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Exploring hybrid-working preferences of knowledge workers using a stated choice experiment

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Abstract

Purpose – Hybrid working is becoming commonplace, but scientific research on employee preferences for hybrid-working arrangements is still scarce. The current study investigated knowledge-worker preferences for hybrid-working scenarios, considering the relative importance of hybrid-working aspects and differences among knowledge workers associated with differences in preferences.

Design/methodology/approach – The study was conducted in a large governmental organization in the Netherlands. Attributes and levels for the choice-based experiment were developed in an iterative process involving several groups of stakeholders. A survey containing sociodemographic and work-related measures and a choice-based experiment was completed by 263 policy officers.

Findings – Conjoint analyses showed that the most important attribute was the "Distribution of days" (i.e. the percentage of time at home versus the office). Four employee segments were identified: home workers, hybrid fixed, hybrid flex and office workers, each with a different pattern of preferences. The segments differed on age/tenure, task interdependence, household composition (young children or not) and motives for coming to the office.

Research limitations/implications – The study reveals that differences in preferences are associated with different combinations of demographic and work characteristics rather than one specific characteristic. Findings align with theories on work–life balance, (family) life-cycle stages and needs-supply fit.

Practical implications – Study findings support managerial decision-making on which hybrid-working scenario(s) to implement, considering the preferences of different groups of employees.

Originality/value – The study contributes to the literature on hybrid working and represents a novel application of conjoint analysis.

Keywords Hybrid working, Stated choice experiment, Conjoint analysis, Sociodemographic characteristics, Work characteristics

Paper type Research paper

Since the term teleworking was introduced in the 1970s and 1980s, more employees have been working from home at least part-time, which peaked during the COVID-19 pandemic when millions of workers were forced to telework due to government restrictions. Employees have experienced the positive effects of working from home, such as saving commuting time, greater flexibility, and improved work-life balance. However, risks are also identified, such as difficulties in maintaining work-life boundaries, decreased social interactions, and reduced

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learning opportunities (e.g. Ipsen *et al.*, 2021). Following the notion that hybrid working is the "best of both worlds", combining telework and on-site work (Morganson *et al.*, 2010), Urien (2023) recommends that organizations introduce hybrid working programs that fit employee preferences and maximize positive effects on well-being. However, although there has been some work on defining the concept of hybrid working (e.g. Beno, 2021; Halford, 2005), the context of mandatory teleworking (often full-time) during the COVID-19 pandemic is dominant in recent research and research on working arrangements that are actually hybrid is still scarce, usually discussing isolated elements of hybrid working, but not combining or integrating them (e.g. Dorenbosch, 2021).

Since hybrid working is becoming the new way of working, it is crucial to obtain insights into how to implement hybrid working in organizations while keeping in mind employees' well-being and maintaining desired productivity. Although the urge to organize and implement hybrid ways of working is evident, organizations struggle to arrange it and integrate employees' preferences. Especially larger organizations seem to opt for a "one-size-fits-all" solution, implementing one format for hybrid working, typically three days at the office and two days at home (e.g. BBC, 2022; Deadline, 2022). Recent research showed that hybrid working in a "3-plus-2" arrangement did not, on average, hamper performance or the rate of promotions and increased job satisfaction and retention compared to working at the office full-time (Bloom *et al.*, 2024).

However, to achieve desired productivity and performance at work, there needs to be a fit between person and environment (e.g. Armitage and Amar, 2021). A relevant concept in this context is *time-spatial fit*, 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" (Wessels, 2017, p. 25). It aligns well with hybrid working, which offers employees flexibility in when and where to work, thereby enhancing time-spatial flexibility, 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). By optimizing their time-spatial fit, employees can exploit the advantages of time-spatial flexibility (Wessels *et al.*, 2019).

Employees are likely to differ in their preferences regarding time-spatial flexibility, e.g. due to demographic or work characteristics (e.g. Hill *et al.*, 2008). In addition, individual employees' preferences involve trade-offs because arrangements in which every aspect is optimal are unlikely to occur given constraints. Organizations must be aware of their employees' preferences to create working arrangements based on the trade-offs that employees make. Mapping out these trade-offs is, therefore, essential. A method that has these trade-offs at its core is the stated choice experiment (SCE), in which individuals are presented with hypothetical alternatives that are described by several characteristics (called attributes) and asked to choose the alternative they prefer given a specific context (Louviere *et al.*, 2000; Hensher *et al.*, 2015).

