdivided into four different ways of returning to the office, namely: returning on a weekly basis, returning on a daypart basis, returning on a monthly basis, and returning on a seasonal basis. Returning on a weekly basis is seen by many as a plausible future for the office. This entails two or three meeting days per week at the office, but working productively will be

done from home. When returning on a daypart basis, employees are in the office the entire week, but only in the morning or the afternoon. One of the advantages is that employees can avoid rush hours in the morning or late afternoon. Returning on a monthly basis means that employees work from home every other week. For example, the even weeks are for working from home and the uneven weeks for working in the office. Taking this to an extreme version is the returning on a seasonal basis, which means that employees are working for longer consecutive periods at home and for longer consecutive periods at the office. A visual overview of these ways of returning to the office can be found in Figure 2.

The *job-dependent* category is subdivided into three ways: returning on a task or activity basis, returning on a job function basis, and returning on a team basis. In returning on a task or activity basis, returning to the office does not depend on certain days, but depends on what tasks need to be done. Employees decide when and where they can do their tasks most productively. The second way, returning on a job function basis, makes working from the office or working from home dependent on the set of tasks per job. For example, function A will be working from home for 60% of the time, whereas function B will be working from home for 40% of the time. When returning on a team basis, a team decides which tasks should be done from home and at the office. Teams solve the question of how to structure hybrid working themselves. An overview of these ways of returning to the office can be found in Figure 2 as well.

Lastly, the category *person-dependent* is subdivided into returning on a preference basis, returning on a health basis, and returning on a family basis. The goal of returning on a preference basis is to keep work motivating. Therefore, employees can perform work at home or in the office as they wish. The goal of returning on a health basis is to let employees perform work where it keeps them healthy. Based on personal health or stress levels, employees determine if they work from home or work from the office. Lastly, the goal of returning on a family basis is to optimize work-family balance. To give an example, working from the office or working from home is determined by the activities of children or the working days of a partner. A visual representation can be found in Figure 2.



Figure 2 - Different hybrid working approaches, adapted from Dorenbosch (2021)

3. Method

This chapter provides an overview of the research methodology used in this study. First, it will introduce choice-based conjoint analysis, the key method of analysis in this research. Then, the reason for choosing this method will be discussed. Lastly, the procedure of the conjoint analysis will be presented.

3.1 Choice of method

Due to the circumstances regarding COVID, it was not possible to conduct a quasi-experimental study to measure the effects of the hybrid working approaches that the different departments had in mind when they were allowed to experiment with it. Instead, a hypothetical situation had to be created in which employees would imagine themselves being able to work in a hybrid way, without any restrictions due to COVID, to investigate what their preferences would be.

3.1.1 Vignette studies

One method to obtain respondents' judgments on hypothetical situations are vignette studies. A vignette study consists of two components: a vignette experiment and a traditional survey. A vignette is a short, carefully constructed description of a person, object, or situation, represented by a combination of characteristics (Atzmüller & Steiner, 2010). Usually, respondents are confronted with a population of vignettes to elicit their beliefs concerning the presented scenarios. There are three types of vignette experiments: within-subject designs, mixed designs, and between-subject designs (Atzmüller & Steiner, 2010). Within-subject designs show all respondents the same set of vignettes, whereas in mixed designs each group of respondents receives a different set of vignettes. Between-subject designs are rare because measurement problems might arise due to showing only one vignette per respondent. A problem with vignette studies is that the number of possible vignette versions increases drastically when using more variables within the vignettes. When that happens, respondents are unable to review all vignettes, and subsets should be presented to them. These subsets can be created by providing a sample of the total vignette population or by partitioning the total vignette population into respondent-specific sets (Atzmüller & Steiner, 2010). However, vignette studies would be a less suitable research method for the current study because it is impossible to show all possible scenarios to the respondents. To present subsets of the scenarios, other methods are more suitable. For instance, conjoint analysis makes use of algorithms to create a balanced subset of the factorial set of versions.

3.1.2 Conjoint analysis

Conjoint analysis is a statistical analysis to estimate the structure of a respondent's preferences, based on a set of alternatives that are specified in terms of levels of different attributes (Green & Srinivasan, 1978). It is most often used in marketing and strategic analysis to obtain information for new product development, branding and packaging, and market segmentation (Green & Srinivasan, 1990). However, this is not the only possible application for conjoint analyses. Green & Srinivasan (1990) identified conjoint studies in the fields of litigation, pharmaceuticals, employee benefit packages, and social/environmental tradeoffs. The advantage of conjoint analysis is that it allows companies to test configurations of their new product or service and predict the success of this new product or service. Moreover, compared to regular questionnaires, conjoint analysis has the advantage that it mitigates the effect of a social desirability bias (Horiuchi et al., 2021). This can be explained by the fact that in fully randomized conjoint studies, it is unlikely that respondents perceive the possibility to violate social norms by choosing specific profiles, and even if respondents perceive the potential for norm violation, they are still more likely to express honest preferences because other attributes enable them to rationalize their evaluations (Horiuchi et al., 2021). However, problems might still arise when using

conjoint analysis. Research by Selka et al. (2010) indicated some of these problems being a large number of possible combinations of attributes and levels, and when plenty of choice decisions are shown a respondent might experience information overload, boredom, or fatigue. In addition, learning effects could occur during a survey, leading to lower internal and external validity. Although solutions to these problems have not been sufficiently studied, some of these solutions try to decrease the number of stimuli per survey, try to activate respondents' attentiveness, use simpler questions, or ask for choice decisions instead of preference rankings (Selka et al., 2010).

When considering conjoint analysis, two main variations are possible: choice-based conjoint (CBC) analysis and adaptive choice-based conjoint (ACBC) analysis. The most widely used approach is choice-based conjoint analysis, also called discrete choice modeling (DCM). In a choice-based conjoint analysis, respondents are asked to choose one of several concepts without ranking these concepts. The advantages of this approach are, for instance, that it is easy for respondents to answer. In addition, it allows for flexible designs to be used which means that it is both possible to determine which product profiles are shown to the respondents and to measure a 'none' alternative. However, the weakness of this approach is that a sample size of at least 200 respondents is needed (Sawtooth Software, 2018). Also, the number of attributes and levels to use is limited (i.e., a maximum of ten attributes), as it could otherwise lead to the survey becoming too difficult for respondents to answer.

A more advanced approach is the adaptive choice-based conjoint analysis. This is a combination of adaptive conjoint analysis and choice-based conjoint analysis. In this approach, respondents are first asked to configure their ideal product. Next, product concepts are built, similar to the preferred product of the respondent. These product concepts are presented to the respondents, looking like choice tasks. Here, they need to indicate which concepts they would consider. Considered concepts are included in following product concepts, to identify the best concept. The advantages of this approach are that it has the benefits of a CBC, but this can be done with a smaller respondent sample and it is often perceived as more engaging and realistic. Additionally, more attributes can be used in this study, especially with five attributes or more. Nevertheless, this approach has weaknesses as well. First of all, this type of survey will take two to three times longer than a CBC. Furthermore, it is much more complex to program and analyze. Moreover, it may be excessive for studies with fewer attributes (four or less).

For this research, choice-based conjoint analysis has been chosen because this study contained a small number of attributes and levels and therefore an ACBC would likely be unnecessary. Also, it was possible to obtain a sufficiently large sample size for CBC. Additionally, the employees of BZK were not acquainted with this type of survey. Thus, the survey should not become too complex to answer. Moreover, to increase the number of respondents, the survey should not take too long to answer because BZK employees are fully scheduled during their workweek.

3.2 Choice-based conjoint analysis

Choice-based conjoint analysis is a quantitative research tool, often used in marketing to perform product and pricing research. To perform a choice-based conjoint analysis, first of all, the product or service needs to be split up into components and their levels, also called attributes and levels. When these are determined, a survey needs to be created. The survey will first consist of more general questions to determine a sociodemographic profile of the respondent. After that, the conjoint experiment of the survey is presented, which is made up of eight to twenty so-called choice tasks. These choice tasks are a series of questions containing different combinations of levels from each attribute, created by the conjoint analysis software. Once data is collected, models can be built to quantify preferences. This process will be described using an example in Section 3.2.1.

3.2.1 Example of a choice-based conjoint analysis

To illustrate the process of a choice-based conjoint analysis, a simplified example is used. This example is based on research by Lebeau et al. (2012) and demonstrates the process of determining which features to offer in an electric vehicle.

Step 1 – Develop attributes and levels

In the first step, products or services are split up into their components. These components are also called attributes and levels. In the example, as shown in Figure 3, four attributes are identified: purchase costs, driving range, refuel or recharging time, and maximum speed. For each of these attributes also varying levels have been identified that need to be evaluated. For instance, the driving range can be 300km, 500km, or 700km.

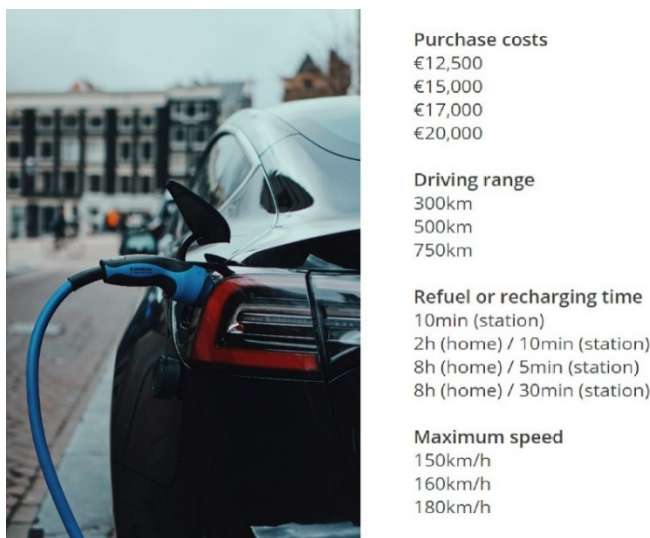


Figure 3 – Example attribute and levels based on Lebeau et al. (2012), photo by Precious Madubuikie on Unsplash

Step 2 – Present choice tasks to the respondents

Once the attributes and levels are determined, the survey is presented to the respondents. In the conjoint experiment, from a set of profiles, respondents need to choose their most preferred one. An example of such a choice task can be found in Figure 4.

If you were in the market for an electric vehicle, and these were your only options, which would you choose?

Purchase costs	€20,000	€20,000	€17,000	€12,500
Driving range	750km	500km	300km	300km
Refuel or recharging time	2h (home) / 10min (station)	8h (home) / 30min (station)	2h (home) / 10min (station)	8h (home) / 5min (station)
Maximum speed	180km/h	160km/h	150km/h	180km/h
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NONE: I wouldn't choose any of these.

Figure 4 – Example choice-task based on Lebeau et al. (2012)

Step 3 – Build a model to quantify preferences

In the last step, insights can be obtained from the collected data. The conjoint software contains statistical modeling, using logit models combined with computational algorithms, that consider the available product options and what alternatives the respondents have chosen. With these models, it can be determined which product features are considered most important and which attribute impacts the respondents' choice most. A visual representation of these results can be found in Figure 5 (for illustration only, and not based on real data).

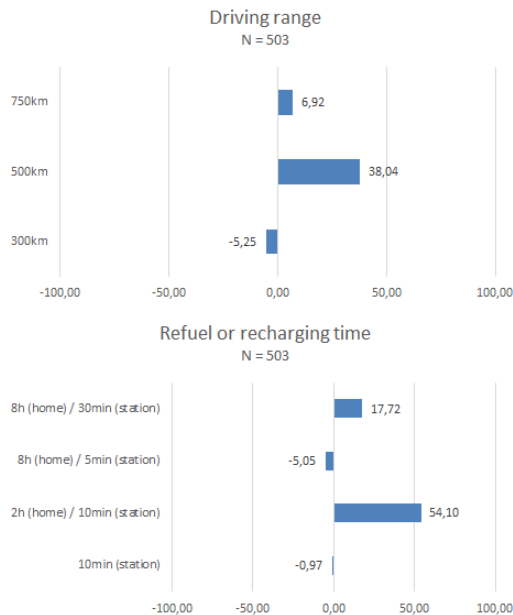


Figure 5 – Example results

3.3 Procedure conjoint analysis

This section will discuss the procedure of this conjoint analysis, which is depicted in Figure 6. The first step was to develop the attributes and levels. This will be discussed extensively in Chapter 4. Next, the questionnaire was designed, as discussed in Chapter 5. Then, the second step of conjoint analysis, data collection, was performed using the questionnaires. This can also be found in Chapter 5. Lastly, in Chapter 6 the statistical analyses used for building a model to quantify preferences, are discussed.

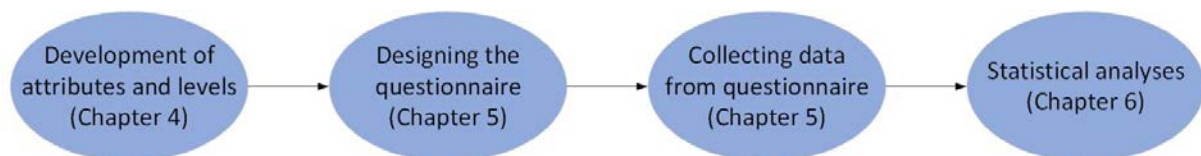


Figure 6 - Flow diagram conjoint analysis procedure

4. Conjoint study: Development of attributes and levels

This study uses conjoint analysis to investigate an employee’s preferences for a hybrid working approach. Conjoint analysis is a quantitative research method that is primarily used in marketing to investigate consumers’ preferences for new products or services.

4.1 Development of attributes and levels

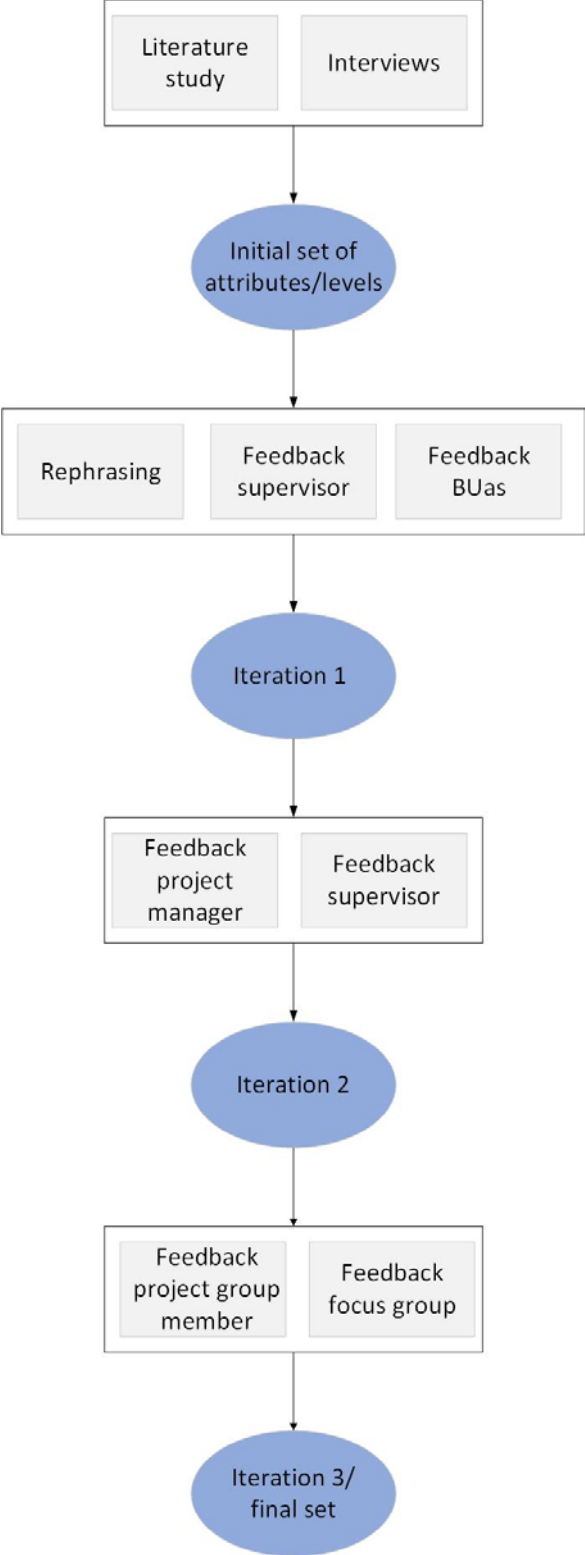


Figure 7 - Development of attributes and levels

The first step in a conjoint analysis is breaking up the intended topic to study into its components. These components are called attributes and levels. According to Wason et al., (2002) attributes in a conjoint analysis must be 1) determinant, 2) easily measured and communicated 3) realistic, 4) compensatory, 5) as such that some levels are preferred over other levels, 6) as a set, sufficient in defining the choice situation, and 7) non-redundant. Additionally, Wason et al. (2002) argue that both theory and practice are needed to identify attributes and their levels. Thus, not only literature should be used to identify attributes and levels, but they should be checked with possible respondents too.

To ensure the attributes met the mentioned requirements, several iterations on the attributes and their levels had to be made. For the attributes to meet these requirements, first, a literature study on hybrid working was conducted (see Chapter 2) which formed the basis of an initial conceptual model. This initial conceptual model was translated into a semi-structured interview. Interviews were held with the people responsible for the implemented hybrid working approach from five different departments, being four managers or executive secretaries from departments, and six members of a hybrid working project group consisting of two departments. The interview guide used for these interviews can be found in Appendix A. These interviews gave more insights into what was considered important in a hybrid working approach, contributing to a better understanding of whether the attributes were determinant, realistic, compensatory, sufficient in defining the choice situation, and non-redundant.

Based on these interviews, an initial set of attributes and levels was created. This initial set of attributes and levels was sent to the company advisor to get her first thoughts about the formulated attributes and their levels. Additionally,

this initial set of attributes was presented to a group of employees of the Breda University of Applied Sciences (BUAs) who are familiar with conjoint analysis. This was to get their perspective and feedback on whether the attributes and levels met the requirements as stated by Wason et al. (2002). Also, this initial set was entered into the software to get a first impression of what they would look like in the choice tasks. All gathered feedback was used for the first iteration of changes. These changes mainly included rephrasing the initial set of attributes and levels because, when entered into the software, the level descriptions were too long to be understandable in the choice tasks. In addition, one extra level was added, which was missing, according to the company supervisor. This all contributed to a better way of communication and more realism of the attributes.

The first iteration was then presented to both the project manager of the BZK hybrid working group and the company supervisor. Here, more changes occurred, as it became clear that the focus of this research should be more on the actual approach instead of the process of implementing hybrid working. This choice was made because the organization was already familiar with dealing with organizational changes and implementing new working approaches, but wanted to get more insights into the possible approaches they could implement for hybrid working. Additionally, focusing on two aspects of hybrid working, namely the approach and the implementation of the approach, would make the choice tasks more complex for the respondents. Thus, the attributes regarding the implementation were removed and the attribute '*Mandatory presence*' could be split up into three different attributes, as shown in Table 1. Furthermore, the levels were changed to better fit the organization's practices. These changes ensured that the attributes met the requirements mentioned by Wason et al. (2002) better.

Then, a focus group was brought together to discuss the attributes and levels and the question for the choice tasks. This focus group consisted of five members of the BZK hybrid working project team. In addition to the focus group, one member of the hybrid working project group, who previously had contributed to the interviews, provided written feedback on the attributes and levels. All the gathered feedback was used to make another iteration of the attributes and their levels. This procedure was another check to see if the attributes met the requirements for attributes as stated by Wason et al. (2002). A visual representation of the process of development can be found in Figure 7. A detailed overview of all the iterations can be found in Appendix B, below in Table 1, an example is shown for the initial attribute '*Mandatory presence*' which only needed to go through two more iterations to come to the final set.

Table 1

Attribute development example

	Initial set	Iteration 1	Iteration 2
Name attribute	<i>Mandatory presence</i>	<i>Mandatory presence</i>	<i>Distribution of days</i>
Levels	<ul style="list-style-type: none"> - 2-3 days/week mandatory presence - 2-3 days/week is expected but not mandatory - No norms on how often to be present 	<ul style="list-style-type: none"> - 2-3 days/week mandatory presence - 2-3 days/week is expected but not mandatory - My work tasks determine my presence - No norms on how often to be present 	<ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office
Name attribute			<i>Flexibility per week</i>
Levels			<ul style="list-style-type: none"> - Fixed days at the office/home - Days at the office/home differ per week
Name attribute			<i>Arrangements hybrid working</i>
Levels			<ul style="list-style-type: none"> - Maximum freedom to choose where I work - Team arrangements without obligations - Team arrangements with flexibility to deviate - Team arrangements that everyone has to stick to

4.2 Final set of attributes

In Table 2 below, the final set of attributes and levels is shown. The entire process of how these came about can be found in Appendix B.

Table 2

Final set of attributes and levels

Attribute	Explanation of attribute	Levels
<i>Distribution of days</i>	This refers to the distribution of the number of days per week at the office or working from home.	<ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office
<i>Flexibility per week</i>	This refers to the structure of the distribution of working from home or working from the office. This includes whether arrangements have been made when to work in the office (e.g. every Thursday in the office, or a fixed day once a month) or whether no arrangements are made.	<ul style="list-style-type: none"> - Fixed days at the office/home - Days at the office/home differ per week
<i>Arrangements hybrid working</i>	This refers to how agreements are made and the degree of obligation of these agreements. This varies from maximum freedom to agreements with the team. There is also variation in compliance to these agreements, for example, agreements without any obligations or agreements that only occasionally can be deviated from.	<ul style="list-style-type: none"> - Maximum freedom to choose where I work - Team arrangements without obligations - Team arrangements with flexibility to deviate - Team arrangements that everyone has to stick to
<i>Attendance per day</i>	This refers to what attendance looks like per day that an employee comes to the office. There could be agreements where employees should be in the office an entire day or only part of a day. However, it could also be that this attendance per day differs from time to time (e.g. this is determined by the appointments an employee has).	<ul style="list-style-type: none"> - All day at the office - Part of the day at the office - Different each time

4.3 Conceptual model

The developed attributes and levels reflect the following conceptual model (see Figure 8). This model shows how the combination of the different attributes lead to a certain approach called the Chosen Approach. This, in turn, affects an employee’s time-spatial fit. However, socio-demographic and job characteristics play a role in this conjoint study as well. These factors could influence respondents’ preferences for certain levels within attributes and, hence, influence the most preferred approach.

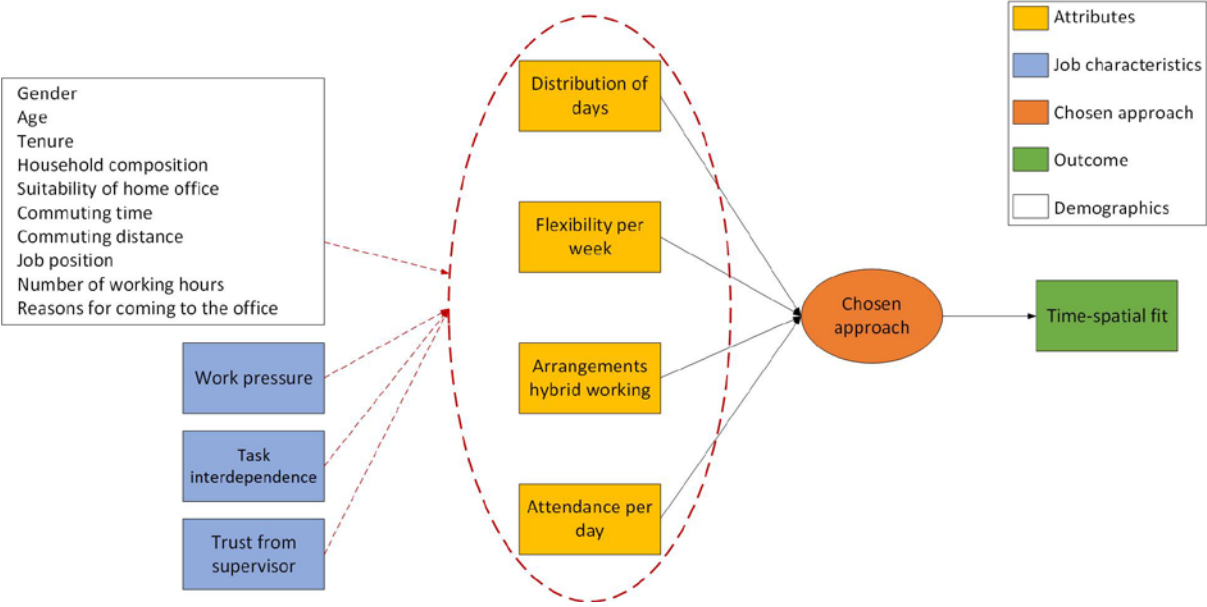


Figure 8 - Conceptual model

5. Conjoint study: Questionnaire

The questionnaire was created using Sawtooth Software. The questionnaire is divided into several parts. A visual representation of this can be found in Figure 9.