Given the trade-offs inherent in hybrid working, an SCE would be suitable to elicit employees' preferences for hybrid working arrangements. SCEs and conjoint analysis (the model estimation procedure) have been widely used in marketing and consumer research to investigate preferences regarding new products and services [1]. There have been applications in other domains, such as litigation, employee benefit packages, or housing preferences (e.g. Green and Srinivasan, 1990; Nijënstein *et al.*, 2015).

Research on applying SCE to preferences for organizing work is scarce. Recently, Appel-Meulenbroek *et al.* (2022) investigated how office and home workspace design influences employees' choice behavior. They focused on relatively tangible characteristics of office work, such as noise, crowdedness, openness of the workspace, and availability of concentration spaces. Their principal findings were that mainly crowdedness and the availability of concentration and meeting spaces determined employees' choices. Apart from this study, we are unaware of research on hybrid-working preferences via SCEs.

Job characteristics that make a profession suitable for working from home are, for instance, individual control of work pace and little need for face-to-face interaction (Bailey and Kurland, 2002). Knowledge-worker jobs (e.g. in accounting/finance, ICT, legal, and marketing) are suitable for hybrid work because they involve creating, managing, transforming, and disseminating information for which centralization of information is needed, not physical centralization (Illegems *et al.*, 2001). In 2022, an estimated 58% of knowledge workers worked hybrid (Future Forum, 2022). Therefore, knowledge workers were the focus of our study.

The *aim of the research* was to investigate knowledge-worker preferences for hybrid working scenarios, considering the relative importance of hybrid working aspects and differences among the employees. This contributes to a better understanding of how hybrid working arrangements should be designed considering relevant employee and work characteristics.

Our main research question was:

How should hybrid working be set up for knowledge workers to optimize their time-spatial fit?

Research questions

Given its exploratory nature, we opted for research questions rather than hypotheses to guide our study. Answering the main research question involves multiple steps, starting with defining relevant hybrid work characteristics (attributes) and their values (levels). Thus,

RQ1. What are relevant attributes of knowledge-worker hybrid-working preferences, and which levels of these aspects are relevant to investigate?

Unlike SCEs with relatively obvious attributes, there is little guidance on attributes and levels. Therefore, a thorough qualitative phase to establish attributes and levels is recommended for the validity of the SCE (Kløjgaard *et al.*, 2012). Since employees are expected to have different preferences, a participative approach involving relevant stakeholders is advised to gain acceptance of the chosen hybrid-working arrangement (e.g. Janssen *et al.*, 2018).

Once these attributes and their levels are identified, employees' preferences among these levels should be investigated. Additionally, it should be explored which attributes contribute to which extent to preferred arrangements.

RQ2. What is the relative importance of the attributes for knowledge workers' time-spatial fit, and which levels are most preferred by knowledge workers?

It is known that employees' preferences regarding hybrid-working options may vary. Priorities differ among employees, given their personal and work characteristics and their needs or expectations for work. Therefore, knowing which characteristics are important in a hybrid work setting is relevant. Hence,

RQ3. What are subsets of employees with similar preferences, and how do these subsets differ with respect to employee and work characteristics?

Previous research was reviewed to identify demographic and work characteristics that may impact knowledge-worker hybrid-working preferences. See Table 1 for an overview. Identifying heterogeneity in employee preferences and relating this to employee and work characteristics helps an organization predict the consequences for different groups of employees holding different preference patterns when deciding to implement (a) particular scenario(s). Therefore, the final research question addresses how the preferences of employee subsets can be used to decide which arrangement(s) to implement.

RQ4. Given the preferences, how can different scenarios for hybrid working arrangements be compared to inform decision-making on the arrangement(s) to be implemented?