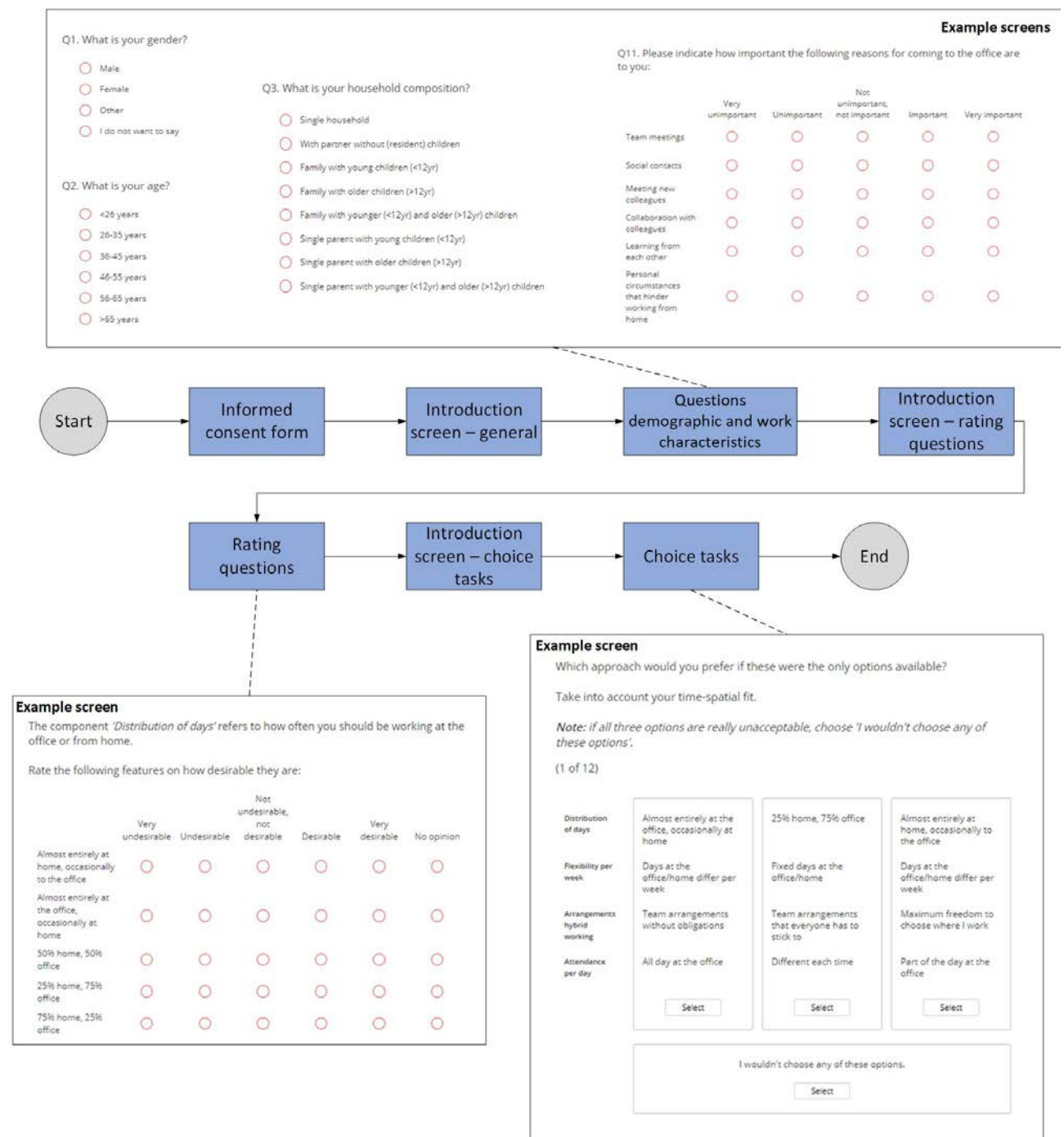


Figure 9 - Questionnaire flow diagram

First, 21 multiple choice questions were asked to get insights into the socio-demographic and job characteristics of the respondent. The measures used in this part of the questionnaire will be explained in Section 5.1. Subsequently, the conjoint experiment was presented to the respondents, for them to indicate their preferences for a hybrid working approach. This part of the questionnaire started with five questions in which the respondent was asked to indicate the desirability of each level per attribute, ranging from 'very undesirable' to 'very desirable'. The option 'no opinion' was included as well. Above

the question, a short introduction was given to the attribute to ensure the respondent interpreted the attribute with its levels in the right way. After these five questions, first, an explanation of the hypothetical situation was given, in which the respondents should imagine themselves being in a situation where they were allowed to work in a hybrid way, without any COVID restrictions. Additionally, an explanation of the term time-spatial fit was given. Then, the respondent was given twelve choice tasks in which three different approaches were presented to choose from. The question above the choice tasks was: *'Which approach would you prefer if these were the only options available?'*. To remind them to include time-spatial fit in their choices, the sentence *'Take into account your time-spatial fit'* was included. The respondent was asked to choose the most preferred option, with the option 'none' being included as well in case the respondent found the three presented approaches unacceptable.

5.1 Measures for multiple-choice questions

The first part of the questionnaire consists of a selection of validated measures or measures that had been included in the most recent employee survey. Because the questionnaire was presented in Dutch, the validated scales in English were first translated to Dutch. The next sections will explain the characteristics that were measured in this first part of the questionnaire.

5.1.1 Demographics

The respondents were asked to provide information about their gender, age, household composition, suitability of their home office, commuting time and distance, job function, the department they are working in, tenure, the number of hours they are working per week according to their contract, and the reasons for coming to the office. This information was gathered because it allows to identify subgroup differences in hybrid working preferences.

Although research shows mixed results for the consequences of hybrid working for men and women (Gajendran & Harrison, 2007; Lyttelton et al., 2020), *gender* was included because it is interesting to know what effect gender has on preferences for hybrid working approaches in the context of the Ministry of the Interior and Kingdom Affairs.

Preferences for hybrid working could be influenced by *age* as well. For instance, older employees might have different preferences and possibly choose differently because they are closer to retirement (Kniffin et al., 2021). In addition, in conversations with the project team, it had become clear that older employees tend to have an established network in the organization, something younger employees still need to build, which influences the need to be present in the office.

Household composition was included because children are the most important feature in family life that influences hybrid working behavior (Zhang et al., 2020). That being said, other motivations for and consequences of hybrid working can be found for households without children as well (Zhang et al., 2020). Therefore, it is likely that household composition influences the preferences for hybrid working approaches.

Suitability of the home office is discussed in the questionnaire because an inadequately equipped home office could lead to all kinds of ergonomic issues (Gerding et al., 2021). Additionally, an internal study of BZK showed that employees who do not have a spare room that could be used as a home office were at risk of experiencing diminished well-being (JongBZK, 2021). Therefore, this could influence the preference for hybrid working approaches.

During COVID-19 and the mandatory working from home policies, workers experienced reduced commuting time as one of the most significant advantages of this new working situation (Ipsen et al.,

2021). Therefore, because employees have become familiar with this advantage, *commuting time* and *commuting distance* could influence an employee's preference for a hybrid working approach.

When employees are working in a hybrid way, they are no longer present in the office at all times, and leaders might experience a fear of losing control over their employees (Gajendran & Harrison, 2007). On the other hand, employees might experience increased autonomy when working in a hybrid way (Gajendran & Harrison, 2007). Therefore, *Job position* could influence perceptions of hybrid working, and thus, it could influence the preference for certain hybrid approaches.

The *Department* an employee is working in is taken into account to establish whether there are differences in preferences per department. Furthermore, it is important to know to which department a respondent belongs to, to possibly explain unexpected outcomes from the analysis, such as the hybrid working approaches the departments had been experimenting with (see Section 7.5.2).

Tenure is selected because preferences for working from home have been found to be strongly influenced by organizational tenure. For instance, employees with a shorter organizational tenure are often less satisfied with working from home (Turetken et al., 2011).

In the Netherlands, about 50 percent of the working population works part-time (CBS, 2021). Individuals only working part-time could have different perceptions of the hybrid working arrangement due to the arrangements being less intense for them, and therefore, arrangements could have different consequences for them compared to employees working full-time (Gajendran & Harrison, 2007). Hence, the *number of hours working per week according to contract* was taken into account in an employee's preference for a hybrid working approach.

Lastly, the ministry was interested in the *reasons for coming to the office* as well and whether this influences preferences for the hybrid working approach. Six reasons were chosen, namely: team meetings, social contacts, meeting new colleagues, collaboration with colleagues, learning from each other, and personal circumstances (e.g., a bathroom renovation). Different people could have different reasons for coming to the office, and these reasons could influence their preferences as well.

5.1.2 Work pressure

The most recent employee survey at BZK (Effectory, 2021) indicated that work pressure was high amongst BZK employees. Some departments experienced more work pressure than others. Therefore, a difference in work pressure may be found among different employees. The Job Demands-Resources and Conservation of Resources theories indicate that the degree of work pressure affects an employee's behavior in dealing with demands and resources (Knight et al., 2021). Therefore, this could explain preferences for certain hybrid working approaches.

Work pressure is measured using three items from the employee satisfaction survey used frequently by the Ministry itself. These items were used because the employees are familiar with them, and the output can be used to identify trends over a more extended period of time. Three items were measured on a seven-point Likert scale ranging from *Completely disagree* to *Completely agree*. The items were: *'I often have more work to do than I can handle'*, *'I regularly have to work overtime because otherwise, I won't be able to finish my work'*, and *'Due to the amount of work I often don't get to my breaks'*. The fourth item on work pressure, also from the BZK employee survey, is *'I experience my work pressure as...'* and was measured on a five-point Likert scale ranging from *'way too low'* to *'way too high'*.

5.1.3 Task interdependence

Teams with higher task interdependence require a higher degree of knowledge sharing, information exchange, and interaction amongst team members. Therefore, when employees are working more often from home, this could hinder their productivity and collaboration (Beauregard et al., 2019; Gajendran & Harrison, 2007). Hence, task interdependence could influence an employee's preferences for hybrid working. Task interdependence was measured using three items from Van Der Vegt et al. (2001), all on a five-point Likert scale ranging from '*strongly disagree*' to '*strongly agree*'. A sample item is '*I have to obtain information and advice from my colleagues in order to complete my work*'.

5.1.4 Trust from supervisor

Hybrid working requires a higher level of trust from a supervisor in their employees because employees are no longer physically present at the office all of the time, which limits direct supervision (Stoker et al., 2021). Low levels of trust could lead to the use of monitoring software or strict detailed agreements to keep control of employees working from home (Gajendran & Harrison, 2007; H. K. Singh & Verma, 2020), which would decrease an employee's preference for working from home. Hence, *trust from supervisor* could influence an employee's preference in the approach for hybrid working. It is measured using three items from De Leede & Kraijenbrink (2014), all on a five-point Likert scale ranging from '*strongly disagree*' to '*strongly agree*'. A sample item is '*My supervisor does trust me*'.

5.2 Procedure

5.2.1 General procedure

Because Dutch is the official language at the ministry, and because the English proficiency level of the BZK employees was unknown, the questionnaire was presented in Dutch. The choice tasks were also developed in Dutch right from the beginning, whereas the survey items coming from proven measures were all translated, except for the questions about *Work pressure* because these questions were taken from the BZK employee satisfaction survey. The attributes and levels, as well as the choice tasks, were checked with various employees throughout the development process, as described in Section 4.1. The final version of the questionnaire was pilot tested with two employees who had never seen the questions or the attributes and levels before.

The questionnaire was created using Sawtooth Software, which is a commonly used software tool for conjoint analysis. An academic grant was obtained to access the full functionalities of the software. The questionnaire was sent to the respondents by email with a one-click link and was open for two weeks. After one week, a reminder email was sent to all respondents to remind employees to fill the questionnaire out in case they missed the previous email and to get the response rate up.

5.2.2 Privacy

Ethical approval for this study was obtained from the TU/e Ethical Review Board (reference: ERB2022ID6). To secure the privacy of the respondents, no personal data, such as names or email addresses, was collected. Additionally, the socio-demographic and job characteristics of the respondents were asked in ranges to reduce the possibility of identifying respondents from their data. Also, the questionnaire was sent to the respondents by email with an anonymous one-click link. This one-click link ensures that respondents are directly sent to the questions in the questionnaire and do not need to fill out a password.

Before the start of the online questionnaire, an on-screen informed consent form was shown to the respondents. This form informed the respondents about the purpose of this study, the way the data was stored, and that they participated voluntarily. The respondents could always terminate their participation at any moment. The informed consent form can be found in Appendix C.

5.2.3 Participants

In total, 457 employees were invited to complete the survey, of which 348 started the survey. After the informed consent form, three employees declined participation. The final dataset contained 263 respondents that finished the survey, which is a response rate of 57.5 percent. This number of respondents is considered sufficient to carry out the analyses because to conduct a proper choice-based conjoint analysis, a large sample group of at least 200 participants is recommended (Sawtooth Software, 2018). Table 3 represents the descriptive statistics of the respondents and in Figure 10 the percentage of respondents per department is shown.

Table 3
Descriptive statistics of respondents

Variable	Value	N	%
Gender	Male	115	43.7%
	Female	147	55.9%
	Don't want to say	1	0.4%
Age	< 26 years	7	2.7%
	26 – 35 years	72	27.4%
	36 – 45 years	55	20.9%
	46 – 55 years	59	22.4%
	56 – 65 years	67	25.5%
	> 65 years	3	1.1%
Household composition	Single household	51	19.4%
	With partner without (resident) children	88	33.5%
	Family with young children (<12yr)	54	20.5%
	Family with older children (>12yr)	42	16.0%
	Family with younger (<12yr) and older (>12yr) children	6	2.3%
	Single parent with young children (<12yr)	5	1.9%
	Single parent with older children (>12yr)	15	5.7%
	Single parent with younger (<12yr) and older (>12yr) children	2	0.8%
Suitable home office	Yes	199	75.7%
	No	18	6.8%
	Sometimes	46	17.5%
Travel distance	<1 km	5	1.9%
	1 – 5 km	44	16.7%
	6 – 10 km	56	21.3%
	11 – 20 km	40	15.2%
	21 – 50 km	58	22.1%
	> 50 km	60	22.8%
Travel time	< 30 min	58	22.1%
	31 – 60 min	84	31.9%
	61 – 90 min	55	20.9%
	91 – 120 min	36	13.7%
	> 120 min	30	11.4%
Job function	Managerial position	19	7.2%
	Non-managerial position	244	92.8%
Tenure	< 2 years	71	27.0%
	2 – 5 years	60	22.8%
	5 – 10 years	45	17.1%
	10 – 15 years	30	11.4%
	> 15 years	57	21.7%
Working hours	< 24 h/week	3	1.1%
	24 – 35 h/week	78	29.7%
	> 36 h/week	182	69.2%

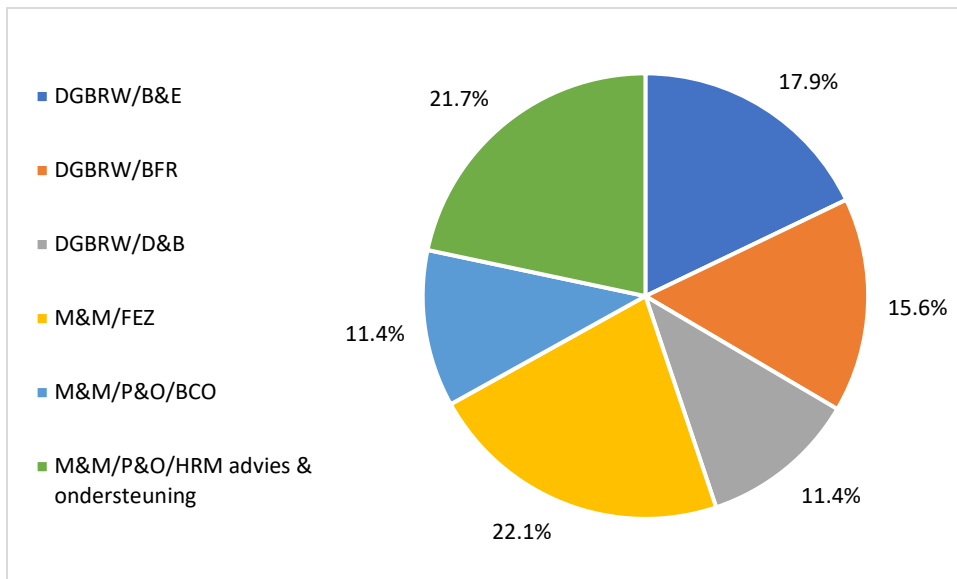


Figure 10 - Percentage of respondents per department

6. Conjoint study: Statistical analyses

6.1 Counting analysis

Using Sawtooth Software a counting analysis is conducted. The counting analysis is used as a simple method for summarizing preferences in a choice-based conjoint (CBC) analysis. In a counting analysis, the number of times a level was chosen is divided by the number of times it was presented to the respondents in the questionnaire. The counting analysis then communicates how often the level was chosen when it was available, and the proportion is ratio scaled. This is useful to get a general feel for the data and see if the respondents behave rationally. Additionally, it indicates whether interaction effects could occur between two attributes. When interactions occur, the combined effect of the attributes is different from the sum of their individual effects. For instance, someone may like chocolate with a preference score of 12 and someone may like cheese with a preference score of 10. However, it is unlikely that a combination of chocolate and cheese will obtain a preference score of 22 but instead a score of -55 because most people will not like such a combination. Hence, an interaction effect occurred for the combination of chocolate and cheese.

6.2 Multinomial logit (MNL) analysis

The MNL or aggregate logit model is widely used in discrete choice analysis. With an MNL analysis, the main effects, being the independent effects per attribute, are estimated, producing partworths for attribute levels. A part-worth can be interpreted as being the average utility value for the analyzed respondents. A utility is a measure of relative desirability, and the higher the utility, the more desired the attribute level. Because the MNL analysis estimates utilities for all main effects, this analysis is not used as the final model but to obtain quick summary results.

This results in the following multinomial logit (MNL) model (Kemperman, 2000):

$$(1) \quad P_h(i) = \frac{\exp(V_i)}{\sum_j \exp(V_j)}$$

Where,

- $P_h(i)$ is the probability that individual h will choose alternative i ;
- V_i is the structural utility for alternative i .

$$(2) \quad V_i = \sum_k \beta_k X_{ik}$$

Where,

- β_k is a parameter indicating the effect of the k th attribute of alternative i ;
- X_{ik} is the k th attribute of alternative i .

In order to test the goodness of fit of the MNL model to the data, the McFadden's Rho Squared (ρ^2) will be used. This measure is analogous to the R^2 in ordinary regression (Train, 2003):

$$(3) \quad \rho^2 = 1 - \frac{LL(\beta)}{LL(0)}$$

Where,

- $LL(\beta)$ is the log-likelihood function at estimated parameters;
- $LL(0)$ is the log-likelihood function at zero parameters

The ρ^2 will provide values between 0 and 1. Here, 1 indicates a perfect fit between the predicted model and the data and 0 indicates that the estimated model is not better than the model without parameters (Train, 2003). ρ^2 values between 0.2 and 0.4 indicate excellent model fits (Louviere et al., 2000).

However, the ρ^2 can only be used in nested models and thus not to compare different models (Train, 2003). The Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) can be used as a model selection criterium when models based on the same dataset need to be compared (Akaike, 1973; Schwarz, 1978). Additionally, both criteria introduce penalty terms for the number of parameters, hence resolving the problem of overfitting (Akaike, 1973; Schwarz, 1978). Models with the lowest AIC and BIC values represent the data best (Train, 2003).

6.3 Latent class (LC) analysis

Latent class analysis is used to investigate segments in CBC data. Respondents are assigned to segments having similar preferences based on the choices they made in the CBC questionnaire. Latent class analysis estimates the part-worth utilities for each segment and simultaneously the probability that a respondent belongs to a segment.

Hence, the utility function changes slightly compared to the MNL. Resulting in the following utility function for an individual h 's choice among I alternatives at choice situation t , given that the respondent belongs to class c (Kemperman & Timmermans, 2006):

$$(4) \quad V_{iht} = \beta'_c X_{iht} + \varepsilon_{iht}$$

Where,

- X_{iht} is a union of all attributes that appear in all utility functions;
- β'_c is a class-specific parameter vector;
- ε_{iht} represents the unobserved heterogeneity for individual h and alternative i in choice situation t .

From this, the following latent class (LC) model is derived (Kemperman & Timmermans, 2006):

$$(5) \quad P(y_{ht} = i | class = c) = \frac{\exp(\beta'_c X_{iht})}{\sum_{i'=1}^I \beta'_c X_{i'ht}}$$

The number of segments or classes that will be used is determined by the researcher. The optimal number of classes can be found by using the minimum AIC and the minimum BIC (Kemperman & Timmermans, 2006). However, estimated group sizes and patterns of utilities can also be used to determine the number of classes.

6.4 Hierarchical Bayes (HB) analysis

The Hierarchical Bayes (HB) analysis is a method to estimate individual partworths with relatively little data from each respondent, by borrowing information from the population describing preferences of other respondents in the same dataset. The Sawtooth Software estimates the HB model using a Monte Carlo Markov Chain algorithm (Sawtooth Software, n.d.-a). The HB model can be regarded as the final model from which respondents' preference choices can be obtained.

As mentioned earlier, the model to estimate partworths can be described as follows (Allenby et al., 2005; Kemperman, 2000):

$$(6) \quad P_h(i) = \frac{\exp(x'_i \beta_h)}{\sum_j \exp(x'_j \beta_h)}$$

Heterogeneity is incorporated into the model with a random-effects distribution, whose mean is a function of observable covariates (z), including an intercept term (Allenby et al., 2005):

$$(7) \quad \beta_h = \Gamma z_h + \xi_h \quad \xi_h \sim MVN(0, V_\beta)$$

Where,

- β_h is a vector of regression coefficients indicating the part-worths of the attribute levels;
- Γ is a matrix of regression coefficients affecting the location of the distribution of heterogeneity given z_h

The model can be written in a hierarchical way as follows (Allenby et al., 2005):

$$(8) \quad y | x, \beta$$

$$(9) \quad \beta | z, \Gamma, V_\beta$$

$$(10) \quad \Gamma | a, A$$

$$(11) \quad V_\beta | w, W$$

Where equations (10) and (11) are prior distributions of hyper-parameters and the values for (a,A) and (w,W) are provided by the analyst. The Markov chain described by equations (8) through (11) is (Allenby et al., 2005):

1. Generate draws of β_h given $\{y_{i,h}, x_i, x_j\}$ and other model parameters. Repeat for all respondents.
2. Generate a draw of Γ given the set of respondent-level parameters $\{\beta_h\}$ and V_β .
3. Generate a draw of V_β given $\{\beta_h\}$ and Γ .
4. Repeat

6.5 Additional analyses on Latent Class results

Additional analyses were conducted to get an understanding of the characteristics of the groups resulting from the LC analysis and to investigate whether certain employee characteristics could predict a preferred approach. Additionally, the preferences of the different groups were linked to the organizational principles for hybrid working.

First, the file of the LC analysis was merged with the total dataset coming from Sawtooth Software. This was done to match the respondent's group number to a respondent's answers regarding demographic and job characteristics. This dataset was then analyzed using SPSS 27.

For the variables *Work pressure*, *Task interdependence*, and *Trust from supervisor* a Cronbach's Alpha was calculated to verify whether these scales were reliable. According to Field (2009), an acceptable value for a Cronbach's Alpha is greater than 0.7. Hence, *Work pressure* ($\alpha = 0.85$), *Task interdependence* ($\alpha = 0.77$), and *Trust from supervisor* ($\alpha = 0.83$) were considered reliable. Next, for these variables, a one-way ANOVA with a Tukey HSD post-hoc test was conducted to compare all pairs of means between the groups to investigate which groups differ from each other. For all other variables with nominal or ordinal measurement levels, a Chi-squared test was performed, because these variables were all categorical variables. For the variables *Age*, *Household composition*, *Travel distance*, *Tenure*, and *Working hours* the values were recoded to increase their suitability for these analyses. The results of and reasons for recoding can be found in Appendix D.

7. Results

7.1 Counting analysis: How often are levels chosen?

The counting analysis gives insights into how often a level was chosen when it was available to the respondent. These insights are called the main effects of the counting analysis. Additionally, counts are examined for two-way joint occurrences of levels. In a counting analysis, the Chi-Square tests are reported for both the main effects and joint effects to indicate whether the proportions differ significantly from each other.

7.1.1 Distribution of days

Considering the attribute '*Distribution of days*', the level '*75% home, 25% office*' was the most popular, having been chosen 41.7 percent of the times it occurred. However, the level '*50% home, 50% office*' has been chosen almost equally as much, being chosen 40.4 percent of the times it appeared. The level '*Almost entirely at the office, occasionally at home*' was the least favorite, having been selected 9.7 percent of the times it occurred. The Chi-Square test is significant ($\chi^2 = 558.697$, $df = 4$, $p < .01$), and therefore it can be stated that '*Distribution of days*' has an impact on the choice of a hybrid working approach.

Table 4

Counting analysis distribution of days

Level	Proportion
Almost entirely at home, occasionally to the office	.252
Almost entirely at the office, occasionally at home	.097
50% home, 50% office	.404
25% home, 75% office	.173
75% home, 25% office	.417

7.1.2 Flexibility per week

The levels within the attribute '*Flexibility per week*' are almost equally preferred. The level '*Fixed days at the office/home*' was chosen 26.4 percent of the times when it occurred to the respondents whereas the level '*Days at the office/home differ per week*' was chosen 27.3 percent of the time it occurred. The Chi-Square test is not significant ($\chi^2 = .802$, $df = 1$, *n.s.*) which suggests that the attribute has little impact on the choice of a hybrid working approach. However, the attribute '*Flexibility per week*' only contains two levels which could also explain the insignificance because disagreement between individuals could mask the impact of the attribute.

Table 5

Counting analysis flexibility per week

Level	Proportion
Fixed days at the office/home	.264
Days at the office/home differ per week	.273

7.1.3 Arrangements hybrid working

Within the attribute '*Arrangements hybrid working*', the level '*Team arrangements with flexibility to deviate*' was the most popular, chosen 31.1 percent of the time it was available. The level '*Team arrangements that everyone has to stick to*' has been considered the least favorite, chosen 21.5 percent of the time it was shown to the respondents. Although the differences appear to be small, the

Chi-square test is significant ($\chi^2 = 42.193, df = 3, p < .01$), and therefore 'Arrangements hybrid working' has an impact on the choice of a hybrid working approach.

Table 6
Counting analysis arrangements hybrid working

Level	Proportion
Maximum freedom to choose where I work	.270
Team arrangements without obligations	.278
Team arrangements with flexibility to deviate	.311
Team arrangements that everyone has to stick to	.215

7.1.4 Attendance per day

The levels within the attribute 'Attendance per day' have almost all been preferred equally by the respondents. The level most often chosen was 'Different each time', being chosen 28.9 percent of the time it was available for the respondent and the least chosen level was 'Part of the day at the office', being chosen 23.6 percent of the time. Although differences appear to be small, the Chi-Square test was significant ($\chi^2 = 18.395, df = 2, p < .01$) indicating 'Attendance per day' has an impact on the choice of a hybrid working approach.

Table 7
Counting analysis attendance per day

Level	Proportion
All day at the office	.280
Part of the day at the office	.236
Different each time	.289

7.1.5 Interactions

The counting analysis can also indicate whether interaction effects occur between the different attributes by testing for joint effects. When interactions between attributes occur, the combined effect of two attributes is not equal to the sum of their utility scores. These interaction terms may be added to the model, especially in aggregate analyses. In individual-level estimation, such as the Hierarchical Bayes or Latent Class analysis, it is not necessary to model interaction effects. Also, in practice, a simple additive model without modeled interactions works quite well, and implementing interaction terms in the model may lead to overfitting (Sawtooth Software, n.d.-b). In the current analysis, almost no interaction effects occurred because the tests for joint effects measures were mostly not significant (see Appendix E). Only for the interaction 'Distribution of days x Attendance per day' did the software provide a significant value ($\chi^2 = 18.553, df = 8, p = .02$). This effect implies that preference for a level within the attribute 'Distribution of days' impacts the level chosen within the attribute 'Attendance per day'. However, the interaction effect will not be included with an interaction term in the model because only one interaction effect could be found and it is desirable to keep the model simple to prevent overfitting.

7.2 Multinomial logit analysis: First indication of preferences

The multinomial logit (MNL) model gives a first indication of the main effects of the attributes with their corresponding levels. This is reflected in the goodness of fit of this model, which can be considered fine ($\rho^2 = 0.10$) but only gives aggregate results. The effects of the levels are expressed in

utility scores. The higher the score, the more preferred the level is within an attribute. Utility scores are relative measures within an attribute, meaning that a negative score does not imply an employee dislikes this level, it means that this employee considers the level less favorable compared to other levels. In other words, it is a relative and not an absolute score.

7.2.1 Distribution of days

A visual representation of the utility scores for the attribute ‘*Distribution of days*’ can be found in Figure 11. For this attribute, the level with the lowest utility score is ‘*Almost entirely at the office, occasionally at home*’ ($V = -1.05$), indicating this is the least preferred option. Also, the level ‘*25% home, 75% office*’ ($V = -0.41$) is not favored by the BZK employees compared to the other options available. The level ‘*Almost entirely at home, occasionally at the office*’ ($V = 0.05$) is preferred more by the employees compared to the previously mentioned levels. The levels ‘*75% home, 25% office*’ ($V = 0.72$) and ‘*50% home, 50% office*’ ($V = 0.68$) have almost equally high utility scores, indicating that these levels are preferred most by the BZK employees.

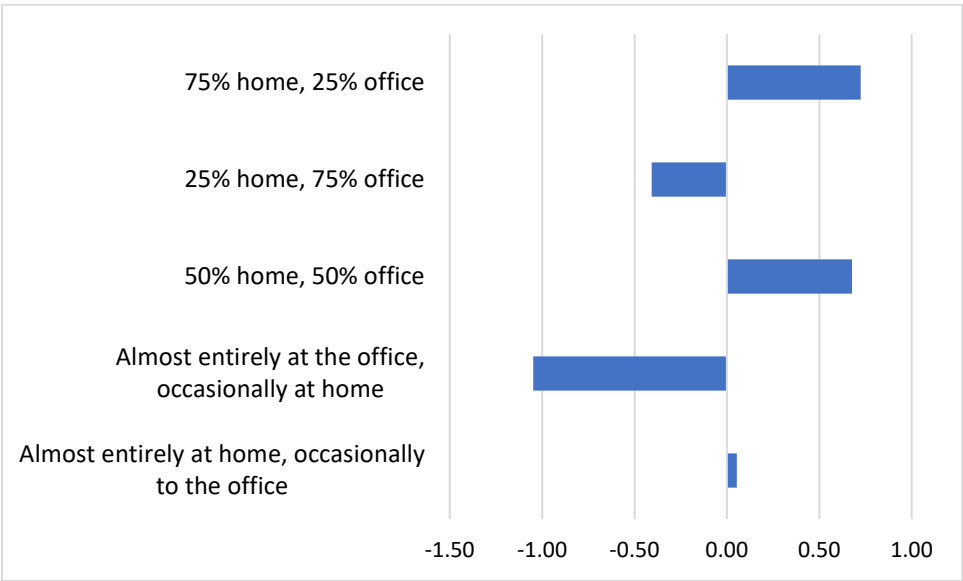


Figure 11 - MNL utility scores distribution of days

7.2.2 Flexibility per week

The utility scores of the attribute ‘*Flexibility per week*’ are shown in Figure 12. Here, the highest utility score and thus the most preferred level is ‘*Days at the office/home differ per week*’ ($V = 0.02$). Because this attribute only contains two levels and a utility score is a relative measure, this automatically gives the other level ‘*Fixed days at the office/home*’ ($V = -0.02$) a negative utility score, and therefore, this level is less preferred by the employees.

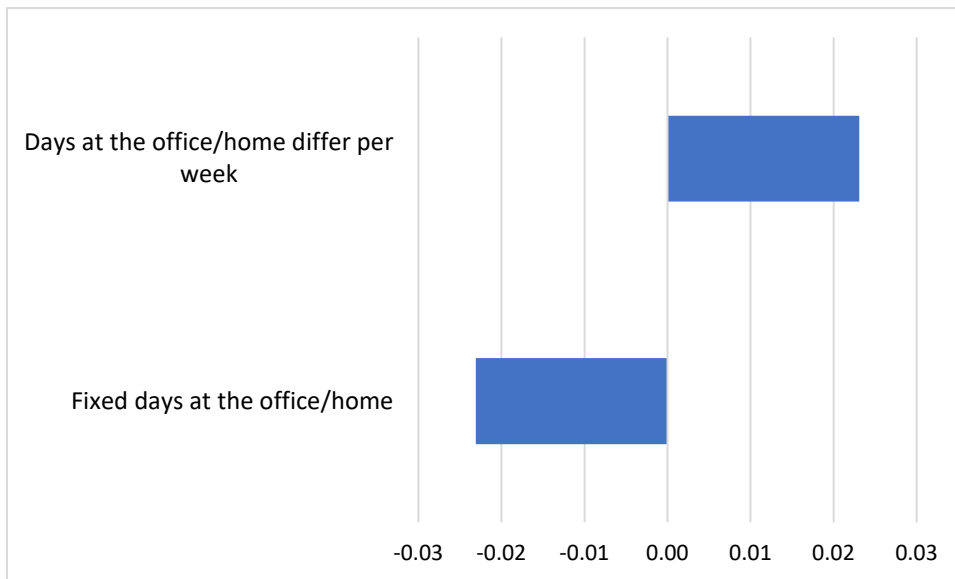


Figure 12 - MNL utility scores flexibility per week

7.2.3 Arrangements hybrid working

The visualization of the utility scores for the attribute *'Arrangements hybrid working'* can be found in Figure 13. The level with the lowest utility score is *'Team arrangements that everyone has to stick to'* ($V = -0.27$), meaning this level is least preferred within this attribute. The most preferred level, the level with the highest utility score, is the level *'Team arrangements with flexibility to deviate'* ($V = 0.21$). The levels *'Team arrangements without obligations'* ($V = 0.04$) and *'Maximum freedom to choose where I work'* ($V = 0.02$) have small positive utility scores, indicating there is only little preference for these levels compared to the other options available.

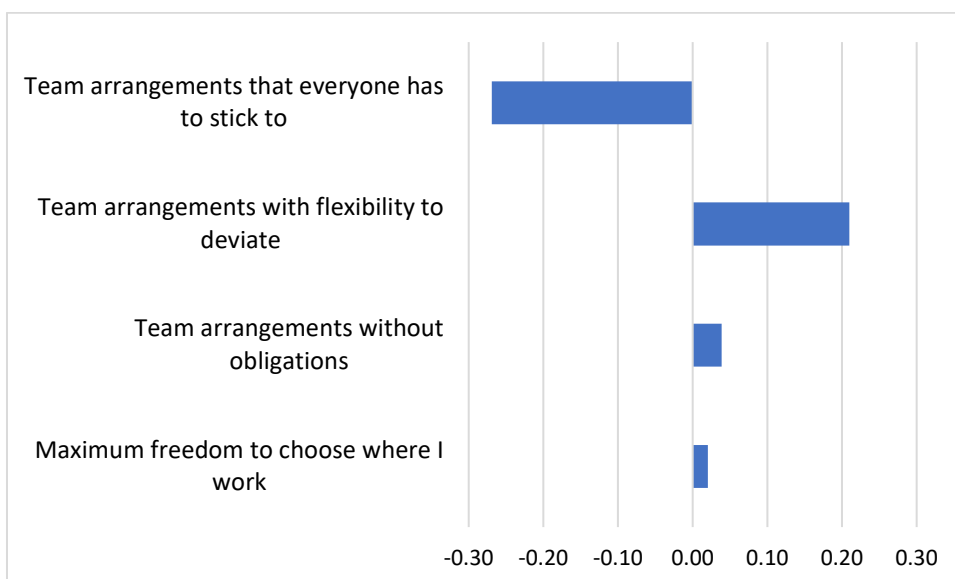


Figure 13 - MNL utility scores arrangements hybrid working

7.2.4 Attendance per day

Figure 14 shows the utility scores for the attribute *'Attendance per day'*. Here, the least favorable level, with the lowest utility score is *'Part of the day at the office'* ($V = -0.15$). The most favorable level is *'Different each time'* ($V = 0.10$), having the highest utility score as well. Moreover, the level *'All day at*

the office' ($V = 0.05$) is preferred over the level *'Part of the day at the office'* because the utility score is higher.

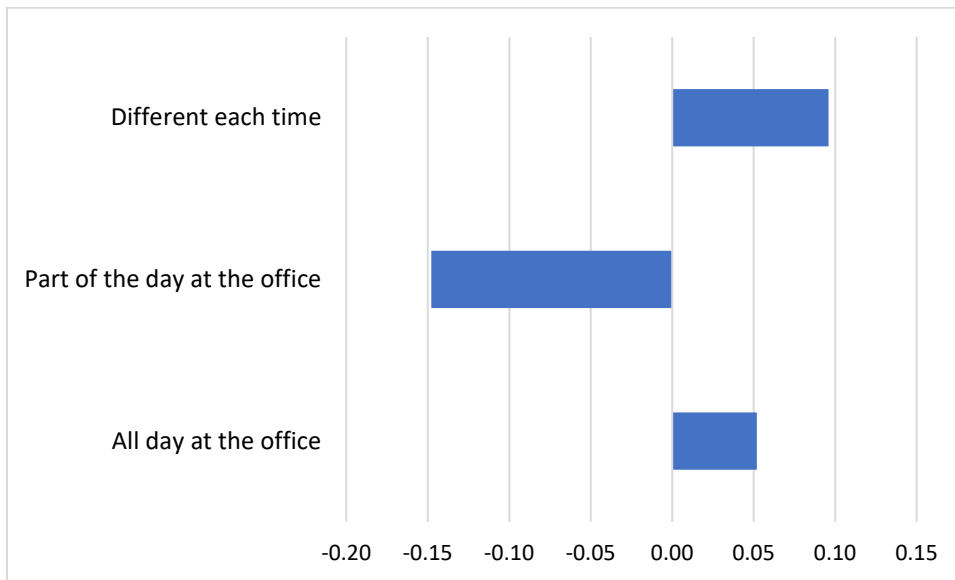


Figure 14 - MNL utility scores attendance per day

7.3 Hierarchical Bayes analysis: Final model for preferences

This section will discuss the results of the Hierarchical Bayes analysis, which is used to estimate the set of utilities for each individual respondent. Compared to the multinomial logit analysis, it gives individual utility sets instead of one set of utilities for the entire sample. This improves the quality of these utilities and tends to give better simulations. First, the scores of the average utilities will be discussed per attribute. The higher the average utility score of a level, the more preferred the level is. These average utilities are relative measures, meaning that when a level scores low, this does not necessarily mean employees dislike this level; it is just that they do not prefer it as much as the other levels available.

After the average utility scores, the importance scores of the attributes will be discussed. These will indicate how important attributes are when choosing hybrid working approaches.

7.3.1 Results per attribute

7.3.1.1 Distribution of days

The average utility scores of the levels of *'Distribution of days'* can be found in Figure 15. Here, the highest average utility scores are for the level *'75% home, 25% office'* ($V = 64.4$) and *'50% home, 50% office'* ($V = 64.4$). This implies that BZK employees equally prefer these levels most, compared to the other levels within this attribute. The least preferred level for this attribute is *'Almost entirely at the office, occasionally at home'* ($V = -93.3$). In addition, the levels *'25% home, 75% office'* ($V = -25.4$) and *'Almost entirely at home, occasionally at the office'* ($V = -10.0$) are less preferred.

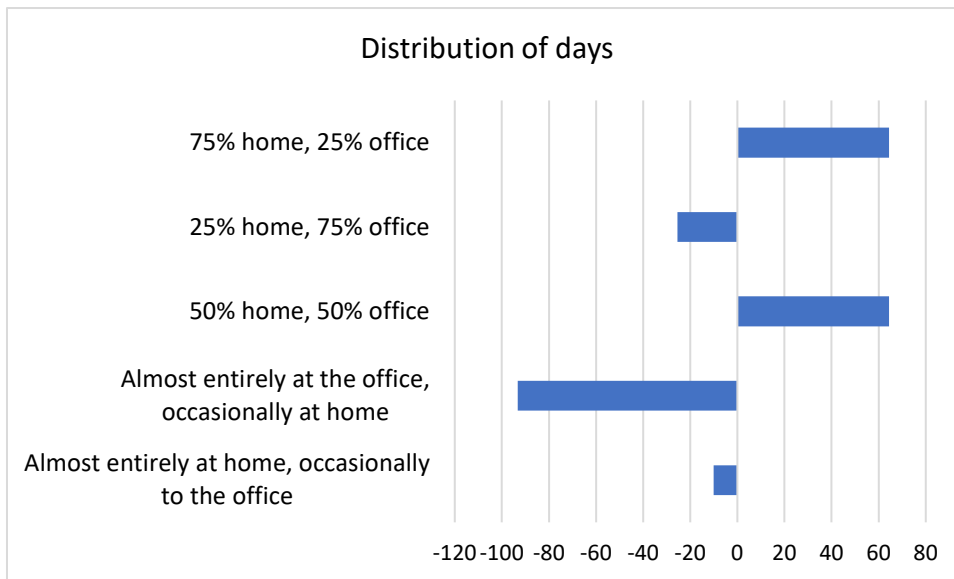


Figure 15 - Average utility scores Distribution of days

7.3.1.2 Flexibility per week

The average utility scores of the levels of the attribute 'Flexibility per week' can be found in Figure 16. Here, the average utility level 'Days at the office/home differ per week' ($V = 1.9$) has a higher utility score compared to the level 'Fixed days at the office' ($V = -1.9$). However, it should be noted that it is a low utility score, hence these levels contribute very little to the choice-making of an employee.

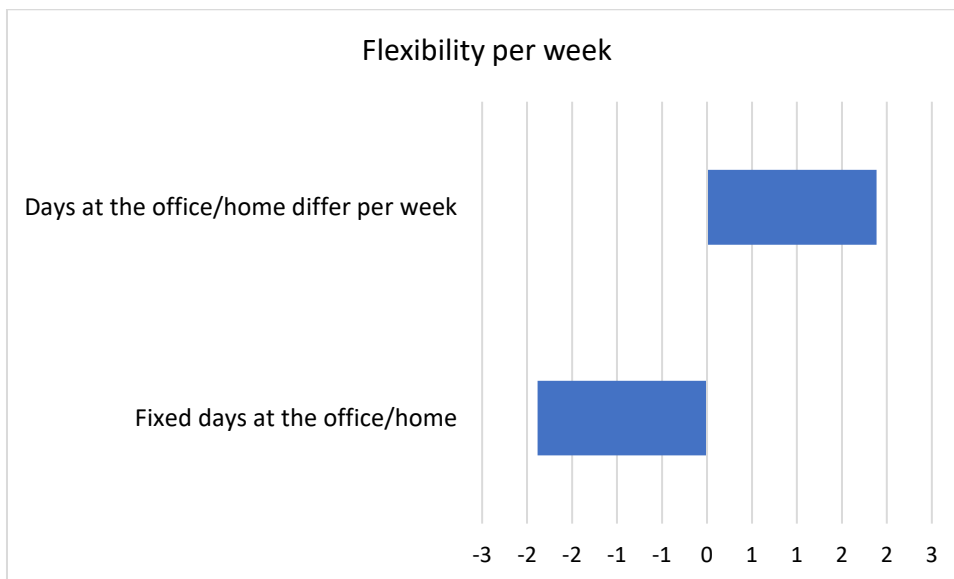


Figure 16 - Average utility scores Flexibility per week

7.3.1.3 Arrangements hybrid working

The average utility scores of the attribute 'Arrangements hybrid working' are presented in Figure 17. The level 'Team arrangements that everyone has to stick to' ($V = -23.4$) is preferred the least by BZK employees, compared to the other options available. The level 'Team arrangements with flexibility to deviate' ($V = 19.1$) is preferred the most. The levels 'Team arrangements without obligations' ($V = 2.1$) and 'Maximum freedom to choose where I work' ($V = 2.2$) are almost equally preferred by the employees.

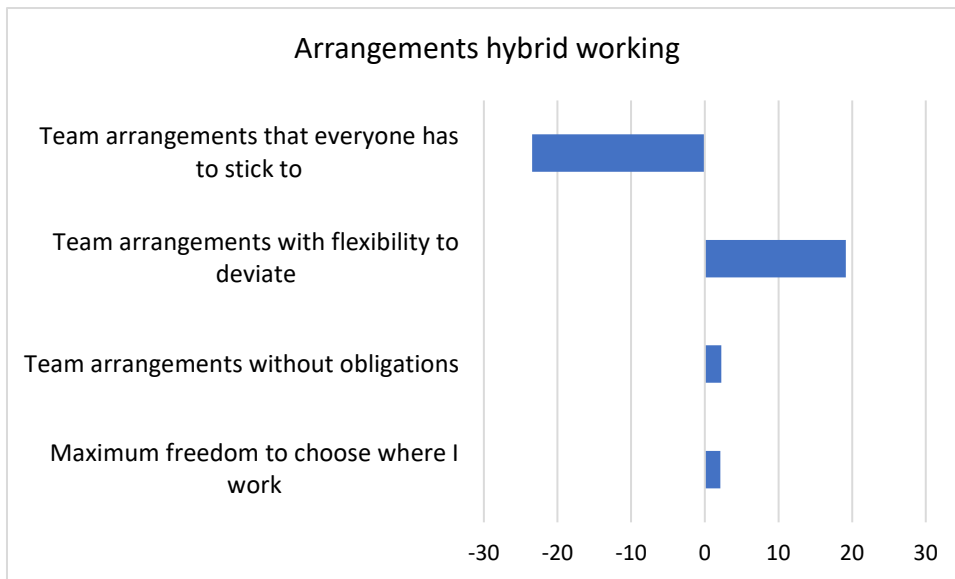


Figure 17 - Average utility scores Arrangements hybrid working

7.3.1.4 Attendance per day

Figure 18 depicts the average utility scores for the levels of the attribute 'Attendance per day'. The level 'Part of the day at the office' ($V = -12.2$) is preferred the least by the BZK employees. The level 'Different each time' ($V = 8.1$) is preferred the most by the employees, leaving the level 'All day at the office' ($V = 4.1$) in the middle.