Table 1. Demographic and work characteristics that may impact knowledge-worker hybrid-working preferences

Gender	Older studies showed mixed results on teleworking's gender impacts (e.g. Gajendran and Harrison, 2007). However, Lyttelton *et al.* (2020) found that women's productivity and mental well-being suffered due to increased family demands, blurring work-family boundaries
Age	Age influences work environment preferences. Younger employees tend to value teamwork, social interaction, and innovation more than older employees, who often have stronger networks due to more advanced careers (Westerman and Yamamura, 2007)
Tenure	The more time an employee has spent in an organization, the more likely they have experience with its culture, norms, and expectations. Employees with a shorter tenure may prefer to mainly work at the office because they are less acquainted with the organization and its expectations (Turetken *et al.*, 2011)
Commuting time	Bailey and Kurland (2002) found no link between commuting time or distance and working from home. However, Helminen and Ristimäki (2007) showed that longer commutes increased a preference for teleworking. During COVID-19, reduced commuting time was considered a significant teleworking benefit (Ipsen *et al.*, 2021)
Household composition	Employees with young children in the household had a lower preference for working from home than employees without children due to increased family-to-work conflict related to higher supervision needs and more interruptions (Schieman *et al.*, 2021; Zhang *et al.*, 2020). In households where the youngest child is older than 12, employees did not experience increased family-work conflict when working from home due to the higher self-reliance of these children (Schieman *et al.*, 2021). For households without children, single individuals are more likely to telework than individuals living together, probably due to experiencing low work-family and family-work conflict when working from home (Zhang *et al.*, 2020)
Suitability of home office	Research during COVID-19 found that one-third of home offices were deficient, lacking dedicated workspaces, and having issues with lighting, furniture, and online access (Cuerdo-Vilches *et al.*, 2021). This could lead to ergonomic problems and reduced productivity due to distractions
Working hours per week	Individuals working part-time may perceive hybrid working arrangements as less impactful than full-time employees (Gajendran and Harrison, 2007)
Job position	While employees may experience increased autonomy in hybrid work, managers may fear losing control (Gajendran and Harrison, 2007). The need to adapt leadership behaviors for hybrid work can make managers reluctant to support the change (Stoker *et al.*, 2021)
Work pressure	Hybrid working arrangements that allow employees to work from home more frequently are likely to reduce an employee's work pressure (Sardeshmukh *et al.*, 2012), e.g. due to reduced commuting time
Task interdependence	Highly task-interdependent teams require knowledge sharing, information exchange, and interaction among team members. Therefore, when members of such teams work more often from home, this could hinder their collaboration (Gajendran and Harrison, 2007)
Trust from the supervisor	Hybrid working limits direct supervision and requires more supervisor trust (Stoker *et al.*, 2021). Low trust may lead to the use of monitoring software or detailed agreements to control remote work, reducing employees' preference for working from home (Gajendran and Harrison, 2007)

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Methods

The study was conducted in five departments of a large governmental organization in the Netherlands, mainly consisting of knowledge workers (policy officers). RQ1 was investigated in a qualitative study among stakeholders and experts, and RQ2-4 through an SCE.

Steps in SCEs are (e.g. Hensher *et al.*, 2015; Janssen *et al.*, 2018): selection of influential attributes, specification of relevant attribute levels, selection of the experimental design,

constructing the choice task, data collection, and model estimation. In the following, we explain how we conducted these steps.

Selection of influential attributes and specification of their relevant levels (RQ1)

A multi-disciplinary group of stakeholders was involved in establishing relevant attributes and levels. Internal stakeholders included policy officers (5 employees), managers (2), executive secretaries (2), and members of a project group on hybrid working (6). External stakeholders included workplace management experts (2) and methodology and statistics specialists (3). Semi-structured interviews were conducted among the internal stakeholders to understand which hybrid working aspects would be relevant to the knowledge workers. This resulted in the first set of attributes and levels, which external stakeholders assessed on the extent to which it represented the domain of hybrid working while conforming to the criteria (e.g. Hensher *et al.*, 2015). This resulted in the second set, adjusted for length and clarity, with one additional level to cover the full range of possibilities (Orme, 2019). The internal stakeholders verified its applicability in the specific organizational context. This resulted in a third set, which the external stakeholders evaluated and adjusted (minor changes). In a final step, a pilot study among policy officers resulted in minor adjustments to phrasing. The final set is shown in Table 2.

Designing the stated choice experiment

Given the number of attributes and levels, a full-factorial design would result in 120 (5×2×4×3) possible hybrid-working scenarios, which is not feasible to present to individual participants. To reduce this number while still being able to estimate all main effects (Louviere *et al.*, 2000), a balanced overlap design was selected (Chrzan and Orme, 2000) containing 12 choice tasks per participant with three hypothetical hybrid-working scenarios each (consisting of different combinations of attribute levels). This design ensures that each attribute level appears equally often yet includes intentional overlap between levels within attributes, increasing clarity and consistency among respondents (Jonker *et al.*, 2018).

In the survey, the participants were first introduced to hybrid working and time-spatial fit. They were asked to imagine being in a situation where they were allowed to work in a hybrid way. Then, the participants were introduced to each attribute and its levels to ensure they understood all relevant elements. Subsequently, the stated choice experiment was presented: 12 choice tasks containing three different hybrid-working arrangements from which

Table 2. The final set of attributes and their levels

Attribute	Number of levels	Attribute levels
Distribution of days	5	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
Flexibility per week	2	Fixed days at the office/home Days at the office/home differ per week
Arrangements hybrid working	4	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
Attendance per day	3	All day at the office Part of the day at the office Different each time

Source(s): Created by authors

respondents needed to indicate their preferred option, including a "none" option in case the respondent found all three options unacceptable.

Additional measures

The survey also included the socio-demographic and work characteristics (Table 1). *Work pressure* was measured using four items from the organization's employee satisfaction survey because the employees were familiar with them, and the findings might also be used to identify trends over time. Three items were measured on a seven-point Likert scale ranging from "completely disagree" to "completely agree," e.g. "I often have more work to do than I can handle." The fourth item - "I experience my work pressure as . . . " - was measured on a seven-point scale ranging from "way too low" to "way too high." Cronbach α was 0.85. *Task interdependence* was measured using three items from Van der Vegt *et al.* (2001) on a five-point Likert scale ranging from "strongly disagree" to "strongly agree," e.g. "I have to obtain information and advice from my colleagues in order to complete my work" ($\alpha = 0.77$). *Trust from supervisor* was measured using three items from De Leede and Kraijenbrink (2014), on a five-point Likert scale ranging from "strongly disagree" to "strongly agree," e.g. "My supervisor trusts me" ($\alpha = 0.83$).

Lastly, six single-item questions tapped into an employee's *reasons for coming to the office* (identified in the stakeholder discussions): team meetings, social contacts, meeting new colleagues, collaboration with colleagues, learning from each other, and personal circumstances. These might differ for different employee groups and contribute to explaining employees' preferences.

Participants and data collection procedure

The survey was created using Lighthouse Studio 9.13.1 (Sawtooth Software, Inc, 2022). Data was collected in March 2022. In total, 457 employees were invited to participate, and 263 (57.5%) completed the survey. This number is considered sufficient to estimate preferences reliably: it exceeds the generally suggested minimum of 200 participants (Orme, 2019) and the minimum number of participants for a 12-task, three-alternative design with a five-level maximum recommended by Sawtooth ($N = 139$; Sawtooth Software, Inc, 2022). Table 3 provides an overview of respondent characteristics.

While our study did not require submission to an Ethical Review Board at the time, we adhered to the university's policies on the ethical treatment of participants. Participation was voluntary and anonymous.

Model estimation: conjoint analysis

In choice-based conjoint analysis, preferences are typically expressed as part-worth utilities, i.e. respondents' preference for each attribute level relative to the other levels in the same attribute. The overall preference for a specific combination of levels (e.g. a specific hybrid-working scenario) is indicated by the sum of the utilities associated with the concomitant levels.

To answer RQ2 (importance of attributes and preferences for levels), we used *Hierarchical Bayes (HB) analysis*. This method estimates individual part-worth utilities by borrowing information from the population describing the preferences of other respondents. The HB model is the overall model from which respondents' preference choices can be obtained. These can be aggregated to the overall sample to provide insight into the relative importance of the attributes and the overall utility of each attribute level.