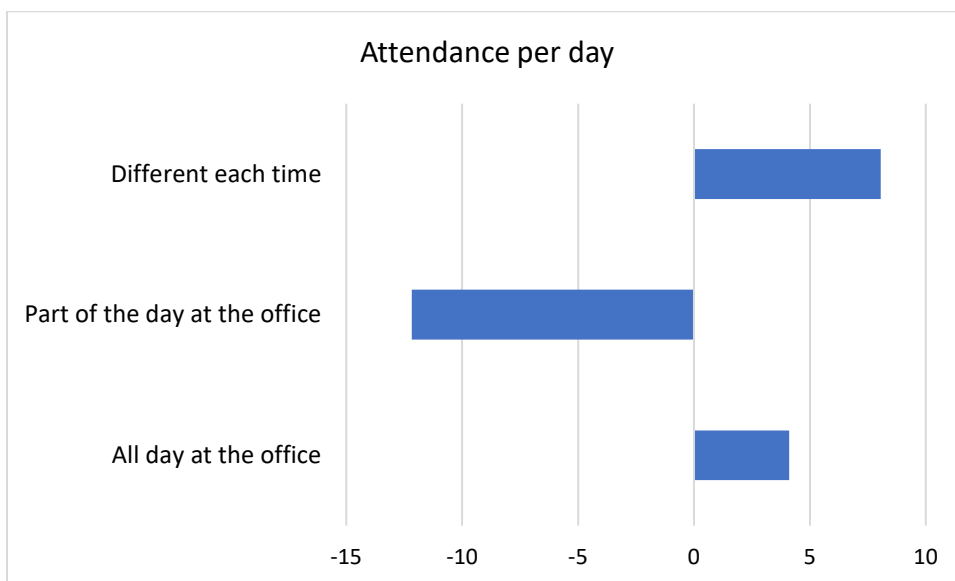


Figure 18 - Average utility scores Attendance per day

7.3.2 Importances

Figure 19 shows a visual representation of the importance scores of the attributes for a hybrid working approach. An importance score shows how much impact an attribute has on the choice of a hybrid working approach. In this case, the attribute which has the largest impact on the choice of a hybrid working approach is 'Distribution of days' with an importance score of 67.8. The attribute with the least impact is the attribute 'Flexibility per week' with an importance score of 5.6. The attributes 'Arrangements hybrid working' and 'Attendance per day' have almost similar scores and therefore have almost an equal impact on the choice for a hybrid working approach. These scores are respectively

14.6 and 12.1. Thus, when the distribution of days matches the preferences of the employees, it is more likely that employees will be satisfied with the chosen approach, whereas the impact of 'Flexibility per week' only has little impact and thus also on the satisfaction with the chosen approach. Therefore, it does not matter as much when this attribute does not perfectly match the preferences of employees.

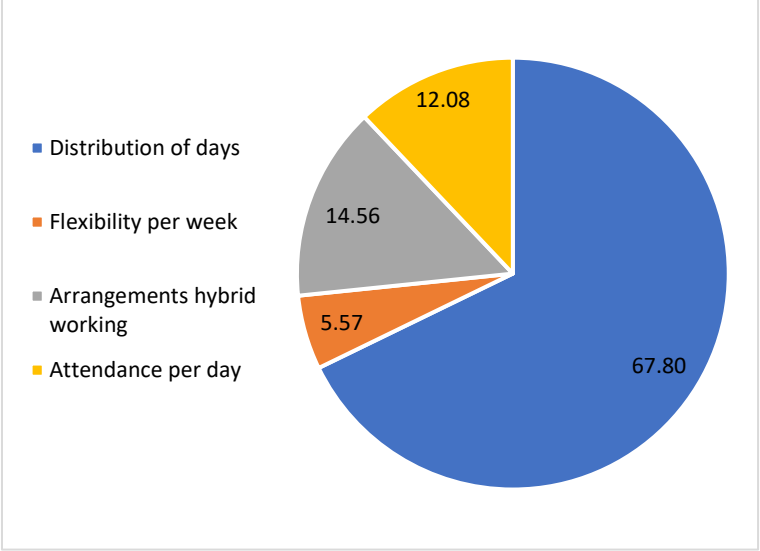


Figure 19 - Importance scores

7.4 Latent class analysis: Identifying groups in the data

The latent class analysis is used to identify segments in the data. The software was asked to run the computation five times, each time estimating solutions for 2 to 5 groups. The summary of the best replications can be found in Table 8 below.

Table 8 Summary of best replications

Groups	Repl.	Log-likelihood	Pct Cert	AIC	CAIC	BIC	ABIC	Chi-Square	Rel. Chi-Square
2	2	-3443,30	21,30	6932,61	7094,92	7071,92	6998,84	1863,68	81,03
3	4	-3179,69	27,32	6429,38	6676,38	6641,38	6530,17	2390,91	68,31
4	2	-2965,66	32,22	6025,33	6357,01	6310,01	6160,67	2818,96	59,98
5	4	-2871,83	34,36	5861,65	6278,02	6219,02	6031,55	3006,64	50,96

Note. Groups = number of groups identified from the data. Repl. = the number of replication. Pct. Cert. = certainty percentage. AIC = Akaike Information Criterion. CAIC = Consistent Akaike Information Criterion. BIC = Bayesian Information Criterion. ABIC = Akaike Bayesian Information Criterion. Rel. Chi-Square = relative Chi-Square.

To find the optimal number of classes, one should take the model with the minimum AIC and minimum BIC. In this case, this would be the solution with five classes (AIC = 5861.65; BIC = 6219.02). However, the results show a larger increase in Chi-squared values from a two-group solution to a three-group solution and again from a three-group solution to a four-group solution. Nonetheless, beyond that, this increase is much smaller. This is also the case for the Pct Cert statistics, which could indicate that four groups might be the appropriate number of classes. Additionally, the AIC, CAIC, BIC, and ABIC values decrease more going from a two-group solution to a three-group solution and also from a three-group solution to a four-group solution, compared to going from a four-group solution to a five-group solution.

It is advised to remove segments with a small group size (< 10%) (Sawtooth Software, 2020). Taking into consideration the obtained segment sizes, as can be found in Table 9, the five-group solution contains a small group of only 8.7% and thus can be disqualified. A practical perspective supports this as well. Implementing a hybrid working approach that will only satisfy 8.7% of the employees, in this case, 22 employees, might not be worthwhile when these employees could still be satisfied with an approach that is not their most preferred one.

The goodness of fit of the four-group solution model is excellent ($\rho^2 = 0.32$). Also, the AIC and BIC values of the four group solution model (AIC = 6025,33; BIC = 6310,01) have decreased compared to the AIC and BIC values of the MNL model (AIC = 7907.88; BIC = 7974.51), indicating an improved fit. A more detailed description of the characteristics of and differences per group can be found in Section 7.5.

Table 9
Segment sizes LC analysis

	Group 1	Group 2	Group 3	Group 4	Group 5
Segment Sizes 2 groups	43.5%	56.5%			
Segment Sizes 3 groups	22.2%	42.9%	34.9%		
Segment Sizes 4 groups	21.2%	30.1%	30.4%	18.3%	
Segment Sizes 5 groups	17.6%	17.1%	27.6%	29.0%	8.7%

7.5 Additional analyses latent classes: Characteristics of the groups.

To get a better understanding of the different groups of employees found with the LC analysis, additional analyses were needed. This section will dive into the preferences per group, the employee characteristics per group with the differences between groups. Lastly, employee preferences will be linked to the organizational principles concerning hybrid working.

7.5.1 Approaches and importances per class

Before examining the results of the approaches, it is important to know how to interpret the results. The approach that is shown in Table 10 is the dominant preference per group. This means this approach consists of the levels with the highest utility scores. However, this would not necessarily mean that employees would be dissatisfied with an approach that slightly differs from their dominant preference. Examples of this are shown in Section 7.5.3.

Table 10*Preferred approach per group*

	Group 1	Group 2	Group 3	Group 4
Segment Sizes	21.7%	30.0%	30.4%	17.9%
Distribution of days	50% home, 50% office	Almost entirely at home, occasionally to the office	50% home, 50% office	25% home, 75% office
Flexibility per week	Fixed days at the office/home	Days at the office/home differ per week	Days at the office/home differ per week	Fixed days at the office/home
Arrangements hybrid working	Team arrangements with flexibility to deviate	Team arrangements with flexibility to deviate	Team arrangements with flexibility to deviate	Team arrangements with flexibility to deviate
Attendance per day	All day at the office	Different each time	Different each time	All day at the office

In Table 10 the segment sizes per group are shown as well as the most preferred approach per group. Group 1 contains 21.2% of the respondents (n = 57). Their preference leans towards working 50% at the office and 50% from home. These days are fixed; they arrange these days with their team but with the flexibility to deviate from this, and they want to be present all day when they are at the office. Group 2 contains 30.1% of the respondents (n = 79). The dominant preference of this group is to keep on working almost entirely from home and come to the office occasionally. Additionally, they want the days on when to be present to be flexible, and also they want to make arrangements with their team, with the possibility of deviating from these arrangements. When they come to the office, their attendance could differ each time. Group 3 contains 30.4% of the respondents (n = 80). This group's preference leans towards an approach in which they can work 50% from home and 50% in the office. In terms of flexibility, the days at the office or home differ per week. Again, arrangements are made with the team, but there is flexibility to deviate from these arrangements. Also, their attendance per day may differ each time. Lastly, Group 4 contains 18.3% of the respondents (n = 47). This group's dominant preference leans towards working from home 25% of the time and 75% of the time at the office. The days on which they are to be present are fixed, and arrangements are made within the team, but there is the possibility to deviate from these arrangements. When the employees are present, their attendance per day can differ each time.

Figure 20 depicts the importance scores of the attributes for a hybrid working approach per group. For each of the four groups, the attribute '*Distribution of days*' is the attribute with the most impact on the choice for a hybrid working approach (as it was for the overall group of respondents). However, compared to the other groups, Group 1 has a much lower importance score for this attribute (58.91 compared to 71.48, 76.22, and 75.79), indicating that this has less of an impact on their choices compared to the other groups. Additionally, the attribute '*Flexibility per week*' is for all groups the attribute with the least impact on an approach for hybrid working. Again, the amount of impact differs per group. Group 3 and Group 4 (1.53 and 3.03 respectively) value this attribute less when making

choices compared to Group 1 and Group 2 (7.65 and 5.19 respectively). Considering the attribute 'Arrangements hybrid working', Group 1, Group 2, and Group 3 value this attribute nearly equally in importance when making choices regarding hybrid working approaches (15.95, 14.64, and 14.34 respectively). Group 4 values this considerably less compared to the other groups (6.84 compared to 15.95, 14.64, and 14.34). Lastly, examining the attribute 'Attendance per day'; this has almost an equal impact on choosing for a hybrid working approach for Group 2 and Group 3 (8.69 and 7.91 respectively). However, this impact is bigger for Group 1 and Group 4 (17.46 and 14.34, respectively). It can be concluded that, as for the overall importance scores, it is important that the chosen level for the distribution of days matches the preferences of the employees for them to be satisfied with the chosen approach. Also here, the impact of 'Flexibility per week' is little and thus does not matter as much, compared to the other attributes.

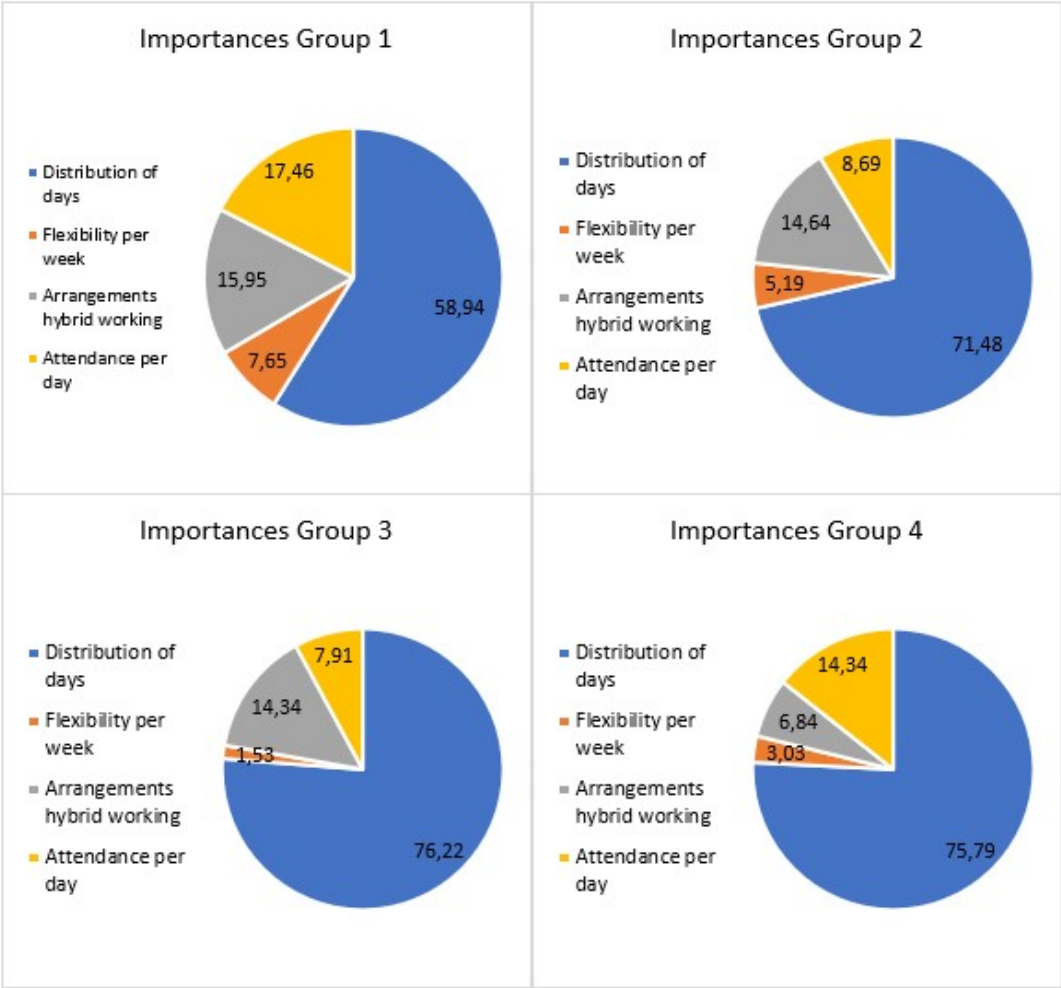


Figure 20 - Importances per group

7.5.2 Characteristics and differences between groups

In this section, the differences between groups will be investigated. These differences are divided into demographic characteristics, job characteristics, and reasons for coming to the office. However, the tables below will give the dominant characteristics for the variables analyzed with Chi-squared analysis, so a more detailed overview of the characteristics per group can be found in Appendix F.

Table 11*Dominant demographic characteristics per group*

	Group 1 (21.7%)	Group 2 (30.0%)	Group 3 (30.4%)	Group 4 (17.9%)	Sign.
Gender	Female (54.4%)	Female (55.1%)	Female (60.0%)	Female (56.1%)	n.s.
Age	≥ 56 years (38.6%)	46 – 55 years (29.1%) ≥ 56 years (29.1%)	≤35 years (37.5%)	≤35 years (30.0%)	p<.001
Household composition	With partner, without (resident) children (38.6%)	With partner, without (resident) children (35.4%)	Household with young (<12yr) children (41.3%)	With partner, without (resident) children (33.5%)	p=.006
Suitable home office	Yes (77.2%)	Yes (83.5%)	Yes (77.5%)	Yes (57.4%)	p=.030
Travel distance	6-10km (28.1%)	6-10km (25.3%) >50km (25.3%)	21-50km (25.0%)	<5km (29.8%)	n.s.
Travel time	31-60min (35.1%)	31-60min (30.4%)	31-60min (30.0%)	31-60min (34.0%)	n.s.

To investigate demographic differences between the groups, a Chi-squared analysis was used. As shown in Table 11, significant differences were found for *Age*, *Household composition*, and *Suitable home office*. For *Age*, Group 1 and Group 2 contained the highest percentage of older employees ('46-55yr', '≥56yr'), whereas Group 3 and Group 4 contained the highest percentage of younger employees ('≤35yr', '36-45yr'). However, this does not mean that the other age categories are not represented. Nevertheless, younger employees are overrepresented in Groups 3 and 4, whereas older employees are overrepresented in Groups 1 and 2. For *Household composition*, most employees in Group 1, Group 2, and Group 4 had no (resident) children in their household. Contrarily, employees in Group 3 lived mostly with children, who mostly were below the age of 12. Considering *Suitable home office*, most employees have a suitable place to work from at home ('yes'). Nonetheless, within Group 4 this number is substantially smaller compared to the other groups.

Table 12*Dominant job characteristics per group*

	Group 1 (21.7%)	Group 2 (30.0%)	Group 3 (30.4%)	Group 4 (17.9%)	Sign.
Leadership function	No (87.7%)	No (97.5%)	No (92.5%)	No (91.5%)	n.s.
Department	M&M/P&O/HR M A&O (29.8%)	M&M/P&O/HR M A&O (27.8%)	DGBRW/BFR (22.5%)	DGBRW/B&E (27.7%)	p=.048
Tenure	>10 years (40.4%)	>10 years (39.2%)	2-5 years (32.5%)	<2 years (40.4%)	p=.029
Working hours	Full-time (66.7%)	Full-time (60.8%)	Full-time (71.3%)	Full-time (83.0%)	n.s.
Work pressure	4.26 (1.470)	3.96 (1.283)	4.11 (1.147)	3.96 (.980)	n.s.
Task interdependence	3.50 (.737)	3.33 (.834)	3.72 (.610)	3.82 (.636)	p<.001
Trust from supervisor	4.26 (.571)	4.22 (.718)	4.32 (.522)	4.34 (.554)	n.s.

For *Leadership function*, *Department*, and *Tenure* a Chi-squared test was used to investigate differences between groups. As shown in Table 12, significant differences were found for *Department* and *Tenure*. For *Department*, the ratio of employees from different departments was fairly equal for Group 1 and Group 2. In both these groups, 'M&M/P&O/HRM-A&O' was represented most, followed by 'M&M/FEZ'. The least represented department in these groups was 'DGBRW/D&B'. The fact that 'DGBRW/D&B' was represented least, could be explained because this department already worked more often in the office when they were allowed to experiment with hybrid working. In Group 3, there was a more equal division of departments, with 'DGBRW/BFR' represented most and 'M&M/P&O/BCO' represented the least. Lastly, in Group 4 'DGBRW/B&E' was represented most, followed by 'M&M/FEZ' whereas 'M&M/P&O/HRM-A&O' was represented least. This could be explained by the fact that 'DGBRW/B&E' already had plans to work more often in the office when departments were allowed to experiment with hybrid working, and their working group was promoting employees to come back to the office. In terms of *Tenure*, Group 1 and Group 2 are fairly similar, with the highest percentage representing employees with a higher tenure ('>10yr' or '5-10yr'). On the other hand, in Group 3 and Group 4, the highest percentages of employees had a shorter tenure ('<2yr' or '2-5yr').

To indicate differences between groups for *Work pressure*, *Task interdependence*, and *Trust from supervisor* a one-way ANOVA with Tukey HSD post-hoc test was performed. As can be found in Table 12, which also shows the mean scores for *Work pressure*, *Task interdependence*, and *Trust from supervisor*, only for *Task interdependence* ($p < .001$) a significant difference between the groups could be found. This difference could be found between Group 2 and Group 3 ($p = .004$) and between Group 2 and Group 4 ($p = .001$). Thus, Group 2 experiences less task interdependence compared to both Group 3 and Group 4. A visual representation of these differences between groups can be found in Appendix G.

Table 13*Reasons for coming to the office per group*

	Group 1 (21.7%)	Group 2 (30.0%)	Group 3 (30.4%)	Group 4 (17.9%)	Sign.
Reasons office – Team meetings	4.18 ^{a,b} (.984)	3.71 ^{a,c,d} (1.052)	4.26 ^c (.882)	4.51 ^{b,d} (.621)	p<.001
Reasons office – Social contacts	4.28 ^{a,b} (.940)	3.80 ^{a,c,d} (.838)	4.44 ^{c,e} (.777)	4.79 ^{b,d,e} (.549)	p<.001
Reasons office – Meeting new colleagues	4.28 ^{a,b} (.726)	3.89 ^{a,c,d} (.698)	4.34 ^{c,e} (.856)	4.72 ^{b,d,e} (.540)	p<.001
Reasons office – Collaboration with colleagues	4.14 ^{a,b} (.875)	3.35 ^{a,c,d} (1.038)	4.11 ^{c,e} (.857)	4.70 ^{b,d,e} (.462)	p<.001
Reasons office – Learning from each other	4.07 ^{a,b} (.904)	3.29 ^{a,c,d} (1.123)	4.04 ^{c,e} (.934)	4.55 ^{b,d,e} (.653)	p<.001
Reasons office – Personal circumstances	2.47 ^b (1.537)	2.61 ^d (1.381)	2.81 ^e (1.360)	3.55 ^{b,d,e} (1.248)	p<.001

Note. The superscripts should be read per row, with groups sharing the same superscript differing significantly: a = significant difference between Group 1 and Group 2, b = significant difference between Group 1 and Group 4, c = significant difference between Group 2 and Group 3, d = significant difference between Group 2 and Group 4, e = significant difference between Group 3 and Group 4

The conjoint study included six different reasons to come to the office, which were measured using a five-point Likert scale and therefore analyzed using one-way ANOVA with a Tukey HSD post-hoc test. As can be seen in Table 13, which shows the mean scores per reason per group and the standard deviation in between brackets, for all these reasons significant differences among the groups were observed. A visual representation can be found in Appendix G. When comparing the scores of the reasons for coming to the office among the groups, Group 1 and Group 3 show fairly similar scores for most reasons. Also, their scores are considerably high for all reasons, except for personal circumstances. This likely explains why they still prefer to work in the office for 50 percent of the time because they still believe there are plenty of worthwhile reasons to go to the office. The lowest scores for most reasons can be found when looking at Group 2. Hence, compared to the other groups, they no longer see as many advantages of working in the office, perhaps due to working from home full-time due to COVID, which is in line with their preference of working mostly from home. In contrast, Group 4 shows the highest scores for all reasons, and thus, prefers to work in the office most of all groups.

When ranking the reasons for coming to the office, both Group 3 and Group 4 value the reason ‘*Social contacts*’ as the most important reason for coming to the office. Group 2, values the reason ‘*Meeting new colleagues*’ the most important. Although the within-group means do not differ significantly, the results tend to show that Group 1 considers both ‘*Social contacts*’ and ‘*Meeting new colleagues*’ equally the most important. Thus, it can be concluded that social reasons are considered more

important for coming to the office compared to reasons that are linked to work tasks, such as attending team meetings or collaborating with each other.