Latent class analysis was used to assign respondents to segments with similar preference patterns. It estimates each segment's part-worth utilities and the probability that a respondent belongs to a segment. Further analyses investigate differences among the segments for the

Table 3. Descriptive statistics of respondents

Characteristic	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 years	70	26.6%
Household composition	Single household	51	19.4%
	With a partner, without (resident) children	88	33.5%
	Household with young children (≤12 years)	67	25.5%
	Household with older children only (>12 years)	57	21.7%
Suitability of home office	Yes	199	75.7%
	No	18	6.8%
	Sometimes	46	17.5%
Commuting 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%
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 ≤ 36 h/week	78	29.7%
	>36 h/week	182	69.2%
Job function	Managerial position	19	7.2%
	Non-managerial position	244	92.8%

Source(s): Created by authors

socio-demographic, work characteristics, and motive variables (with each respondent allocated to a specific segment). This answers RQ3.

To answer RQ4, we compared the preferences (overall and per employee segment) for the organization's current limited hybrid working arrangement to two with high overall utility.

Results

Attribute relative importance and parameter estimates (RQ2)

The findings in Table 4 show that *Distribution of days* is considered the most important attribute. Regarding preferred levels, for *Distribution of days*, "75% home, 25% office" and "50% home, 50% office" have high positive average utilities, whereas "Almost entirely at the office, occasionally at home" has high negative utility. For the other three attributes, "Days at the office/home differ per week," "Team arrangements with flexibility to deviate," and "(attendance) Different each time" are preferred when only considering the levels with the highest utility.

Employee segments and their characteristics (RQ3)

In the latent class analysis, two to five segments were compared employing AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) as fit indices. The five-segment solution had the lowest AIC (5861.65) and BIC (6219.02). However, the gains

Table 4. Attribute relative importance and parameter estimates from the Hierarchical Bayes model

Attribute	Relative importance	Level	B	95% CI LB	95% CI UB
Distribution of days	67.8%	Almost entirely at home, occasionally to the office	0.000	−0.563	0.562
		Almost entirely at the office, occasionally at home	−3.689***	−4.140	−3.238
		50% home, 50% office	2.282***	1.987	2.577
		25% home, 75% office	−1.103***	−1.459	−0.747
		75% home, 25% office	2.510***	2.179	2.842
Flexibility per week	5.6%	Fixed days at the office/ home	−0.084**	−0.144	−0.024
		Days at the office/home differ per week	0.084**	0.024	0.144
Arrangements hybrid working	14.6%	Maximum freedom to choose where I work	0.107*	0.026	0.189
		Team arrangements without obligations	0.101*	0.023	0.179
		Team arrangements with flexibility to deviate	0.659***	0.612	0.705
		Team arrangements that everyone has to stick to	−0.867***	−0.979	−0.754
Attendance per Day	12.1%	All day at the office	0.010	−0.017	0.216
		Part of the day at the office	−0.398***	−0.491	−0.306
		Different each time	0.299***	0.236	0.362

Note(s): ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$
Source(s): Created by authors

compared to a four-segment solution were smaller than the gains going from a two-segment (AIC = 6932.61, BIC = 7071.84) to a three-segment (AIC = 6429.38, BIC = 6641.38) to a four-segment solution (AIC = 6025.33, BIC = 6310.01). The smallest segment in the five-group solution consisted of only 8.7% of the participants. As it is advised to remove small segments (<10%; Sawtooth Software, 2022), the four-segment solution was chosen.

Table 5 contains the segments' relative importance scores and parameter estimates. For all four segments, *Distribution of days* is the most important attribute, with Segment III considering it somewhat less important than the other three segments. Some differences can be observed in the importance shares of the other attributes.

As expected, given the purpose of the latent class analyses to identify patterns of preferences, there are substantial differences regarding preferred levels for most attributes. The differences for *Distribution of days* are most striking: Segment I has positive utility for the levels that indicate more frequently working at home and negative utility for the levels that indicate working more frequently at the office. For Segment IV, this is reversed but a bit less pronounced. Segments II and III have the highest utility for the 50-50 hybrid option. They differ slightly regarding the amount of flexibility allowed for *Attendance per day*, with Segment II having a higher preference for "Different each time" and a lower preference for "All day at the office." We therefore chose the following labels: I Home workers, II Hybrid Flex, III Hybrid fixed, and IV Office workers.