7.5.3 Linking preferences to organizational fundamentals

This part will link the employees' preferences to the organizational fundamentals for hybrid working to check to what extent their fundamentals match with the dominant preferences of the four groups of employees that have been found using the latent class analysis. Hybrid working is seen as a new way of working in which employees are allowed to make choices about how, when, with whom, and where they work together (Rijksoverheid, 2021). Following the definition of hybrid working from the national government, BZK has set up six fundamentals for hybrid working, namely: 1) no one size fits all, 2) mutual trust, 3) working from home as well, 4) regularly present in the office, 5) good conversation, and 6) equality. These fundamentals have been elaborated upon in the company introduction (see Section 1.1).

The levels *'Almost entirely at home, occasionally to the office'* or *'Almost entirely at the office, occasionally at home'* are undesirable, because this contradicts fundamentals 3 and 4, aiming for a hybrid working approach that combines both working at home and working at the office. Moreover, the level *'Maximum freedom to choose where I work'* is undesirable as well because of fundamental 5, which indicates that the hybrid working arrangements are made together with the team, employee, and manager.

Below two scenarios have been developed while keeping in mind the hybrid working fundamentals of BZK. In these scenarios, the level *'Team arrangements with flexibility to deviate'* is used in each scenario because, for each group, this was the most preferred level within the attribute *'Arrangements hybrid working'*. This level also fits with both the definition of hybrid working as stated by the national government and fundamental 5, which aims for making arrangements together with the team. Additionally, one scenario is added to investigate the scenario of going back to the situation pre-COVID.

Scenario 1 – 50% home / 50% office

The first scenario that will be investigated is the scenario that applies a distribution of working 50% from home and 50% from the office. Within this scenario, four variations can be distinguished:

- Scenario 1a: 50/50, with fixed days and all day in the office
- Scenario 1b: 50/50, with fixed days and varying attendance per day
- Scenario 1c: 50/50, with varying days and all day in the office
- Scenario 1d: 50/50, with varying days and varying attendance per day

Figure 21 shows a visual representation of the preference scores per group per scenario. For the substantiation of the scores, see Appendix H.

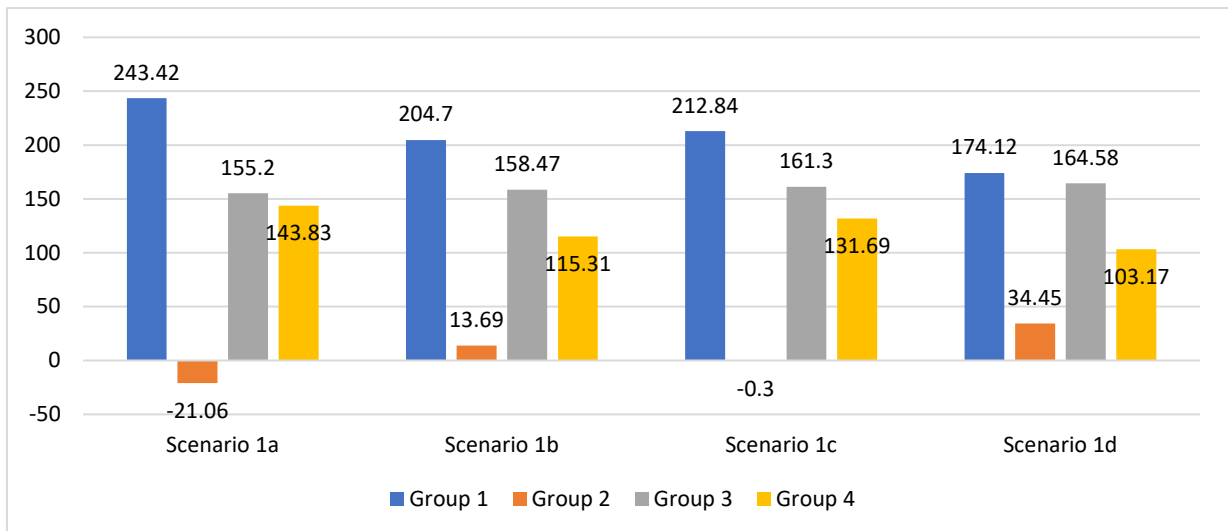


Figure 21 - Scenario 1

For Group 1, Group 3, and Group 4, all sub scenarios (1a-1d) have a preference score of 100 or more. Therefore, it can be concluded that all these groups would be to a large extent satisfied with these sub scenarios. For Group 1 and Group 3, this does not come as a surprise because the ‘50% home, 50% office’ was their most preferred level within the attribute ‘Distribution of days’, and this attribute also has the largest impact on the choice for a hybrid working approach. Although this level was not the most preferred level for Group 4, they still may consider this as a good compromise. Contrarily, for Group 2 this approach would not be acceptable, given the negative preference scores (for sub scenario 1a and 1c) or low preference scores (for sub scenario 1b and 1d) for the scenarios. Hence, scenario 1 would not be the ideal scenario for all four groups of employees.

Scenario 2 – 75% home / 25% office

The second scenario that will be investigated is the scenario that applies a distribution of working 75% of the time from home, and 25% of the time from the office. Within this scenario, four variations can be distinguished:

- Scenario 1a: 50/50, with fixed days and all day in the office
- Scenario 1b: 50/50, with fixed days and varying attendance per day
- Scenario 1c: 50/50, with varying days and all day in the office
- Scenario 1d: 50/50, with varying days and varying attendance per day

The preference scores per group per scenario are depicted in Figure 22. For the substantiation of the scores, see Appendix H.

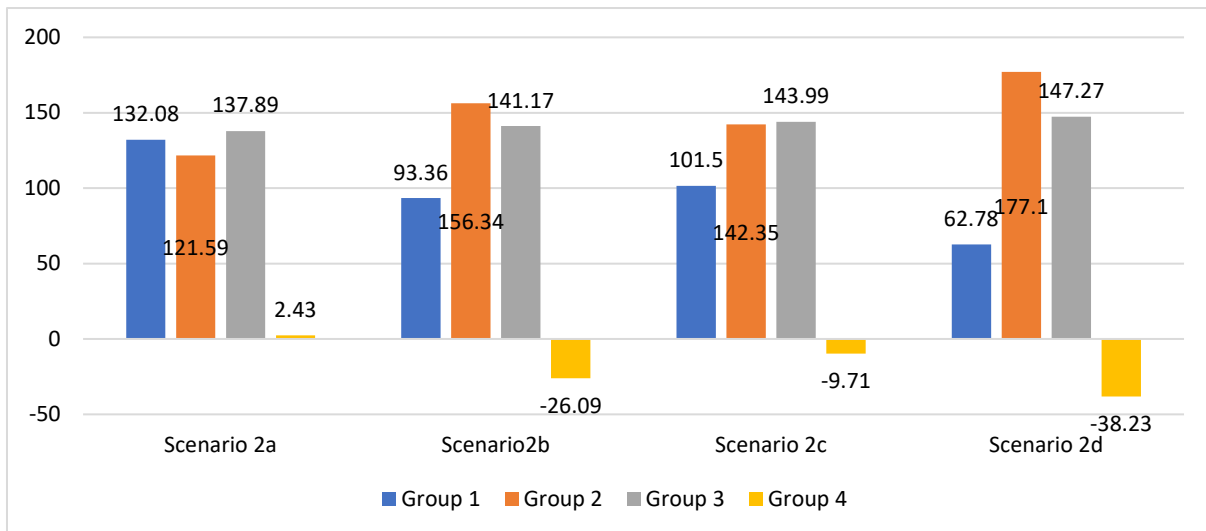


Figure 22 - Scenario 2

Both Group 2 and Group 3 have preference scores of 100 or more for all sub scenarios (2a-2d). Also, Group 1 has a preference score of 100 or more for sub scenarios 2a and 2b, and preference scores of 50 or more for the other two sub scenarios (2c and 2d). Hence, these three groups are likely to be satisfied with these sub scenarios, even if for none of these groups the level '75% home, 25% office' was the most preferred level within the attribute 'Distribution of days'. It is, however, to be expected that these three groups see this level as a good compromise. Nevertheless, this scenario does not match at all with the preferences of Group 4, given the very low preference score for scenario 2a and even negative preference scores for scenarios 2b, 2c, and 2d. Therefore, this scenario would, similarly to the other scenario, not satisfy all four groups of employees.

Scenario 3 – Going back to a pre-COVID working arrangement

The third scenario investigates the scenario of going back to the situation pre-COVID where employees had the opportunity to have one fixed day of working from home per week. The preference scores per group for this scenario can be found in Figure 23. For the substantiation of the scores, see Appendix H.

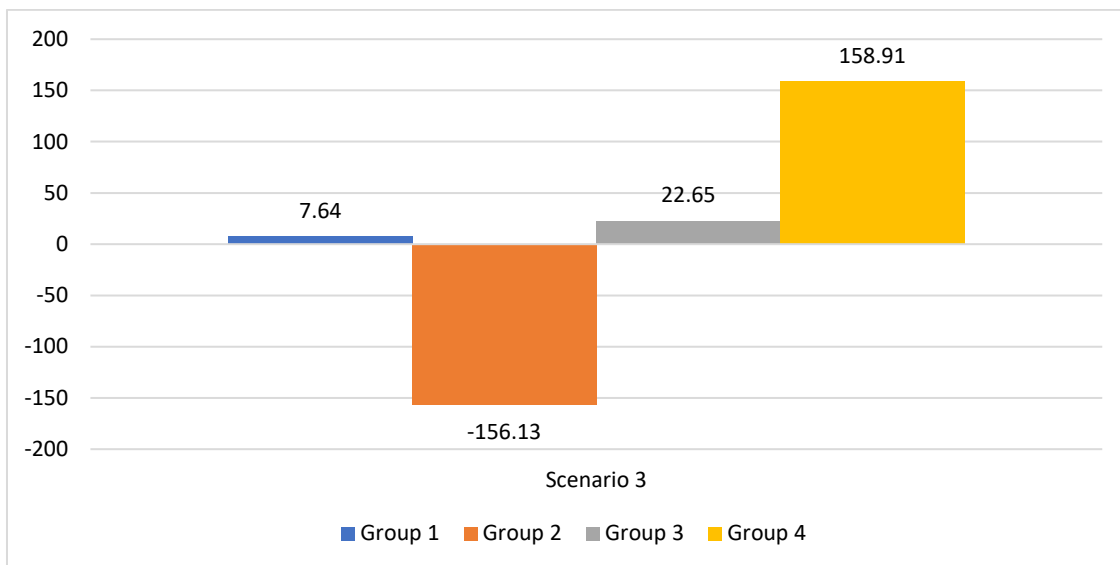


Figure 23 - Scenario 3

For this scenario, only Group 4 has a preference score of 100 or more. This can be explained by the level '25% home, 75% office' being the most preferred level within the attribute '*Distribution of days*'. In contrast, Group 2 has a very strong negative preference score for this scenario, indicating that this is definitely not aligned with their preferences. Both Group 1 and Group 3 have slightly positive preference scores, meaning that this scenario aligns better with their preferences compared to Group 2 but still not as much to their own preferred approaches. Thus, also this scenario would not satisfy all four groups of employees and fits the preferences of the employees worse than both scenarios 1 and 2.

8. Discussion

The goal of this master thesis was to investigate the preferences of BZK employees for hybrid working approaches and aimed to answer the research question “*What are the preferences of BZK employees for the approach of hybrid working to optimize their time-spatial fit?*”. The study used conjoint analysis to provide insights into the components that should be included in a hybrid working approach, the preferences of BZK employees for certain levels of the components within an approach, which components influence the preferences most, what groups of employees can be distinguished with their corresponding approaches, and lastly, how the employee preferences connect to the organizational fundamentals of hybrid working. This study contributes to the existing literature on hybrid working and applications for conjoint analysis. The following subsections will discuss the most important findings and the theoretical and managerial implications. Also, the limitations of this study and suggestions for further research will be presented. The last subsection will provide a final conclusion.

8.1 Most important findings

Based on the sub-questions, the most important findings will be presented in this section. In answering the first sub-question (“***What components and levels should be included to make up the approaches?***”), theory and practice were combined to investigate the components with their levels which were considered important to include in hybrid working approaches for BZK. Using a literature study on hybrid working, together with interviews with different departments and receiving feedback from, among others, a focus group, the first conclusion was that the focus of the components should be on the actual approach, instead of the process of coming to and implementing an approach. Therefore, components such as participation in decision-making for coming to an approach and communication of the chosen approach were not included. Nevertheless, aspects regarding the process of coming to and implementing an approach are vital too. For instance, when employees are involved in decision-making regarding organizational change, this reduces the possibility of negative outcomes of this change (Xeo et al., 2014). Additionally, the way in which the new approach is communicated could influence the success of the implemented approach as well. For instance, when employees receive high-quality communication about the organizational change they are facing, they are more likely to be open to the change (Allen et al., 2007). However, to prevent problems such as information overload and fatigue, which are common in conjoint analysis surveys that are too complex (Selka et al., 2010), choices had to be made to reduce the number of components and levels.

The final set of components consisted of four components, each varying over two to five levels. These components were: ‘*Distribution of days*’, ‘*Flexibility per week*’, ‘*Arrangements hybrid working*’, and ‘*Attendance per day*’. When comparing these components to the ways of returning to the office as stated by Dorenbosch (2021), most components are an extension of some ways. For instance, the component ‘*Distribution of days*’ is an extension of ‘*Returning on a weekly basis*’. The component investigates the amount of days employees prefer to work in the office or from home, instead of a division of being in the office for two or three days per week. Similarly, the component ‘*Arrangements hybrid working*’ is quite similar to ‘*Returning on team basis*’, with an extension of the degree of obligation to these working arrangements. Lastly, the component ‘*Attendance per day*’ is an extension of ‘*Returning on a daypart basis*’. Nonetheless, instead of being present every day for a daypart, the component ‘*Attendance per day*’ investigates employees’ preferences for presence during a day and does not require employees to be present all days of the week. Only the component ‘*Flexibility per week*’ has not been included in the ways of returning to the office as defined by Dorenbosch (2021).

The second (“***What levels within these components are preferred most by BZK employees to optimize their time-spatial fit?***”) and third sub-question (“***What component(s) have the highest impact on the***”)

preferences of BZK employees to optimize their time-spatial fit?”) were answered using conjoint analysis. In this analysis, the preferences of the employees for each level within a component were quantified. The higher the score, the more preferred the level was. For the component *‘Distribution of days’* two levels were equally preferred the most: *‘50% home, 50% office’* and *‘75% home, 25% office’*. This means that employees would prefer to keep the best of both worlds. They no longer want to keep working from home full-time, as was the case during COVID. Nevertheless, they neither want to go back to the situation pre-COVID in which most work was done at the office. For the component *‘Flexibility per week’*, the level *‘Days at the office/home differ per week’* was preferred the most, indicating that when employees are working from home or in the office is not set in stone and this can vary per week. Within the component *‘Arrangements hybrid working’* the level *‘Team arrangements with flexibility to deviate’* was most preferred. Thus, employees prefer to make arrangements on when and how to work together in a hybrid way, but still, some flexibility should be allowed to deviate from these arrangements. For the last component, *‘Attendance per day’*, the most preferred level was *‘Different each time’*. This means that BZK employees do not prefer to have fixed norms on how long they should be in the office when they want to work there. It should rather depend on their appointments during the day. These outcomes are in line with the BZK fundamentals of hybrid working. For instance, fundamentals three and four state that hybrid working means that employees are working both from home and in the office. A division of 50% at home and 50% in the office, or 75% at home and 25% in the office meets these requirements. In addition, making arrangements within the team is in line with fundamental five of the BZK fundamentals of hybrid working (i.e., having a good conversation with the team, manager, and employee). Moreover, making arrangements with the team is frequently stimulated within the organization during and after the phase in which employees were allowed to experiment with hybrid working.

However, the fact that employees still want to be able to deviate from arrangements or that employees prefer to be present in the office depending on appointments per day could imply that employees still want to hold on tight to the increased flexibility they may have experienced when working from home during the COVID lockdowns (Ipsen et al., 2021).

Next, the impact of the components on preferences for hybrid working approaches was determined. The component with by far the highest impact on choosing a hybrid working approach is *‘Distribution of days’*. This means that the better the chosen approach matches an employee’s preferred level within this component, the more satisfied an employee will be with the chosen approach. The component with by far the lowest impact on the preference for a hybrid working approach is *‘Flexibility per week’*, indicating that it does not matter as much when the chosen approach does not match an employee’s preferred level within this component. Both the components *‘Arrangements hybrid working’* and *‘Attendance per day’* have almost an equal impact on the preference for a hybrid working approach. Both these components have a reasonable impact on the chosen approach, which was more than *‘Flexibility per week’* but less than *‘Distribution of days’*. Thus, the level chosen within *‘Arrangements hybrid working’* and *‘Attendance per day’* should match employees’ preferences to some degree for them to be satisfied with the chosen approach.

This implies that as long as BZK ensures that the chosen level within the component *‘Distribution of days’* matches the employees’ preferences, the employees will likely be satisfied with the approach. The other components do not matter as much, especially since the impact of *‘Flexibility per week’* is so small that it can almost be neglected.

The fourth sub-question (**“What different groups of employees can be distinguished and what approaches do these groups prefer?”**) was answered using conjoint analysis, accompanied by some additional analyses. From this analysis, four groups of employees could be classified with similar

preferences in hybrid working approaches. Moreover, their characteristics could be identified. An overview of the results can be found in Table 14. Considering their preferred approaches, each of the four groups preferred the level *'Team arrangements with flexibility to deviate'* within the component *'Arrangements hybrid working'* the most. The reason for this is likely that employees have already been stimulated to start thinking about the arrangements they want to make within their team, while still wanting to hold on to the increased flexibility they experienced during COVID.

Table 14
Employee groups and their characteristics

	Preferred approach	Dominant employee characteristics
Group 1 (27.1%)	<ul style="list-style-type: none"> - 50% home, 50% office - Fixed days at the office/home - Team arrangements with flexibility to deviate - All day at the office 	Older employees without (resident) children who have been working at BZK for a long time (10+ years), and think most reasons for coming to the office that have been presented to them are important, with the exception of personal circumstances.
Group 2 (30.0%)	<ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Days at the office/home differ per week - Team arrangements with flexibility to deviate - Different each time 	Older employees without (resident) children who have been working at BZK for a long time (10+ years), and think most reasons for coming to the office (e.g., collaboration with colleagues or learning from each other) are not that important.
Group 3 (30.4%)	<ul style="list-style-type: none"> - 50% home, 50% office - Days at the office/home differ per week - Team arrangements with flexibility to deviate - Different each time 	Younger employees with younger children who have not been working at BZK for a long time (2-5 years), and think most reasons for coming to the office that have been presented to them are important, with the exception of personal circumstances.
Group 4 (17.9%)	<ul style="list-style-type: none"> - 25% home, 75% office - Fixed days at the office/home - Team arrangements with flexibility to deviate - All day at the office 	Younger employees who less often have a suitable home office without (resident) children, who have just started working at BZK (<2 years). They think all reasons for coming to the office that have been presented to them are important.

Both Group 1 and Group 3, representing 57 percent of the employees, would prefer to work 50% of the time from home and 50% of the time in the office. Although these groups differ in employee characteristics, they both consider most reasons for coming to the office as important, which could explain why they still would like to work in the office half of the time. Group 1 consists predominantly of employees without (resident) children who have been working at BZK for a long time. Their preferences for hybrid working are in line with previous research because employees without (resident) children prefer to work from home more often. After all, they do not experience as many distractions when working from home and they already have established their social contacts in the organization (Westerman & Yamamura, 2007; Zhang et al., 2020).

Group 3 consists mainly of younger employees with younger children, who have not been working at BZK for a very long time. Besides working 50% at home and 50% in the office, they want to be present depending on the appointments they have per day and week. Although research shows that employees living in households with younger children prefer to work more often in the office (Schieman et al., 2021), this study does not confirm this. An explanation may be that a hybrid working approach where presence in the office depends on appointments increases schedule flexibility, which allows employees to more easily meet family demands during a workday, and therefore decreases work-life conflict (Hill et al., 2010).

Group 2 is a group of employees that would like to keep on working almost entirely from home, and when they are working in the office depends on the appointments they have per day or week. This group mainly consists of older employees without (resident) children, and who have been working at BZK for a long time. Additionally, this group does not consider reasons for coming to the office as important, compared to the other groups. Thus, a likely reason for this preference is that they have established networks in the organization, are experienced in their work, and are often closer to their retirement (Kniffin et al., 2021; Westerman & Yamamura, 2007).

On the other hand, Group 4 is a group of employees that would prefer to work in the office the majority of the time. Furthermore, they want to have fixed days when employees should be present in the office being there the entire day. This group mainly consists of younger employees without children, who have just started working at BZK, and more often do not have a suitable home office. Moreover, they consider every reason for working in the office as important. This could explain their preference, because these employees still need to set up their social networks within the organization, or need to get more acquainted with the organizational culture and expectations (Turetken et al., 2011; Westerman & Yamamura, 2007). Therefore, they want to work in the office more often, knowing that people whom they can learn from are present too.

Considering employee characteristics, the most unexpected result was that no significant differences were found among the groups based on commuting time and distance. Although a reduction in commuting time has been considered one of the biggest advantages of working from home during COVID (Ipsen et al., 2021), and some literature also found that commuting time influences hybrid working preferences (Helminen & Ristimäki, 2007), this research did not find such effects. This is in line with research by Bailey & Kurland (2002), who did not find these effects either. A possible explanation for these findings is that employees consider commuting stress as overall life stress. Therefore, only if overall life stress is high, a reduction of commuting time would be a significant predictor of the choice of where to work (Mannering & Mokhtarian, 1995). Additionally, no significant differences were identified for gender, working hours, job function, work pressure, and trust from supervisor.

Lastly, the fifth sub-question (***“How do employees’ preferences connect to the organizational fundamentals of hybrid working?”***) and sixth sub-question (***“Which approach of hybrid working is optimal, given the employees’ preferences and the ministry’s hybrid working fundamentals?”***) were answered after the different groups and their characteristics had been identified. To answer these questions, the organizational fundamentals of hybrid working were linked to employees’ preferences to check to what extent their criteria match those preferences. Based on the hybrid working fundamentals and the organization’s definition of hybrid working, two scenarios were developed. The first scenario is an approach in which employees are expected to work 50% from home and 50% in the office. This scenario was perceived positively by the majority of the employees. However, employees belonging to Group 2 were not satisfied with this approach because this approach did not match their preferences for hybrid working. The second scenario was an approach in which employees are expected to work 75% from home and 25% in the office. This scenario was perceived positively by the

majority of the employees too. Nevertheless, also here one group of employees, being employees belonging to Group 4, was dissatisfied because this approach did not match their preferences. Lastly, a scenario was created in which the organization would decide to go back to the situation before COVID. In this scenario, employees would have one fixed day per week when they can work from home. However, most employees would be unhappy if this approach would be implemented, indicating that during COVID most BZK employees have experienced benefits from working from home. Only Group 4, the group with younger, newer employees, who less often have suitable home offices perceive this approach as positive.

These scenarios show that it is hard to satisfy all employees when implementing one approach. There will always be one significant and different group of employees dissatisfied with the chosen approach. This could indicate that a one-size-fits-all approach would be unacceptable and instead, a set of different approaches should be implemented to satisfy the majority of employees. This is also in line with the first fundamental of the BZK hybrid working fundamentals. When deciding to implement several approaches, choices have to be made on how to differentiate the chosen approaches. Differentiation could take place on different organizational levels, for instance, different teams implement different approaches. This is in line with *'Returning on a team basis'* as stated by Dorenbosch (2021). Alternatively, differentiation could take place based on the type of work employees perform within the organization, which is in line with the *'Returning on a job function basis'* as defined by Dorenbosch (2021). Furthermore, the differentiation could take place at an individual level to suit an employee's preferences best, as mentioned by Dorenbosch (2021) in the *person-dependent* category of returning to the office. The analyses do not give disclosure on how to differentiate, so other conditions need to be taken into account for this, for instance, organizational goals. Nevertheless, differentiating can lead to problems as well. For example, it causes more uncertainty on how to work, or it is harder to plan meetings when working together with different departments. Altogether, it can be concluded that when returning to the situation before COVID, most employees would be dissatisfied. To meet the preferences of employees, hybrid working should become the new way of working at BZK.

8.2 Theoretical implications

Working from home, especially during the lockdowns of the COVID-19 pandemic, has been thoroughly studied by academics. Also, working at the office and its effects have been studied extensively. This research tried to fill the gap of a way of working that combines these two, namely hybrid working. There has been some research on defining the concept of hybrid working (e.g., Beno, 2021; Halford, 2005). Other research has been focusing on workplace preferences in a hybrid working setting (e.g., Appel-Meulenbroek et al., 2022). However, the actual approach that should be used when working hybrid has only received very limited attention. Although some predictions from industry state that workers will be returning to the office for two to three days per week (AWVN, 2020; Bloom, 2021), how they return is not mentioned. A paper by Dorenbosch (2021) lists possible ways of returning to the office, but this only considers only one component per possibility. However, in practice hybrid working is more complicated than that and consists of a combination of components. Additionally, it has not been examined which approaches would be preferred by employees. This research contributed to a better understanding of how hybrid working approaches should be set up in more detail. Moreover, this research contributed to a better understanding of employee preferences regarding hybrid working approaches.

Not only does this study contribute to the literature on hybrid working, but this study contributes to the literature on conjoint analysis as well. Conjoint analysis is mostly used in marketing research to investigate consumers' preferences for a new product or service. However, some more

nonconventional topics of the application for a conjoint analysis are litigation, employee benefit packages, employees' perceived managerial power, workplace preferences, or housing preferences (Appel-Meulenbroek et al., 2022; Green & Srinivasan, 1990; Nijenstein et al., 2015). Although this research method is used in some human resource studies as well (e.g., Lagarde & Blaauw, 2009), the application of this research method on how to organize work has not been used.

8.3 Recommendations

The results of this study give useful insights for managers that are given the task to introduce a hybrid working policy within BZK or organizations in general. In a time where nobody knows what will work best, and everyone is trying what works for them, this study could give some directions. Therefore, this section will provide BZK with some recommendations on how to proceed with hybrid working.

The first recommendation is to let employees participate in the decision-making on which approach to implement. Gajendran & Harrison (2007) state that when employees are forced into hybrid working arrangements, this can lead to negative consequences such as increased stress and even decreased job satisfaction or job performance. In addition, García, Gonzales-Miranda, Gallo, & Roman-Calderon (2019) found a positive link between employee involvement in decision making on hybrid working and job satisfaction. When the organizational units in which the decisions are being made are too large to involve all employees in the decision-making, a representative group of employees could also be selected. In addition, the Vroom-Yetton decision model (Vroom & Jago, 1995) states that the decision-making process should be a consultative one (according to their model process C2) in which the team is brought together to discuss their preferences regarding hybrid working, but in the end, the final decision is made by the manager. This is in line with the third fundamental of the BZK fundamentals for hybrid working, which also states that it is crucial to start a conversation about employees' preferences. However, it is also vital to consider what the company values because a company always has its own organizational culture and tasks that it needs to fulfill. Thus, the approach that will be chosen should not only suit the employees' desires, but also the organizational goals. This could lead to a mismatch between the employees' preferred approaches and the chosen approach. In that case, a tell-and-sell communication approach should be used to inform the employees why these choices are being made.

The second recommendation is to motivate employees to return to the office and show them the advantages of working in the office. This could also be part of the tell-and-sell communication strategy. For instance, this study showed that about 30% of the employees, being mostly more experienced employees, would prefer to remain working from home most of the time with maximum freedom of determining when to come to the office. However, this could lead to several negative consequences for the organization. First of all, this could lead to the so-called '*lonely office effect*'. Research by Rockmann & Pratt (2015) has found that in a company with a widespread policy of working away from the office, the onsite office where employees socialize and brainstorm together no longer existed. Even employees who preferred working onsite started to work from home because when employees came into the office, this was a lonelier place to work even when the onsite offices were never entirely abandoned. This was due to there not being relevant colleagues in the office to meet up with for either productivity or social needs. Therefore, employees became more motivated to work away from the office because they felt it was pointless to work in the office. This suggests that at a certain point, working from home could be contagious leading to not only employees working away from the office feeling isolated but all employees feeling as such. Secondly, problems regarding learning from each other within the organization might arise from this group of employees. Learning in an organization mostly takes place through participation in group activities and working alongside others (Eraut, 2004). Especially less experienced employees could benefit from more experienced employees working in the

office, by observing and listening to how they tackle certain work tasks or by working together with more experienced employees to learn practices and obtain knowledge and expertise on tacit knowledge to fulfill their work tasks.

The third recommendation is to think critically about the first fundamental of the BZK fundamentals for hybrid working, which strives to obtain a degree of differentiation within the organization when it comes to hybrid working approaches. First, it should be considered if it is desirable to have multiple approaches mixed in one organization. For example, one standardized hybrid working approach offers psychological benefits and more comfort for employees by providing clear, explicable, and understandable processes on how to work (Wears, 2015). Moreover, working together may become more complex to plan, because different employees may be working according to different hybrid working approaches. In addition, hybrid working is already more complex than working completely from home or completely in the office, because when working in a hybrid way the system of working from home and the system of working in the office are interacting with one another (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2022). Additionally, when differentiating in approaches, choices need to be made on how to differentiate. For example, differentiation could take place at an individual level (Dorenbosch, 2021). An advantage of this differentiation is that the chosen approach suits an employee's preferences best, but problems regarding collaboration or team cohesion may arise (Mancl & Fraser, 2020; Rockmann & Pratt, 2015). Besides, not every employee will be satisfied with this forced increase of autonomy and may experience increased job demands and stress (Kubicek et al., 2015). An alternative is to differentiate on a team level, in which teams solve the question of how to structure hybrid working themselves (Dorenbosch, 2021). The main advantage is that collaboration will be easier due to arrangements that are made and likely decreases the possibility of the *'lonely office effect'* (Rockmann & Pratt, 2015). Moreover, employees are included in the decision-making which has advantages too (García et al., 2019). Nonetheless, it does not guarantee that every employee will be working as preferred because when implementing the preferences of the majority of employees, still a group of employees could be dissatisfied with the chosen approach.

The fourth recommendation, when implementing only one approach, is to implement an approach in which employees are expected to work 50% from home, and 50% in the office and further detailed arrangements on when to be present should be made within the teams. This results in some benefits of standardized working processes while keeping the benefits of participation in decision-making. Based on the scenario analyses, both scenario 1 (50% at home, 50% in the office) and scenario 2 (75% at home, 25% in the office) satisfied most employees but these analyses did not provide guidelines on which scenario to implement. However, when implementing scenario 2, a group of young employees who have just entered the organization will be dissatisfied. This group is of vital importance for the future workforce of the national government. As similarly stated in the strategic human resource policy 2025 (Rijksoverheid, 2018), the national government will be hit hard by the aging of the working population which is why they need to be an attractive employer for younger professionals. To achieve this, the knowledge and expertise of more experienced employees are needed. When including the BZK fundamentals of hybrid working, the fourth fundamental mentions that employees should be regularly present in the office, and collegial responsibility is expected of them. This implies that when some employees do not consider it to be useful to work in the office, other colleagues could have still benefitted from this employee's presence. Thus, if a scenario is to be chosen as-is, scenario 1 is preferable.

The last recommendation is to evaluate the approach that will be implemented. The best way to do this is by sending out short questionnaires to the employees regularly. Employees are familiar with this kind of research (e.g., employee satisfaction surveys) and it is easy to obtain insights. Topics that should

be included are the working arrangements, perceived autonomy and performance, work-life balance, commitment to the organization and the team, and what the most important reasons were to come to the office. However, the facilities and skillsets needed for hybrid working should be evaluated too. To get as many respondents as possible, the length of the questionnaire should be limited to 5 to 10 minutes and the frequency of sending out this questionnaire should be limited too. In the beginning, the questionnaire could be sent out after three, six, and nine months. Subsequently, questions regarding the hybrid working approach could be included in an annual employee satisfaction survey. Using this frequency allows for processing the results and for making necessary changes. To obtain even more insights from these evaluations, it would be interesting to see how the different groups of employees, as mentioned in this study, evaluate the implemented approaches and if these evaluations match their preferences stated in the conjoint study. However, this may be difficult to achieve due to regulations on data protection (e.g., GDPR).

8.4 Limitations and further research

The first category of limitations is related to the analysis method that was used. Conjoint analysis, just as any research method, has its limitations. For instance, the attributes and levels were presented to the respondents in a written form, which is common for conjoint analysis, which might lead to misinterpretation of these attributes and levels (Veitch et al., 2021). This was overcome by adding five questions in which respondents were asked to indicate the desirability for each level per attribute. These results were not used in the analyses, but these questions were used to introduce the attributes and levels with a short introduction and get the respondent acquainted with the various levels to choose from during the choice tasks. Additionally, research by Selka et al. (2010) indicated that most of the limitations within conjoint analysis occur because of the large number of possible combinations of attributes and levels. When plenty of choice decisions are shown, a respondent might experience information overload, boredom, or fatigue, but also learning effects during a survey could occur, leading to lower internal and external validity. Some of these limitations could be overcome by decreasing the number of stimuli per survey, activating respondents' attentiveness, using more straightforward questions, or asking for choice decisions instead of preference rankings (Selka et al., 2010). With the initial set of attributes and levels within the trial survey for the focus group, the response was that it was too complex to fill out. Hence, during the iterations of improving the attributes and levels, the focus was on reducing complexity. Also, the attributes and levels were presented to several employees within the organization to verify if the language used was understandable and similar to the language used within the organization. Lastly, a motivating picture was shown towards the end of the choice tasks to keep the employees activated to complete all the choice tasks. Due to reducing the complexity of this research, attributes regarding the process of setting up a hybrid working approach were left out. Therefore, future research could focus on the process of coming to a hybrid working approach. For instance, the effect of participation in decision-making on employees' satisfaction with the chosen hybrid working approach.

Furthermore, conjoint analysis uses scenarios instead of real-life settings to predict what employees would desire. Because these are hypothetical situations, no effects such as organizational outcomes or employee wellbeing could be measured. This made it difficult to operationalize the concept of time-spatial fit within this study and therefore it may not have been included as much as desired. An attempt was made to overcome this limitation by explaining the term time-spatial fit in the introduction text before the conjoint experiment and including the sentence *'Take into account your time-spatial fit'* during the choice tasks. Now that the impact of COVID on our daily life is decreasing rapidly, more organizations can actually start working in a hybrid way. Hence, future research should measure the effects different hybrid working approaches can have on organizational outcomes, (e.g., task performance, or organizational commitment), and employee wellbeing (e.g., work engagement or

exhaustion). Also, time-spatial fit deserves more attention for future research because it deals with the choices employees make regarding their workplaces, locations, and times for them to optimally perform at work and at home (Wessels, 2017). This is essentially what organizations want to achieve by changing towards a hybrid way of working. Although the term has been introduced by Wessels (2017), the dimensions of time-spatial fit and scales on how to measure the degree of time-spatial fit are yet to be developed.

Another limitation is that a simplified model has been used in which no interaction terms have been included. This was done as only one interaction effect could be found, it being complex to add in these interaction terms, and the need to model interaction effects was not necessary for individual-level estimation (e.g., Hierarchical Bayes and Latent Class analysis). Nevertheless, in future research interaction terms could be included because it may improve the predictive accuracy of the MNL model.

The second category of limitations is the period in which this study was performed. This research was conducted in an uncertain time, in which the measures to prevent the spread of COVID changed a lot. Employees had been working from home for almost two years, and perhaps forgot about how it is to work at the office. In addition, employees who have just started their professional career may not know what working in an office looks like. This could have influenced their preferences for hybrid working approaches as well. Therefore, it would be interesting to repeat this research once employees have started to come back to the office more often and see if their preferences have changed over time.

The last category of limitations is the perspective of this study. This research focused solely on the employee perspective, and only employee preferences are taken into account. However, organizations also have their vision and mission, and tasks that need to be fulfilled. It could be that the ideal situation for employees is not the ideal situation for the organization. Therefore, future studies should include a stronger organizational perspective as well.

8.5 Conclusion

Overall, it can be concluded that this study succeeded in answering the research question *“What are the preferences of BZK employees for the approach of hybrid working to optimize their time-spatial fit?”*. In short, BZK employees want to spend between 25 to 50 percent working in the office, and when to be present depends on the appointments they have during the week or day. Agreements on how to make this all work are made with the team, but these are not obligatory to stick to all the time.

As predicted by Barrero et al. (2021), working from home will be here to stay even after the pandemic. This study has shown that, indeed, hybrid working is the way to go.

References

- Akaike, H. (1973). Information theory and an extension of the maximum likelihood principle. In B. N. Petrov & F. Csáki (Eds.), *Proceeding of the Second International Symposium on Information Theory* (pp. 267–281). Akademiai Kiado. <https://doi.org/10.2307/2670083>
- Allen, J., Jimmieson, N. L., Bordia, P., & Irmer, B. E. (2007). Uncertainty during Organizational Change: Managing Perceptions through Communication. *Journal of Change Management*, 7(2), 187–210. <https://doi.org/10.1080/14697010701563379>
- Allenby, G. M., Rossi, P. E., & McCulloch, R. E. (2005). Hierarchical Bayes Models: A Practitioners Guide. In *Journal of Bayesian Applications in Marketing*.
- Appel-Meulenbroek, R., Kemperman, A., van de Water, A., Weijs-Perrée, M., & Verhaegh, J. (2022). How to attract employees back to the office? A stated choice study on hybrid working preferences. In *Journal of Environmental Psychology* (No. 101784; Vol. 81). Elsevier Ltd. <https://doi.org/10.1016/j.jenvp.2022.101784>
- Atzmüller, C., & Steiner, P. M. (2010). Experimental vignette studies in survey research. *Methodology*, 6(3), 128–138. <https://doi.org/10.1027/1614-2241/a000014>
- Aubé, C., & Rousseau, V. (2005). Team goal commitment and team effectiveness: The role of task interdependence and supportive behaviors. *Group Dynamics*, 9(3), 189–204. <https://doi.org/10.1037/1089-2699.9.3.189>
- AWVN. (2020). *Thuiswerken: tijd voor andere vergoedingen*. <https://www.awvn.nl/nieuws/persbericht/ledenenquete-thuiswerken-waarjwerkt-budget/>
- Bailey, D. E., & Kurland, N. B. (2002). A review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior*, 23(SPEC. ISS.), 383–400. <https://doi.org/10.1002/job.144>
- Barrero, J. M., Bloom, N., & Davis, S. J. (2021). Why Working from Home Will Stick. In *NBER Working paper* (No. 28731).
- Beauregard, T. A., Basile, K. A., & Canónico, E. (2019). Telework: outcomes and facilitators for employees. In R. N. Landers (Ed.), *The Cambridge Handbook of Technology and Employee Behavior* (pp. 511–543). Cambridge University Press.
- Beno, M. (2021). On-site and hybrid workplace culture of positivity and effectiveness: Case study from Austria. *Academic Journal of Interdisciplinary Studies*, 10(5), 331–338. <https://doi.org/10.36941/ajis-2021-0142>
- Bloom, N. (2021). *Our research shows working from home works, in moderation*. <https://www.theguardian.com/commentisfree/2021/mar/21/research-working-from-home>
- Carless, S. A., & De Paola, C. (2000). The measurement of cohesion in work teams. *Small Group Research*, 31(1), 71–88. <https://doi.org/10.1177/104649640003100104>
- Carron, A. V., & Brawley, L. R. (2000). Cohesion: Conceptual and Measurement Issues. *Small Group Research*, 31(1), 89–106. <https://doi.org/10.1177/1046496412468072>
- CBS. (2020). *Hoeveel mensen werken (nooit) thuis*. <https://longreads.cbs.nl/nederland-in-cijfers-2020/hoeveel-mensen-werken-nooit-thuis/>
- CBS. (2021). *Deeltijd*. <https://www.cbs.nl/nl-nl/visualisaties/dashboard-beroepsbevolking/deeltijd>
- Cuerdo-Vilches, T., Navas-Martín, M. Á., March, S., & Oteiza, I. (2021). Adequacy of telework spaces in homes during the lockdown in Madrid, according to socioeconomic factors and home features.

Sustainable Cities and Society, 75. <https://doi.org/10.1016/j.scs.2021.103262>

- De Leede, J., & Kraijenbrink, J. (2014). The mediating role of trust and social cohesion in the effects of new ways of working: A dutch case study. *Advanced Series in Management*, 14, 3–20. <https://doi.org/10.1108/S1877-636120140000014006>
- De Nederlandse Rijksoverheid. (2020). *Nieuwe maatregelen tegen verspreiding coronavirus in Nederland*. <https://www.rijksoverheid.nl/actueel/nieuws/2020/03/12/nieuwe-maatregelen-tegen-verspreiding-coronavirus-in-nederland>
- de Spiegelaere, S., van Gyes, G., & van Hootegeem, G. (2016). Not All Autonomy is the Same . Different Dimensions of Job Autonomy and Their Relation to Work Engagement & Innovative Work Behavior. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 26(4), 515–527. <https://doi.org/10.1002/hfm>
- Dorenbosch, L. (2021). *Terug van Weggeweest*. <https://omkering.innovatiefinwerk.nl/wp-content/uploads/2021/05/NSVP-Terug-v-Weggeweest-200521-online.pdf>
- Effectory. (2021). *Medewerkeronderzoek* (Issue April).
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, 26(2), 247–273. <https://doi.org/10.1080/158037042000225245>
- European Commission. (2020). Telework in the EU before and after the COVID-19 : where we were , where we head to. *Science for Policy Briefs*, 2009, 8. https://ec.europa.eu/jrc/sites/jrcsh/files/jrc120945_policy_brief_-_covid_and_telework_final.pdf
- Fayard, A. L., Weeks, J., & Khan, M. (2021). Designing the hybrid office. *Harvard Business Review*, 2021(March-April), 1–11.
- Feng, Z., & Savani, K. (2020). Covid-19 created a gender gap in perceived work productivity and job satisfaction: implications for dual-career parents working from home. *Gender in Management*, 35(7–8), 719–736. <https://doi.org/10.1108/GM-07-2020-0202>
- Field, A. (2009). *Discovering statistics using SPSS*. In *Sage* (3rd ed., Vol. 2nd, Issue Third Edition). Sage Publications.
- Gajendran, R. S., & Harrison, D. A. (2007). The Good, the Bad, and the Unknown About Telecommuting: Meta-Analysis of Psychological Mediators and Individual Consequences. *Journal of Applied Psychology*, 92(6), 1524–1541. <https://doi.org/10.1037/0021-9010.92.6.1524>
- García, A. B., Munduate, L., Elgoibar, P., Wendt, H., & Euwema, M. (2017). Competent or Competitive? How Employee Representatives Gain Influence in Organizational Decision-Making. *Negotiation and Conflict Management Research*, 10(2), 107–125. <https://doi.org/10.1111/ncmr.12093>
- García, G. A., Gonzales-Miranda, D. R., Gallo, O., & Roman-Calderon, J. P. (2019). Employee involvement and job satisfaction: a tale of the millennial generation. *Employee Relations*, 41(3), 374–388. <https://doi.org/10.1108/ER-04-2018-0100>
- Gerding, T., Syck, M., Daniel, D., Naylor, J., Kotowski, S. E., Gillespie, G. L., Freeman, A. M., Huston, T. R., & Davis, K. G. (2021). An assessment of ergonomic issues in the home offices of university employees sent home due to the COVID-19 pandemic. *Work*, 68(4), 981–992. <https://doi.org/10.3233/WOR-205294>
- Government of the Netherlands. (n.d.). *Ministry of the Interior and Kingdom Relations*. Retrieved October 12, 2021, from <https://www.government.nl/ministries/ministry-of-the-interior-and-kingdom-relations>

- Green, P. E., & Srinivasan, V. (1978). Conjoint Analysis in Consumer Research: Issues and Outlook. *Journal of Consumer Research*, 5(2), 103. <https://doi.org/10.1086/208721>
- Green, P. E., & Srinivasan, V. (1990). Conjoint Analysis in Marketing: New Developments with Implications for Research and Practice. *Journal of Marketing*, 54(4), 3. <https://doi.org/10.2307/1251756>
- Halford, S. (2005). Hybrid workspace: Re-spatialisations of work, organisation and management. *New Technology, Work and Employment*, 20(1), 19–33. <https://doi.org/10.1111/j.1468-005X.2005.00141.x>
- Helminen, V., & Ristimäki, M. (2007). Relationships between commuting distance, frequency and telework in Finland. *Journal of Transport Geography*, 15(5), 331–342. <https://doi.org/10.1016/j.jtrangeo.2006.12.004>
- Hill, E. J., Erickson, J. J., Holmes, E. K., & Ferris, M. (2010). Workplace Flexibility, Work Hours, and Work-Life Conflict: Finding an Extra Day or Two. *Journal of Family Psychology*, 24(3), 349–358. <https://doi.org/10.1037/a0019282>
- Hill, J. E., Grzywacz, J. G., Allen, S., Blanchard, V. L., Matz-Costa, C., Shulkin, S., & Pitt-Catsoupes, M. (2008). Defining and conceptualizing workplace flexibility. *Community, Work and Family*, 11(2), 149–163. <https://doi.org/10.1080/13668800802024678>
- Horiuchi, Y., Markovich, Z., & Yamamoto, T. (2021). Does Conjoint Analysis Mitigate Social Desirability Bias? *MIT Political Science Department Research Paper No. 2018-15 Political Analysis*. <https://doi.org/10.1017/pan.2021.30>
- Illegems, V., Verbeke, A., & S'Jegers, R. (2001). The organizational context of teleworking implementation. *Technological Forecasting and Social Change*, 68(3), 275–291. [https://doi.org/10.1016/S0040-1625\(00\)00105-0](https://doi.org/10.1016/S0040-1625(00)00105-0)
- Ipsen, C., van Veldhoven, M., Kirchner, K., & Hansen, J. P. (2021). Six key advantages and disadvantages of working from home in europe during covid-19. *International Journal of Environmental Research and Public Health*, 18(4), 1–19. <https://doi.org/10.3390/ijerph18041826>
- JongBZK. (2021). *De impact van de coronacrisis op de jonge ambtenaar*.
- Kemperman, A. D. A. M. (2000). *Temporal aspects of theme park choice behavior : modeling variety seeking, seasonality and diversification to support theme park planning*. [Technische Universiteit Eindhoven]. <https://doi.org/10.6100/IR542240>
- Kemperman, A. D. A. M., & Timmermans, H. J. P. (2006). Preferences, benefits, and park visits: A latent class segmentation analysis. *Tourism Analysis*, 11(4), 221–230. <https://doi.org/10.3727/108354206778814709>
- Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., Bamberger, P., Bapuji, H., Bhawe, D. P., Choi, V. K., Creary, S. J., Demerouti, E., Flynn, F. J., Gelfand, M. J., Greer, L. L., Johns, G., Kesebir, S., Klein, P. G., Lee, S. Y., ... Vugt, M. van. (2021). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76(1), 63–77. <https://doi.org/10.1037/amp0000716>
- Knight, C., Tims, M., Gawke, J., & Parker, S. K. (2021). When do job crafting interventions work? The moderating roles of workload, intervention intensity, and participation. In *Journal of Vocational Behavior* (No. 103522; Vol. 124, Issue May 2020). Elsevier Inc. <https://doi.org/10.1016/j.jvb.2020.103522>
- Konovsky, M. A. (2000). Understanding procedural justice and its impact on business organizations.