The segments differ significantly regarding age ($H(3) = 26.05$, $p < 0.001$), tenure ($H(3) = 10.75$, $p < 0.05$), household composition ($\chi^2(9) = 23.04$, $p < 0.01$), and suitability of the home office ($\chi^2(6) = 14.01$, $p < 0.05$). They do not differ regarding commuting time, working hours, gender, and job function. In *Segment I (Home workers)*, older (≥56 years old) and long-tenure (>10 years) employees are overrepresented. Their households less often include younger children. In *Segment II (hybrid flex)*, employees with more than five years of tenure

Table 5. Attribute importance and parameter estimates for the four-segment solution

Attribute	Attribute importance and level	I Home workers $N = 79$ (30.0%)	II Hybrid flex $N = 80$ (30.4%)	III Hybrid fixed $N = 57$ (21.7%)	IV Office workers $N = 47$ (17.9%)
Distribution of days	Importance	71.48%	76.22%	58.94%	75.79%
	Almost entirely at home, occasionally to the office	5.453***	−0.990***	−1.269**	−5.944***
	Almost entirely at the office, occasionally at home	−6.233***	−5.591***	−1.679***	1.385**
	50% home, 50% office	0.093	3.963***	2.485***	2.853***
	25% home, 75% office	−4.306***	−0.554**	−0.906***	3.106***
	75% home, 25% office	4.992***	3.172***	1.369***	−1.401***
Flexibility per week	Importance	5.19%	1.53%	7.65%	3.03%
	Fixed days at the office/ home	−0.332***	−0.036	0.007	0.142*
	Days at the office/home differ per week	0.332***	0.036	−0.007	−0.142*
Arrangements hybrid working	Importance	14.64%	14.34%	15.95%	6.84%
	Maximum freedom to choose where I work	0.685***	−0.024	−0.068	−0.428***
	Team arrangements without obligations	0.324***	0.006	0.029	−0.027
	Team arrangements with flexibility to deviate	0.405***	0.816***	0.677***	0.795***
	Team arrangements that everyone has to stick to	−1.414***	−0.799***	−0.638***	−0.340*
Attendance per Day	Importance	8.69%	7.91%	17.46%	14.34%
	All day at the office	−0.587***	0.179*	0.452**	0.692***
	Part of the day at the office	0.053	−0.489***	−0.579***	−0.784***
	Different each time	0.535***	0.310***	0.127	0.092

Note(s): ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$
Source(s): Created by authors

are overrepresented, and they have more suitable home offices than the other segments. In *Segment III (Hybrid fixed)*, employees with less than five years of tenure are overrepresented, and they more often have households with young children. In *Segment IV (Office workers)*, younger employees (<35 years old) with brief tenure (<2 years), households without children, and a less suitable home office are overrepresented.

Of the three work characteristics, only task interdependence differed among the four segments, with the office workers and hybrid flex segments reporting higher task interdependence than the home workers segment (see Table 6). Regarding reasons for coming to the office, the differences among the segments are highly significant and large. For the office worker segment, all reasons are more important than for the home workers segment, with the hybrid segments typically in between.

Comparison of hybrid-working arrangements (RQ4)

To illustrate how the preferences per segment can be used to assess different scenarios (RQ4), we compared three scenarios.

Table 6. One-way ANOVA results for work characteristics and reasons for coming to the office