- Kozlowski, S. W. J., & Doherty, M. L. (1989). Integration of Climate and Leadership: Examination of a Neglected Issue. *Journal of Applied Psychology*, 74(4), 546–553. <https://doi.org/10.1037/0021-9010.74.4.546>
- Kubicek, B., Paškvan, M., & Korunka, C. (2015). Development and validation of an instrument for assessing job demands arising from accelerated change: The intensification of job demands scale (IDS). *European Journal of Work and Organizational Psychology*, 24(6), 898–913. <https://doi.org/10.1080/1359432X.2014.979160>
- Lagarde, M., & Blaauw, D. (2009). A review of the application and contribution of discrete choice experiments to inform human resources policy interventions. *Human Resources for Health*, 7, 1–10. <https://doi.org/10.1186/1478-4491-7-62>
- Lebeau, K., Van Mierlo, J., Lebeau, P., Mairesse, O., & Macharis, C. (2012). The market potential for plug-in hybrid and battery electric vehicles in Flanders: A choice-based conjoint analysis. *Transportation Research Part D: Transport and Environment*, 17(8), 592–597. <https://doi.org/10.1016/j.trd.2012.07.004>
- Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader-member exchange theory: The past and potential for the future. *Research in Personnel and Human Resources Management*, 15, 47–119.
- Louviere, J. J., Hensher, D. A., & Swait, J. D. (2000). Stated choice methods: Analysis and application. In *Stated Choice Methods*. Cambridge University Press. <https://doi.org/10.1017/cbo9780511753831.008>
- Lyttelton, T., Zang, E., & Musick, K. (2020). Gender differences in telecommuting and implications for inequality at home and work. In *SSRN Electronic Journal* (No. 3645561). <https://doi.org/10.31235/osf.io/tdf8c>
- Mancl, D., & Fraser, S. D. (2020). COVID-19 's Influence on the Future of Agile. In *International Conference on Agile Software Development*, 1, 309–316. <https://doi.org/10.1007/978-3-030-58858-8>
- Mannering, J. S., & Mokhtarian, P. L. (1995). Modeling the choice of telecommuting frequency in California: An exploratory analysis. *Technological Forecasting and Social Change*, 49(1), 49–73. [https://doi.org/10.1016/0040-1625\(95\)00005-U](https://doi.org/10.1016/0040-1625(95)00005-U)
- Marques-Quinteiro, P., Santos, C. M. Dos, Costa, P., Graça, A. M., Marôco, J., & Rico, R. (2020). Team adaptability and task cohesion as resources to the non-linear dynamics of workload and sickness absenteeism in firefighter teams. *European Journal of Work and Organizational Psychology*, 29(4), 525–540. <https://doi.org/10.1080/1359432X.2019.1691646>
- Messenger, J. C., & Gschwind, L. (2016). Three generations of Telework: New ICTs and the (R)evolution from Home Office to Virtual Office. *New Technology, Work and Employment*, 31(3), 195–208. <https://doi.org/10.1111/ntwe.12073>
- Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. (2022). *Workshop Hybride Samen Werken*.
- Munnich, A. C. J. (2021). *Literature study: Enablers for hybrid working in a post-pandemic context*. Eindhoven University of Technology.
- Ng, C. F. (2010). Teleworker's home office: An extension of corporate office? *Facilities*, 28(3–4), 137–155. <https://doi.org/10.1108/02632771011023113>
- Nijënstein, S., Haans, A., Kemperman, A. D. A. M., & Borgers, A. W. J. (2015). Beyond demographics: human value orientation as a predictor of heterogeneity in student housing preferences. *Journal*

- of *Housing and the Built Environment*, 30(2), 199–217. <https://doi.org/10.1007/s10901-014-9402-9>
- PwC Netherlands. (2020). *The costs and benefits of working from home*. <https://www.pwc.nl/nl/actueel-publicaties/assets/pdfs/pwc-the-costs-and-benefits-of-working-from-home.pdf>
- Rijksoverheid. (2018). *In het hart van de publieke zaak*.
- Rijksoverheid. (2021). *Factsheet: Definitie hybride werken*.
- Rockmann, K. W., & Pratt, M. G. (2015). Contagious Offsite Work and the Lonely Office: The Unintended Consequences of Distributed Work. *Academy of Management Discoveries*, 1(2), 150–164. <https://doi.org/10.5465/amd.2014.0016>
- Rothe, P., Lindholm, A. L., Hyvönen, A., & Nenonen, S. (2012). Work environment preferences - does age make a difference? *Facilities*, 30(1), 78–95. <https://doi.org/10.1108/02632771211194284>
- Sardeshmukh, S. R., Sharma, D., & Golden, T. D. (2012). Impact of telework on exhaustion and job engagement: A job demands and job resources model. *New Technology, Work and Employment*, 27(3), 193–207. <https://doi.org/10.1111/j.1468-005X.2012.00284.x>
- Sawtooth Software. (n.d.-a). *Estimating Utilities with HB*. Retrieved March 21, 2022, from <https://sawtoothsoftware.com/help/lighthouse-studio/manual/>
- Sawtooth Software. (n.d.-b). *Interaction Search Tool*. Retrieved April 21, 2022, from https://sawtoothsoftware.com/help/lighthouse-studio/manual/interaction_search_tool.html
- Sawtooth Software. (2018). *Which Conjoint Method Grid*. <https://sawtoothsoftware.com/resources/knowledge-base/sales-questions/which-conjoint-method-grid>
- Sawtooth Software. (2020). *LC: Which segment size should I choose?* <https://legacy.sawtoothsoftware.com/forum/26526/lc-which-segment-size-should-i-choose?show=26526#q26526>
- Schieman, S., Badawy, P. J., Milkie, M., & Bierman, A. (2021). Work-Life Conflict During the COVID-19 Pandemic. *Socius*, 7, 1–19. <https://doi.org/10.1177/2378023120982856>
- Schwarz, G. (1978). Estimating the Dimension of a Model. *The Annals of Statistics*, 6(2), 461–464.
- Selka, S., Baier, D., & Bruschi, M. (2010). Improving the validity of conjoint analysis by additional data collection and analysis steps. *Studies in Classification, Data Analysis, and Knowledge Organization*, 529–536. https://doi.org/10.1007/978-3-642-24466-7_54
- Singh, H. K., & Verma, S. (2020). Understanding the Challenges of Mandatory Telework Adoption and Its Effect on Employee Engagement. In S. K. Sharma, Y. K. Dwivedi, B. Metri, & N. P. Rana (Eds.), *Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation* (Vol. 618, pp. 626–637). Springer. https://doi.org/10.1007/978-3-030-64861-9_45
- Singh, S. K. G. (2009). A study on employee participation in decision making. *UNITAR E-Journal*, 5(1), 20–38.
- Smith, S. A., Patmos, A., & Pitts, M. J. (2018). Communication and teleworking: A study of communication channel satisfaction, personality, and job satisfaction for teleworking employees. *International Journal of Business Communication*, 55(1), 44–68. <https://doi.org/10.1177/2329488415589101>
- Stoker, J. I., Garretsen, H., & Lammers, J. (2021). Leading and Working From Home in Times of COVID-

- 19: On the Perceived Changes in Leadership Behaviors. *Journal of Leadership and Organizational Studies*. <https://doi.org/10.1177/15480518211007452>
- Train, K. E. (2003). Discrete choice methods with simulation. In *Discrete Choice Methods with Simulation* (Vol. 9780521816, Issue January 2003). <https://doi.org/10.1017/CBO9780511753930>
- Turetken, O., Jain, A., Quesenberry, B., & Ngwenyama, O. (2011). An empirical investigation of the impact of individual and work characteristics on telecommuting success. *IEEE Transactions on Professional Communication*, *54*(1), 56–67. <https://doi.org/10.1109/TPC.2010.2041387>
- Urien, B., Osca, A., & García-Salmones, L. (2017). Role ambiguity, group cohesion and job satisfaction: A Demands-Resources Model (JD-R) Study from Mexico and Spain. *Revista Latinoamericana de Psicología*, *49*(2), 137–145. <https://doi.org/10.1016/j.rlp.2015.09.014>
- Van De Ven, A. H., Delbecq, A. L., & Koenig Jr., R. (1976). Determinants of Coordination Modes within Organizations. *American Sociological Review*, *41*(2), 322–338. <http://www.jstor.org/stable/2094477> .
- Van Der Vegt, G. S., Emans, B. J. M., & Van De Vliert, E. (2001). Patterns of interdependence in work teams: A two-level investigation of the relations with job and team satisfaction. *Personnel Psychology*, *54*(1), 51–69. <https://doi.org/10.1111/j.1744-6570.2001.tb00085.x>
- van Hoorn, A. (2018). Trust and signals in workplace organization: Evidence from job autonomy differentials between immigrant groups. *Oxford Economic Papers*, *70*(3), 591–612. <https://doi.org/10.1093/oep/gpy012>
- Veitch, J., Ball, K., Rivera, E., Loh, V., Deforche, B., & Timperio, A. (2021). Understanding children's preference for park features that encourage physical activity: an adaptive choice based conjoint analysis. *International Journal of Behavioral Nutrition and Physical Activity*, *18*(1), 1–11. <https://doi.org/10.1186/s12966-021-01203-x>
- Vilhelmson, B., & Thulin, E. (2016). Who and where are the flexible workers? Exploring the current diffusion of telework in Sweden. *New Technology, Work and Employment*, *31*(1), 77–96. <https://doi.org/10.1111/ntwe.12060>
- Vroom, V. H., & Jago, A. G. (1995). Situation effects and levels of analysis in the study of leader participation. *The Leadership Quarterly*, *6*(2), 169–181. [https://doi.org/10.1016/1048-9843\(95\)90033-0](https://doi.org/10.1016/1048-9843(95)90033-0)
- Wason, K. D., Polonsky, M. J., & Hyman, M. R. (2002). Designing Vignette Studies in Marketing. *Australasian Marketing Journal*, *10*(3), 41–58. [https://doi.org/10.1016/s1441-3582\(02\)70157-2](https://doi.org/10.1016/s1441-3582(02)70157-2)
- Wears, R. L. (2015). Standardisation and its discontents. *Cognition, Technology and Work*, *17*(1), 89–94. <https://doi.org/10.1007/s10111-014-0299-6>
- Wessels, C. (2017). Flexible Working Practices | Factsheets | CIPD. In *Flexible Working Practices: How Employees Can Reap the Benefits for Engagement and Performance*. <https://www.cipd.co.uk/knowledge/fundamentals/relations/flexible-working/factsheet>
- Wessels, C., Schippers, M. C., Stegmann, S., Bakker, A. B., van Baalen, P. J., & Proper, K. I. (2019). Fostering flexibility in the new world of work: A model of time-spatial job crafting. *Frontiers in Psychology*, *10*(MAR), 1–13. <https://doi.org/10.3389/fpsyg.2019.00505>
- Westerman, J. W., & Yamamura, J. H. (2007). Generational preferences for work environment fit: Effects on employee outcomes. *Career Development International*, *12*(2), 150–161. <https://doi.org/10.1108/13620430710733631>
- Wrzesniewski, A., & Dutton, J. E. (2001). *Crafting a Job : Revisioning Employees as Active Crafters*. *28*(2),

179–201.

Xeo, S., Pick, D., Xerri, M., & Newton, C. (2014). *Public Sector Change, Person–Organization Fit, and Work Attitudes: A Mediation Model*. 1–34.

Zhang, S., Moeckel, R., Moreno, A. T., Shuai, B., & Gao, J. (2020). A work-life conflict perspective on telework. *Transportation Research Part A: Policy and Practice*, 141(September), 51–68. <https://doi.org/10.1016/j.tra.2020.09.007>

Appendix A – Interview guide

Afspraken

1. Welke afspraken zijn er gemaakt rondom uit- en thuiswerken?
 - a. Hoe frequent worden medewerkers op kantoor verwacht?
 - b. Zijn er vaste dagen dat medewerkers op kantoor worden verwacht?
 - c. Zijn er afspraken welk soort werk waar wordt uitgevoerd?
 - d. Gelden de afspraken als een verplichting of heeft de medewerker alsnog zelf de vrijheid om te beslissen of hij/zij op afgesproken dagen naar kantoor komt?
 - e. Gelden de afspraken voor iedereen of zijn er ook uitzonderingen?
 - f. Wat gebeurt er als een medewerker zich niet aan de gemaakte afspraken houdt (bijv. blijft alsnog 100% thuiswerken)?
2. Hoe zijn er afspraken gemaakt tussen medewerkers onderling?

Ideeën achter afspraken

3. Waarom hebben jullie voor deze aanpak gekozen?
4. Zijn er randvoorwaarden/criteria gehanteerd, en zo ja welke? (bijv. moet passen bij teamwork in de afdeling, moet niet nadelig zijn voor medewerkers met kleine kinderen, het moet voor iedereen eenduidig zijn, etc.)
5. Waar is deze aanpak op gebaseerd? (bijv. theorieën, geluiden bedrijfsleven, onderbuik)

Besluitvorming

6. Hoe zag het proces eruit om tot de huidige afspraken te komen?
7. Wat was de mate van betrokkenheid van medewerkers bij de besluitvorming voor deze aanpak?
 - a. Indien betrokken medewerkers
 - i. Hoe zag de betrokkenheid van medewerkers eruit?
 - ii. Is iedereen om zijn/haar mening gevraagd?
 - b. Indien medewerkers niet betrokken zijn geweest,
 - i. Wat was de reden dat medewerkers niet zijn betrokken bij dit proces?
 - ii. Vonden medewerkers het oké dat zij niet werden betrokken?
 - c. Indien projectgroep
 - i. Hoe is deze projectgroep samengesteld?
 - ii. Zijn medewerkers buiten de projectgroep ook om hun mening gevraagd?

Samenwerking

8. In welke mate werken de medewerkers van deze afdeling in teams?
 - a. Geldt dat voor alle medewerkers of zit daar variatie in?
 - b. Zijn het teams met alleen leden van deze afdeling of met leden van andere afdelingen? (bijv. vaste teams vs projectteams)
9. Is het goed mogelijk om samen te werken tijdens het hybride werken?
10. Wat wordt er gedaan om het teamgevoel te behouden?
11. Heeft het voorkomen van sociale isolatie een rol gespeeld bij de keuze voor de huidige structuur?

Werkdruk

12. Wat is de mate van werkdruk die wordt ervaren bij medewerkers?

Uitkomsten

13. Wat verwachten jullie voor uitkomsten van de aanpak waar jullie voor gekozen hebben?

Appendix B – Development of attributes and levels

This section will discuss the development of the attributes with their levels. In the last part of this section, the final set of attributes and levels is presented. In Table B1, the initial set of attributes and levels, based on the literature study and interviews can be found.

Table B1

Initial set of attributes and levels

Attribute	Explanation of attribute	Levels
<i>Mandatory presence</i>	Takes into consideration whether the approach contains an element of mandatory presence or not. It varies from mandatory presence for 2 or three days per week to no norms of when to be present.	<ul style="list-style-type: none"> - 2-3 days/week mandatory presence (MP1) - 2-3 days/week is expected but not mandatory (MP2) - No norms on how often to be present (MP3)
<i>Structure of presence</i>	Takes the structure of presence into account, which is concerned with whether a schedule of presence is used or not. The levels of this attribute vary from having a clear schedule to team members arranging everything by themselves.	<ul style="list-style-type: none"> - Clear schedule which incorporates teamwork (e.g. team meetings) and takes other social activities (e.g. department gatherings or drinks) into account (SP1) - Clear schedule which incorporates teamwork (e.g. team meetings) but other social activities (e.g. department gatherings or drinks) are arranged by team members themselves (SP2) - Clear schedule which incorporates social activities (e.g. department gatherings or drinks) but teamwork (e.g. team meetings) is arranged by team members themselves (SP3) - All work and social activities are arranged by team members themselves (SP4)
<i>Clarity of approach</i>	Is concerned with the way the hybrid working approach is communicated and elaborated upon. This varies from a written document which will be elaborated upon to an email in which the approach is communicated.	<ul style="list-style-type: none"> - There is a written document in which the approach is clearly communicated, this approach is elaborated upon by the manager or workgroup in a department meeting (CAP1) - The approach is communicated in writing but the manager or workgroup does not get back to it (CAP2)
<i>Customization of arrangements</i>	Entails the degree of customization of arrangements for the hybrid working approach. The levels range from everyone getting the opportunity for customization, to certain individuals getting the opportunity for customization to no possibilities for customization.	<ul style="list-style-type: none"> - Everyone gets the opportunity for customization (CAR1) - Individuals with an unsuitable situation for working from home (e.g. loneliness or unsuitable home office) get the opportunity for customization (e.g. coming to the office more often) (CAR2). - Individuals with situations that require them to work from home more often (e.g. caregiving tasks or commuting time) get the opportunity for customization (e.g. working from home more often) (CAR3). - Both individuals with an unsuitable situation for working from home (e.g. loneliness or unsuitable home office) and

individuals with situations that require them to work from home more often (e.g. caregiving tasks or commuting time) get the opportunity for customization (**CAR4**)
 - There are no possibilities for customization (**CAR5**)

<i>Participation in decision making</i>	Involves the degree of influence employees have on the chosen approach. This varies from individual employees influencing the approach, workgroups are being established to influence the decision making, to managers making the decisions based on consultations with their employees.	- The employee him-/herself influences the chosen approach (PDM1) - Workgroups of employees are formed that decide on the approach (PDM2) - The manager decides on the approach after consultation with employees (PDM3)
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This initial set of attributes and levels has also been linked to the interviews, to ensure that these attributes were determinant, realistic, compensatory, sufficient in defining the choice situation, and non-redundant. Table B2 shows with which levels the abovementioned attributes (as mentioned in Table B1) appear in the various departments.

Table B2
 Link of attributes and levels to interviews

	BFR	B&E	D&B	P&O	FEZ	Count of levels
Mandatory presence	MP3	MP2	MP2	MP2	MP3	3x MP2, 2x MP3
Structure of presence	SP2	SP1	SP1	SP1	SP3	3x SP1, 1x SP2, 1x SP3
Clarity of approach	CAP1	CAP1	CAP1	CAP2	CAP1	4x CAP1, 1x CAP2
Customization of arrangements	CAR4	CAR4	CAR4	CAR4	CAR4	5x CAR4
Participation in decision making	PDM2	PDM1	PDM1	PDM2	PDM2	2x PDM1, 3x PDM2

The first iteration was mainly rephrasing the initial set of attributes and levels because when entered into the software, the levels were too long to be understandable in the choice tasks. Additionally, the initial set of attributes and levels was presented to the company supervisor and a group of employees of BUAs. Their feedback was processed as well. This process can be found in Table B3.

Table B3
 Initial set to iteration 1

Initial set	Iteration 1
Mandatory presence	→ Mandatory presence
- 2-3 days/week mandatory presence	- 2-3 days/week mandatory presence
- 2-3 days/week is expected but not mandatory	- 2-3 days/week is expected but not mandatory
- No norms on how often to be present	

- My work tasks determine my presence
- No norms on how often to be present

Structure of presence

- Clear schedule which incorporates teamwork (e.g. team meetings) and takes other social activities (e.g. department gatherings or drinks) into account
- Clear schedule which incorporates teamwork (e.g. team meetings) but other social activities (e.g. department gatherings or drinks) are arranged by team members themselves
- Clear schedule which incorporates social activities (e.g. department gatherings or drinks) but teamwork (e.g. team meetings) is arranged by team members themselves
- All work and social activities are arranged by team members themselves

→ **Structure of presence**

- Clear schedule which incorporates teamwork and social activities
- Clear schedule which incorporates teamwork but without social activities
- Clear schedule which incorporates social activities but without teamwork activities
- No schedule

Clarity of approach

- There is a written document in which the approach is clearly communicated, this approach is elaborated upon by the manager or workgroup in a department meeting
- The approach is communicated in writing but the manager or workgroup does not get back to it

→ **Clarity of approach**

- Approach is communicated in writing and further explained
- Approach is communicated in writing and not further explained

Customization of arrangements

- Everyone gets the opportunity for customization
- Individuals with an unsuitable situation for working from home (e.g. loneliness or unsuitable home office) get the opportunity for customization (e.g. coming to the office more often)
- Individuals with situations that require them to work from home more often (e.g. caregiving tasks or commuting time) get the opportunity for customization (e.g. working from home more often)
- Both individuals with an unsuitable situation for working from home (e.g. loneliness or unsuitable home office) and individuals with situations that require them to work from home more often (e.g. caregiving tasks or commuting time) get the opportunity for customization
- There are no possibilities for customization

→ **Customization of arrangements**

- It is always possible to deviate from the approach
- If my personal circumstances so require, the approach can be deviated from
- It is never possible to deviate from the approach

Participation in decision making

- The employee him-/herself influences the chosen approach

→ **Participation in decision making**

- The employee him-/herself influences the chosen approach

- | | |
|---|---|
| <ul style="list-style-type: none"> - Workgroups of employees are formed that decide on the approach - The manager decides on the approach after consultation with employees | <ul style="list-style-type: none"> - Workgroups of employees are formed that decide on the approach - The manager decides on the approach after consultation with employees |
|---|---|
-

Next, the set 'Iteration 1' was presented to the project manager and company supervisor and their feedback was processed into 'Iteration 2'. This is shown in Table B4.

Table B4
Iteration 1 to iteration 2

Iteration 1	Iteration 2	Comments
<p>Mandatory presence</p> <ul style="list-style-type: none"> - 2-3 days/week mandatory presence - 2-3 days/week is expected but not mandatory - My work tasks determine my presence - No norms on how often to be present 	<p>→ Distribution of days</p> <ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office 	<p>The updated levels are more applicable to employees who work part-time. Content is partly the same.</p>
	<p>→ Flexibility per week</p> <ul style="list-style-type: none"> - Fixed days at the office/home - Days at the office/home differ per week 	<p>Addition to distribution of days, on a higher level than presence per day. Also contributes to the paper of Dorenbosch (2021).</p>
<p>Customization of arrangements</p> <ul style="list-style-type: none"> - It is always possible to deviate from the approach - If my personal circumstances so require, the approach can be deviated from - It is never possible to deviate from the approach - 	<p>→ Arrangements hybrid working</p> <ul style="list-style-type: none"> - Maximum freedom to choose where I work - Team arrangements without obligations - Team arrangements with flexibility to deviate - Team arrangements that everyone has to stick to 	<p>Combination of obligation of presence and degree of deviation. Rephrased for better understanding.</p>
<p>Structure of presence</p> <ul style="list-style-type: none"> - Clear schedule which incorporates teamwork and social activities - Clear schedule which incorporates teamwork but without social activities - Clear schedule which incorporates social activities but without teamwork activities - No schedule 	<p>→ Attendance per day</p> <ul style="list-style-type: none"> - All day at the office - Part of the day at the office - Depends on appointments - Different each time 	<p>In line with a paper by Dorenbosch (2021). Important when setting up norms for hybrid working</p>

Clarity of approach

- Approach is communicated in writing and further explained
- Approach is communicated in writing and not further explained

→ Deleted

This can be included in the recommendation section, good communication is always important. This is also not a critical variable, if communication was not good in the beginning, this can be remedied later.

Participation in decision making

- The employee him-/herself influences the chosen approach
- Workgroups of employees are formed that decide on the approach
- The manager decides on the approach after consultation with employees

→ **Process of decision making**

- A working group determines the approach
- The manager determines the approach after consultation with the team

This is a critical variable, you cannot fix this afterwards. Literature also shows that this is an important aspect. Wording/levels have been adjusted.

After 'Iteration 2', the set of attributes and levels was presented to the focus group and the employee of another project group about hybrid working. This resulted in 'Iteration 3' or the final set of attributes and levels. This process can be found in Table B5.

Table B5*Iteration 2 to iteration 3*

Iteration 2	Iteration 3	Comments
<i>Distribution of days</i> <ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office 	→ <i>Distribution of days</i> <ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office 	No comments
<i>Flexibility per week</i> <ul style="list-style-type: none"> - Fixed days at the office/home - Days at the office/home differ per week 	→ <i>Flexibility per week</i> <ul style="list-style-type: none"> - Fixed days at the office/home - Days at the office/home differ per week 	No comments

<p>Arrangements hybrid working</p> <ul style="list-style-type: none"> - Maximum freedom to choose where I work - Team arrangements without obligations - Team arrangements with flexibility to deviate - Team arrangements that everyone has to stick to 	→	<p>Arrangements hybrid working</p> <ul style="list-style-type: none"> - Maximum freedom to choose where I work - Team arrangements without obligations - Team arrangements with flexibility to deviate - Team arrangements that everyone has to stick to 	<p>There has been discussion if the difference between ‘<i>Team arrangements without obligations</i>’ and ‘<i>Team arrangements with flexibility to deviate</i>’ is clear enough. In the end, it was concluded that it was so they can both be included.</p>
<p>Attendance per day</p> <ul style="list-style-type: none"> - All day at the office - Part of the day at the office - Depends on appointments - Different each time 	→	<p>Attendance per day</p> <ul style="list-style-type: none"> - All day at the office - Part of the day at the office - Different each time 	<p>If attendance per day depends on appointments per day, the attendance per day can vary each time.</p>
<p>Process of decision making</p> <ul style="list-style-type: none"> - A working group determines the approach - The manager determines the approach after consultation with the team 	→	<p>Deleted</p>	<p>Focus should be on the approach itself instead of the process of coming to the approach. Could be included in the recommendations section.</p>

In Table B6 the final set of attributes and levels is presented.

Table B6
Final set of attributes and levels

Attribute	Explanation of attribute	Levels
<i>Distribution of days</i>	The attribute ‘ <i>Distribution of days</i> ’ refers to the distribution of the number of days per week at the office or working from home.	<ul style="list-style-type: none"> - Almost entirely at home, occasionally to the office - Almost entirely at the office, occasionally at home - 50% home, 50% office - 25% home, 75% office - 75% home, 25% office
<i>Flexibility per week</i>	The attribute ‘ <i>Flexibility per week</i> ’ refers to the structure of the distribution of working from home or working from the office. This includes whether arrangements have been made when to work in the office (e.g. every Thursday in the office, or a fixed day once a month) or whether no arrangements are made.	<ul style="list-style-type: none"> - Fixed days at the office/home - Days at the office/home differ per week
<i>Arrangements hybrid working</i>	The attribute ‘ <i>Arrangements hybrid working</i> ’ refers to how agreements are made and the degree of obligation of these agreements. This varies from maximum freedom to agreements with the team.	<ul style="list-style-type: none"> - Maximum freedom to choose where I work - Team arrangements without obligations

There is also variation in compliance to these agreements, for example, agreements without any obligations or agreements where only occasionally can be deviated from.

- Team arrangements with flexibility to deviate
- Team arrangements that everyone has to stick to

Attendance per day

The attribute '*Attendance per day*' refers to what attendance looks like per day that an employee comes to the office. There could be agreements where employees should be in the office an entire day or only part of a day. However, it could also be that this attendance per day differs from time to time (e.g. this is determined by the appointments an employee has).

- All day at the office
- Part of the day at the office
- Different each time

Appendix C – Informed consent form

Welkom bij deze vragenlijst. Deze introductie geeft u informatie over het onderzoek ‘*Voorkeuren voor hybride werken van BZK medewerkers*’. Dit onderzoek wordt uitgevoerd door Anne Munnich in het kader van haar afstudeeronderzoek voor de Master Operations Management & Logistics, onder begeleiding van dr. ir. Ad Kleingeld (Technische Universiteit Eindhoven, Human Performance Management group) en Willemijn Weijschede (BZK). Het doel van dit onderzoek is om inzicht te krijgen in de voorkeuren van een aanpak voor hybride werken bij medewerkers zodat dit een duurzame nieuwe manier van werken kan worden waarbij iedereen kan profiteren van de voordelen.

Voordat u besluit deel te nemen aan dit onderzoek is het belangrijk dat u kennis heeft van de procedure die in dit onderzoek is gevolgd en dat u uw geïnformeerde toestemming geeft voor vrijwillige deelname.

1. Uw deelname aan dit onderzoek is geheel vrijwillig en u kunt de deelname op elk moment intrekken en beëindigen.
2. Aan dit onderzoek zijn geen risico's of nadelige bijwerkingen verbonden. Als u zich echter op een of andere manier ongemakkelijk voelt tijdens het invullen van de vragenlijst, heeft u het recht om te weigeren een vraag te beantwoorden en uw deelname aan dit onderzoek te beëindigen.
3. Deze vragenlijst is volledig anoniem. Dit betekent dat er geen gegevens worden verzameld waaruit uw identiteit bekend zou kunnen worden. U wordt niet gevraagd om uw naam, e-mailadres of andere informatie te geven die zou kunnen identificeren wie u bent.
4. Gebruik en opslag van gegevens is onderworpen aan standaardbeleid voor gegevensgebruik dat de anonimiteit van individuen beschermt. In rapportages en publicaties over het onderzoek zullen uitsluitend geaggregeerde resultaten worden gebruikt.
5. Dit onderzoek is goedgekeurd door de Ethical Review Board van de Technische Universiteit Eindhoven.
6. Als u geïnteresseerd bent in meer informatie over dit onderzoek, de onderzoeksopzet of de resultaten, dan kunt u contact opnemen met Anne Munnich (anne.munnich@minbzk.nl). Indien u een bezwaar heeft tegen of een klacht heeft over dit onderzoek, dan kunt u contact opnemen met de TU/e begeleider Ad Kleingeld (p.a.m.kleingeld@tue.nl) of de BZK begeleider Willemijn Weijschede (willemijn.wijschede@minbzk.nl).

Bent u, na het lezen van bovenstaande informatie, bereid om deel te nemen en de vragenlijst in te vullen?

- Ja
- Nee

Appendix D – Recoding variables

Table 15

Recoding of variables

Variable	Original values	Recoded values	Reason for recoding
<i>Age</i>	<26 years	≤35 years	There were 7 employees in the <26 years category and 3 in the >65 years category. This resulted in 8 cells having an expected count of less than 5. Additionally, the organization for younger employees (JongBZK) also used the maximum age of 35 years.
	26-35 years	36 – 45 years	
	36 – 45 years	46 – 55 years	
	46 – 55 years	≥56 years	
	56-65 years		
	>65 years		
<i>Household composition</i>	Single household	Single household	There were too many categories for a suitable Chi-Squared test, resulting in 16 cells having an expected count of less than 5. According to research, having small children is the most important factor that influences perceptions of working from home. Therefore, it was chosen to go for households instead of making a division between families and single parents.
	With partner without (resident) children	With partner, without (resident) children	
	Family with young children (<12yr)	Household with young (<12yr) children	
	Family with older children (>12yr)	Household with only older children (>12yr)	
	Family with younger (<12yr) and older (>12yr) children		
	Single parent with young children (<12yr)		
	Single parent with older children (>12yr)		
	Single parent with younger (<12yr) and older (>12yr) children		
<i>Travel distance</i>	<1km	<5km	There were only 5 employees in the <1km category, resulting in 4 cells not having an expected count of 5. Additionally, employees living within 5km of their work still live close to their work.
	1-5km	6-10km	
	6-10km	11-20km	
	11-20km	21-50km	
	21-50km	>50km	
	>50km		

<i>Tenure</i>	<2 years	<2 years	It was decided that even employees with a tenure of 10+ years are very experienced employees, who are familiar with the organization's culture and have established networks within the organization. There would not be such a difference between tenure of 10+ or 15+ years.
	2-5 years	2-5 years	
	5-10 years	5-10 years	
	10-15 years	>10 years	
	> 15 years		
<i>Working hours</i>	<24h/week	Part-time	There were only 3 employees in the <24h/week, resulting in 4 cells not having an expected count of 5. Additionally, using the distinction working part-time or full-time is a common way to express working hours.
	24-35h/week	Full-time	
	≥36h/week		

Appendix E – Interaction effects

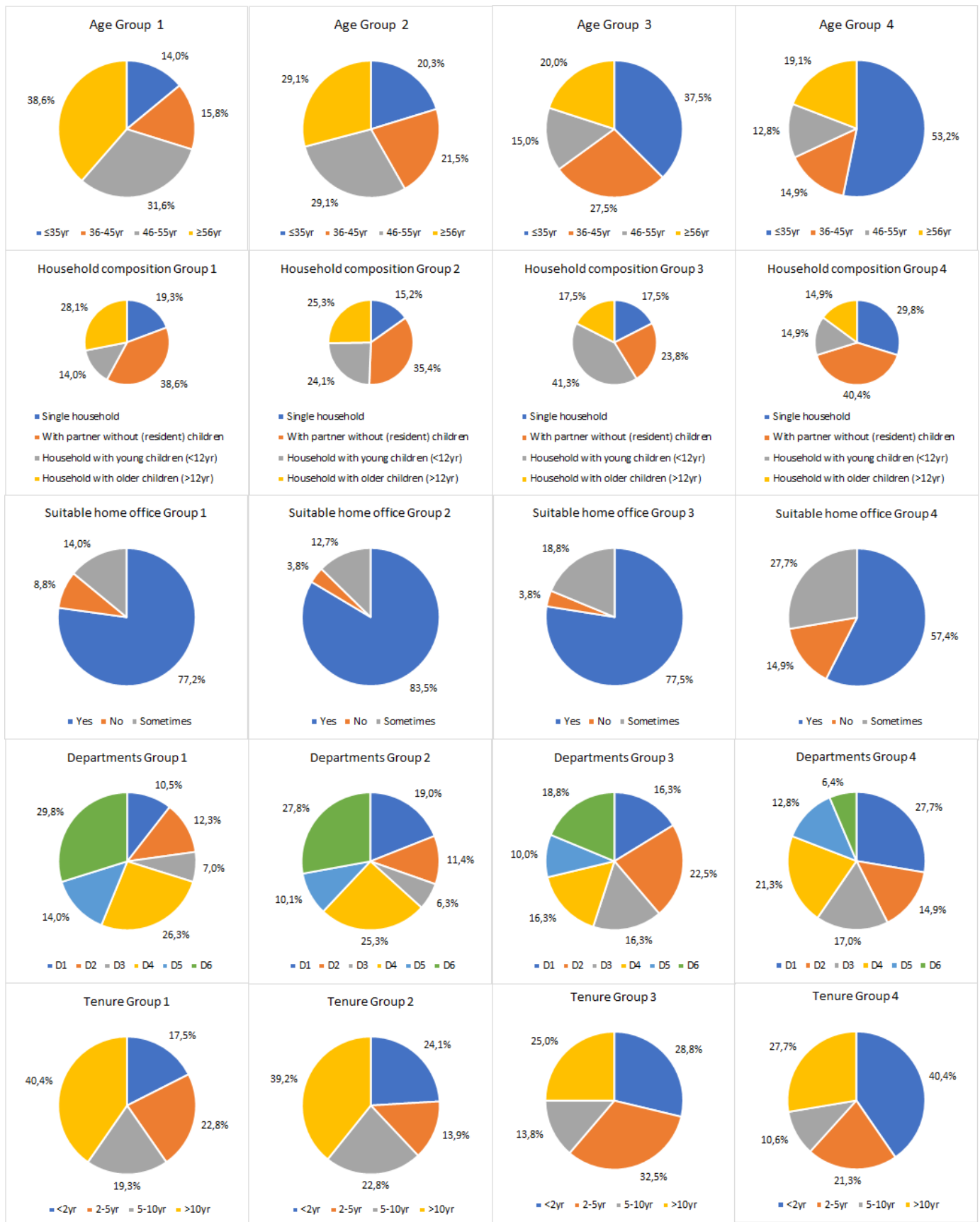
Distribution of days x Attendance per day		
Almost entirely at home, occasionally to the office	All day at the office	.209
Almost entirely at home, occasionally to the office	Part of the day at the office	.253
Almost entirely at home, occasionally to the office	Different each time	.291
Almost entirely at the office, occasionally at home	All day at the office	.107
Almost entirely at the office, occasionally at home	Part of the day at the office	.071
Almost entirely at the office, occasionally at home	Different each time	.112
50% home, 50% office	All day at the office	.466
50% home, 50% office	Part of the day at the office	.341
50% home, 50% office	Different each time	.405
25% home, 75% office	All day at the office	.192
25% home, 75% office	Part of the day at the office	.148
25% home, 75% office	Different each time	.178
75% home, 25% office	All day at the office	.423
75% home, 25% office	Part of the day at the office	.367
75% home, 25% office	Different each time	.461
Interaction Chi-Square		18.553
D.F.		8
Significance		p < .05

Appendix F – Full table differences between groups

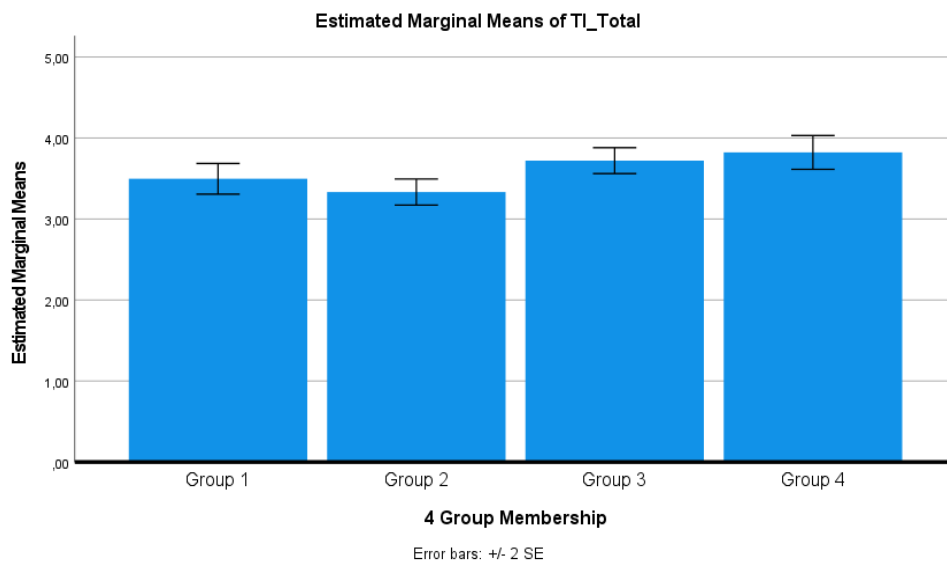
	Group 1 (21.7%)	Group 2 (30.0%)	Group 3 (30.4%)	Group 4 (17.9%)
Gender	Male (45.6%)	Male (44.9%)	Male (40.0%)	Male (43.9%)
	Female (54.4%)	Female (55.1%)	Female (60.0%)	Female (56.1%)
Age	≤35 years (14.0%)	≤35 years (20.3%)	≤35 years (37.5%)	≤35 years (30.0%)
	36 – 45 years (15.8%)	36 – 45 years (21.5%)	36 – 45 years (27.5%)	36 – 45 years (20.9%)
	46 – 55 years (31.6%)	46 – 55 years (29.1%)	46 – 55 years (15.0%)	46 – 55 years (22.4%)
	≥ 56 years (38.6%)	≥ 56 years (29.1%)	≥ 56 years (20.0%)	≥ 56 years (26.6%)
Household composition	Single household (19.3%)	Single household (15.2%)	Single household (17.5%)	Single household (19.4%)
	With partner, without (resident) children (38.6%)	With partner, without (resident) children (35.4%)	With partner, without (resident) children (23.8%)	With partner, without (resident) children (33.5%)
	Household with young (<12yr) children (14.0%)	Household with young (<12yr) children (24.1%)	Household with young (<12yr) children (41.3%)	Household with young (<12yr) children (25.5%)
	Household with only older children (>12yr) (28.1%)	Household with only older children (>12yr) (25.3%)	Household with only older children (>12yr) (17.5%)	Household with only older children (>12yr) (21.7%)
Suitable home office	Yes (77.2%)	Yes (83.5%)	Yes (77.5%)	Yes (57.4%)
	No (8.8%)	No (3.8%)	No (3.8%)	No (14.9%)
	Sometimes (14.0%)	Sometimes (12.7%)	Sometimes (18.8%)	Sometimes (27.7%)
Travel distance	<5km (15.8%)	<5km (11.4%)	<5km (21.3%)	<5km (29.8%)
	6-10km (28.1%)	6-10km (25.3%)	6-10km (16.3%)	6-10km (14.9%)
	11-20km (15.8%)	11-20km (15.2%)	11-20km (13.8%)	11-20km (17.0%)
	21-50km (19.3%)	21-50km (22.8%)	21-50km (25.0%)	21-50km (19.1%)
	>50km (21.1%)	>50km (25.3%)	>50km (23.8%)	>50km (19.1%)
Travel time	<30min (22.8%)	<30min (17.7%)	<30min (21.3%)	<30min (29.8%)
	31-60min (35.1%)	31-60min (30.4%)	31-60min (30.0%)	31-60min (34.0%)
	61-90min (17.5%)	61-90min (22.8%)	61-90min (21.3%)	61-90min (21.3%)
	91-120min (8.8%)	91-120min (17.7%)	91-120min (18.8%)	91-120min (4.3%)
	>120min (15.8%)	>120min (11.4%)	>120min (8.8%)	>120min (10.6%)
Leadership function	Yes (12.3%)	Yes (2.5%)	Yes (7.5%)	Yes (8.5%)
	No (87.7%)	No (97.5%)	No (92.5%)	No (91.5%)
Department	DGBRW/B&E (10.5%)	DGBRW/B&E (19.0%)	DGBRW/B&E (16.3%)	DGBRW/B&E (27.7%)
	DGBRW/BFR (12.3%)	DGBRW/BFR (11.4%)	DGBRW/BFR (22.5%)	DGBRW/BFR (14.9%)
	DGBRW/D&B (7.0%)	DGBRW/D&B (6.3%)	DGBRW/D&B (16.3%)	DGBRW/D&B (17.0%)
	M&M/FEZ (26.3%)	M&M/FEZ (25.3%)	M&M/FEZ (16.3%)	M&M/FEZ (21.3%)
	M&M/P&O/BCO (14.0%)	M&M/P&O/BCO (10.1%)	M&M/P&O/BCO (10.0%)	M&M/P&O/BCO (12.8%)
	M&M/P&O/HRM A&O (29.8%)	M&M/P&O/HRM A&O (27.8%)	M&M/P&O/HRM A&O (18.8%)	M&M/P&O/HRM A&O (6.4%)
Tenure	<2 years (17.5%)	<2 years (24.1%)	<2 years (28.7%)	<2 years (40.4%)
	2-5 years (22.8%)	2-5 years (13.9%)	2-5 years (32.5%)	2-5 years (21.3%)
	5-10 years (19.3%)	5-10 years (22.8%)	5-10 years (13.8%)	5-10 years (10.6%)
	>10 years (40.4%)	>10 years (39.2%)	>10 years (25.0%)	>10 years (27.7%)

Working hours	Part-time (33.3%)	Part-time (39.2%)	Part-time (28.7%)	Part-time (17.0%)
	Full-time (66.7%)	Full-time (60.8%)	Full-time (71.3%)	Full-time (83.0%)
Reasons office – Team meetings	4.18	3.71	4.26	4.51
Reasons office – Social contacts	4.28	3.80	4.44	4.79
Reasons office – Meeting new colleagues	4.28	3.89	4.34	4.72
Reasons office – Collaboration with colleagues	4.14	3.35	4.11	4.70
Reasons office – Learning from each other	4.07	3.29	4.04	4.55
Reasons office – Personal circumstances	2.47	2.61	2.81	3.55
Work pressure	4.26	3.96	4.11	3.96
Task interdependence	3.50	3.33	3.72	3.82
Trust from supervisor	4.26	4.22	4.32	4.34

Appendix G – Visual representation differences between groups



Visualization Task interdependence



Appendix H – Scenarios

Scenario 1a – 50/50, with fixed days and all day in the office

	Group 1	Group 2	Group 3	Group 4
<i>50% home, 50% office</i>	150.22	-5.32	120.18	89.94
<i>Fixed days at the office/home</i>	15.29	-10.38	-3.05	6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>All day at the office</i>	36.18	-21.09	8.36	28.63
Total	243.42	-21.06	155.20	143.83

Scenario 1b – 50/50, with fixed days and varying attendance per day

	Group 1	Group 2	Group 3	Group 4
<i>50% home, 50% office</i>	150.22	-5.32	120.18	89.94
<i>Fixed days at the office/home</i>	15.29	-10.38	-3.05	6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>Different each time</i>	-2.54	13.66	11.64	0.11
Total	204.70	13.69	158.47	115.31

Scenario 1c – 50/50, with varying days and all day in the office

	Group 1	Group 2	Group 3	Group 4
<i>50% home, 50% office</i>	150.22	-5.32	120.18	89.94
<i>Days at the office/home differ per week</i>	-15.29	10.38	3.05	-6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>All day at the office</i>	36.18	-21.09	8.36	28.63
Total	212.84	-0.30	161.30	131.69

Scenario 1d – 50/50, with varying days and varying attendance per day

	Group 1	Group 2	Group 3	Group 4
<i>50% home, 50% office</i>	150.22	-5.32	120.18	89.94
<i>Days at the office/home differ per week</i>	-15.29	10.38	3.05	-6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>Different each time</i>	-2.54	13.66	11.64	0.11
Total	174.12	34.45	164.58	103.17

Scenario 2a – 75/25, with fixed days and all day in the office

	Group 1	Group 2	Group 3	Group 4
<i>75% home, 25% office</i>	38.88	137.33	102.87	-51.46
<i>Fixed days at the office/home</i>	15.29	-10.38	-3.05	6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>All day at the office</i>	36.18	-21.09	8.36	28.63
Total	132.08	121.59	137.89	2.43

Scenario 2b - 75/25, with fixed days and varying attendance per day

	Group 1	Group 2	Group 3	Group 4
<i>75% home, 25% office</i>	38.88	137.33	102.87	-51.46
<i>Fixed days at the office/home</i>	15.29	-10.38	-3.05	6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>Different each time</i>	-2.54	13.66	11.64	0.11
Total	93.36	156.34	141.17	-26.09

Scenario 2c – 75/25, with varying days and all day in the office

	Group 1	Group 2	Group 3	Group 4
<i>75% home, 25% office</i>	38.88	137.33	102.87	-51.46
<i>Days at the office/home differ per week</i>	-15.29	10.38	3.05	-6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>All day at the office</i>	36.18	-21.09	8.36	28.63
Total	101.50	142.35	143.99	-9.71

Scenario 2d - 75/25, with varying days and varying attendance per day

	Group 1	Group 2	Group 3	Group 4
<i>75% home, 25% office</i>	38.88	137.33	102.87	-51.46
<i>Days at the office/home differ per week</i>	-15.29	10.38	3.05	-6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>Different each time</i>	-2.54	13.66	11.64	0.11
Total	62.78	177.10	147.27	-38.23

Scenario 3 – 25/75, with fixed days and all day in the office

	Group 1	Group 2	Group 3	Group 4
<i>25% home, 75% office</i>	-85.56	-140.39	-12.37	105.02
<i>Fixed days at the office/home</i>	15.29	-10.38	-3.05	6.07
<i>Team arrangements with flexibility to deviate</i>	41.73	15.73	29.71	19.19
<i>All day at the office</i>	36.18	-21.09	8.36	28.63
Total	7.64	-156.13	22.65	158.91