	F(3)	All	I Home workers	II Hybrid flex	III Hybrid fixed	IV Office workers
Work pressure	0.826	4.07 (1.237)	3.96 (1.128)	4.11 (1.147)	4.26 (1.470)	3.96 (0.980)
Task interdependence	6.207***	3.57 (0.737)	3.33[a] (0.834)	3.72[b] (0.610)	3.50[a,b] (0.738)	3.82[b] (0.636)
Trust	0.549	4.28 (0.601)	4.22 (0.718)	4.32 (0.522)	4.26 (0.571)	4.34 (0.554)
Team Meetings	8.770***	4.12 (0.961)	3.71[a] (1.052)	4.26[b] (0.882)	4.18[b] (0.984)	4.51[b] (0.621)
Social Contacts	16.900***	4.27 (0.870)	3.80[a] (0.838)	4.44[b,c] (0.777)	4.28[b] (0.940)	4.79[c] (0.549)
Meeting new colleagues	13.464***	4.26 (0.782)	3.89[a] (0.698)	4.34[b] (0.856)	4.28[b] (0.726)	4.72[c] (0.540)
Collaboration with colleagues	25.809***	4.00 (0.983)	3.35[a] (1.038)	4.11[b] (0.857)	4.14[b] (0.875)	4.70[c] (0.462)
Learning from each other	19.478***	3.91 (1.043)	3.29[a] (1.123)	4.04[b] (0.934)	4.07[b] (0.904)	4.55[c] (0.653)
Personal circumstances	6.169***	2.81 (1.428)	2.61[a] (1.381)	2.81[a] (1.360)	2.47[a] (1.537)	3.55[b] (1.248)

Note(s): ***$p < 0.001$. Means and standard deviations are displayed per segment. Different superscripts indicate segment differences for the variable at the $p < 0.05$ level (Tukey HSD test)
Source(s): Created by authors

Scenario 1 (the organization's current hybrid working policy): "25% home, 75% office", "Fixed days at the office/home," "Team arrangements with flexibility to deviate," "All day at the office."

Scenario 2: "50% home, 50% office", "Days at the office/home differ per week," "Team arrangements with flexibility to deviate," "Attendance different each time."

Scenario 3: "75% home, 25% office", "Days at the office/home differ per week," "Team arrangements with flexibility to deviate," "All day at the office."

The overall utility per scenario was calculated as the sum of the HB utility estimates of the levels, both overall and for each segment. Scenario 1 has a slightly negative overall utility (−0.518) and represents high utility for Segment IV (office workers; 4.451) but extremely low utility for Segment I (home workers; −5.220). Scenarios 2 and 3 have similar positive utility across all participants (3.224 vs 3.095). There are differences among the segments, especially for Segment I (home workers: 1.365 vs 5.142) and Segment IV (office workers: 2.722 vs −0.056). If choosing between scenarios 2 and 3, the organization would have to decide whether to prioritize home worker or office worker preferences. The analysis provides a solid foundation for this decision.

Discussion

Our study aimed to investigate hybrid-working preferences, considering the relative importance of hybrid working attributes and differences among employees. The conjoint analysis results revealed that the distribution of days at the office vs at home was the most important attribute and thus had the highest impact in hybrid-working scenarios based on the detailed preferences. The three other attributes represented only a third of overall importance. Preferred levels overall were "75% home, 25% office" for *Distribution of days*, "Days at the office/home differ per week" for *Flexibility per week*, "Team arrangements with flexibility to deviate" for *Arrangements hybrid working*, and "Different each time" for *Attendance per day*

(RQ2). However, identifying four segments of employees uncovered substantially different patterns of preferences with no single hybrid-working arrangement optimal for all segments (RQ3). Our study created insights into the work and employee characteristics and motives underlying the segments' preferences, allowing for more informed decision-making regarding the arrangement(s) to implement (RQ4).

We confirmed relevant socio-demographic characteristics found in previous research: age and (especially) tenure, household composition (specifically young children), and suitability of the home office. We did not find an effect of commuting time on hybrid-working preferences, perhaps due to the relatively small travel distances in the Netherlands. The amount of teamwork influenced hybrid-working preferences primarily through lower task interdependence in the "home worker" segment.

Theoretical implications

Hybrid working enables employees to find their optimum in the trade-off between work-family conflict (higher when working from the office) and family-work conflict (higher when working from home; Golden *et al.*, 2006). More specifically, the findings regarding the role of household composition tie in with research on (family-)life cycle stages (Kapinus and Johnson, 2003). In line with other research (e.g. Zhang *et al.*, 2020; Hill *et al.*, 2008), we observed that having young children played a role in hybrid-working preferences, with the "hybrid fixed" segment having a larger share of households with young children. However, the more "extreme" segments–"Home workers" and "Office workers"–both have a high share of employees without (young) children, indicating that household composition only partially explains the findings.

The clearest differences among the four segments are observed for tenure, indicating that the lower the tenure, the higher the preference for primarily working at the office. These findings can be interpreted through theories of person-job fit. For example, needs-supply fit is defined as the congruence between the individuals' needs on the one hand and the experienced job characteristics on the other (Kristof-Brown *et al.*, 2005). For younger employees starting their careers, working at the office may present more resources to satisfy their needs, such as building relationships, clarifying expectations, obtaining feedback, and developing themselves. This is confirmed by some reasons for coming to the office in our study: social contacts, meeting new colleagues, and learning from each other. In our sample, 71 employees had less than two years of tenure. This group likely included employees still in the socialization phase of their organizational tenure (e.g. Cooper-Thomas and Anderson, 2006).

The research findings demonstrate the connection between individuals, family and home, and work and workplace, as also identified in ecological system theory combined with person-environment fit (Yang and Sanborn, 2021). We demonstrate that differences in preferences are associated with different combinations of demographic and work characteristics rather than a dominant single characteristic. Follow-up research may, for example, examine the relations between specific combinations of these characteristics and experienced time-spatial fit in actual hybrid working arrangements. It is also clear that there is a strong and complex connection between different systems (e.g. an individual's family life and work life), and those connections also merit further research.

Practical implications

Our study provides important insights for organizations implementing hybrid working. Firstly, allowing employees to state their preferences brings multiple benefits to the employees and the organization (Morganson *et al.*, 2010). Organizations should acknowledge that employees may differ in preferences based on personal and job-related factors, including job experience and need for resources, the degree of teamwork, and work-home balance issues. Thus, ideally, decisions on hybrid working are part of a coherent HRM strategy that focuses on sustainable employment and considers employees' needs in both the life and work domain. Therefore,

organizations should expand their workplace definition to include remote work. For the organization in our study, a couple of scenarios would offer a good time-spatial fit for most knowledge workers, with 50–75% working at home. This does not fit entirely with the 3-plus-2 ratio (three days at the office, two days at home) that many organizations adopted after the COVID-19 pandemic (e.g. BBC, 2002) and which, on average, compares favorably to working fully at the office (Bloom *et al.*, 2024). Nevertheless, these organizations are advised not to enforce strict compliance but to allow employees some leeway to deviate to enhance time-spatial fit based on their individual needs.

Limitations and future research

We conducted our study among knowledge workers at a large governmental organization, where most employees were knowledge workers. Therefore, results are not necessarily generalizable to smaller organizations, organizations in the private sector, organizations with a smaller share of knowledge workers or a more diverse workforce, or organizations that differ on variables such as age/tenure distribution or amount of teamwork. Additional research is needed in these different contexts. Nevertheless, our study's detailed insights may guide organizations in implementing hybrid working.

A second limitation concerns the SCE choice task, which was considered complex. This aligns with Selka *et al.* (2012), who indicated that most conjoint analysis limitations occur because of the many combinations of attributes and levels, potentially causing information overload, boredom, or fatigue. In our study, each option consisted of a potential future reality with its associated consequences (e.g. managing a household with young children, obtaining job competencies), which might have made these choices more difficult than for the typical context in which SCEs are used. Future research could examine how these complex choices are best presented.

Although not a limitation *per se*, it is striking that there was one dominant attribute (Distribution of days) of which the utilities basically "overruled" the other attributes' utilities. It is unclear to what extent this was due to respondents perhaps finding it easier to grasp than the other attributes. Carrying out the SCE among a population with substantial hybrid working experience may provide insights into this issue.

Conclusion

As hybrid working becomes standard practice, learning how to implement it successfully is essential. This choice-based experiment demonstrated that even within a single organization, there is no one optimal arrangement and that employee preferences differ due to multiple factors. Therefore, to bring the most benefit to all involved, hybrid work should not be prescriptive and standardized but tailor-made and enabled by the organization.

Notes

1. For example, consumer preferences for electric cars could be investigated by creating scenarios with different cars containing various attributes (e.g. purchase price, driving range, recharging time, and maximum speed) and presenting participants with choice tasks in which they have to indicate their preference among electric cars containing competing combinations of attribute levels (e.g. $40,000, 300 miles, 60 min, and 150 km/h versus $50,000, 300 miles, 30 min, and 180 km/h).

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