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ORIGINAL ARTICLE

# Willingness to pay heterogeneity for accommodating job attributes among people with diabetes

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**Abstract**

People with diabetes experience increasing needs for accommodation as their workability diminishes due to their disease. Companies and society have economic incentives to ensure that people with diabetes keep their attachment to the labour market. In the present paper, we estimate the preferences and willingness to pay (WTP) among people with diabetes for going on part-time, receiving job accommodation relative to skills, having more breaks during working hours, and taking time off during working hours for medical visits/educational activities. Using a latent class model, we test and showcase how preferences and WTP vary over individual and job characteristics.

JEL CLASSIFICATION

C25, I10, J14, J33

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# 1 | INTRODUCTION

Diabetes mellitus, hereafter just diabetes, is, in its different manifestations, one of the most common chronic conditions. In addition to the annual direct cost of diabetes treatments, measured at $116 billion in medical expenditures in the United States alone, Dall et al. (2008) estimate the indirect costs due to productivity losses in the United States to be $58 billion. Other studies report similar significant economic losses in productivity (Afroz et al., 2020; Magliano et al., 2018; Png et al., 2016).

Diabetes-associated work disability is thus well documented (Breton et al., 2013) and is associated with less work productivity and working fewer hours per week (Lavigne et al., 2003), unemployment (Dray-Spira et al., 2013; Ervasti et al., 2015) and disability pension (Bender et al., 2021; Hansen et al., 2018; Nexø et al., 2020; Tunceli et al., 2005). These adverse labor market outcomes can lead to substantial working years lost within a working life span (Nexø et al., 2021). Other individual socio-demographic characteristics and comorbid conditions also contribute to the trajectory of work disability (Ervasti et al., 2015).

Given this, strategies are urgently needed to increase employment periods and prevent early retirement. One of the tools that can be used to address the challenges people with diabetes (PWDs) face in this context is the workplace/work-task accommodations and unmet accommodation needs (American Diabetes Association, 2009; Butler et al., 2014; Gignac et al., 2018; Hakkarainen et al., 2016).

Regular breaks, support from colleagues and managers, and other accommodation types may help vulnerable employees in general and PWD specifically to manage lower workability at the workplace (Breton et al., 2013; Detaille et al., 2006; Ruston et al., 2013; Werth, 2015) and labor market attachment, see a recent review by Jansen et al. (2021). Insight into the workplace accommodation needs and preferences among PWDs can direct employers' awareness toward the most relevant accommodation types (Kollerup & Ladenburg, 2021). The economic valuation method, choice experiment (CE), has previously been used to obtain latent job attribute preferences in general (Eriksson & Kristensen, 2014; Mandeville et al., 2014; Möser et al., 2019). Only a handful of studies (Kollerup & Ladenburg, 2021; Madsen et al., 2019; Nexø et al., 2017) have applied CE to elicit preferences for job accommodation attributes conditional on having a severe disease/illness.

This study contributes to the literature by using CE to explore *how* willingness to pay (WTP) differs for part-time, customization of work, extra breaks during the day (paid), and taking time off from work for medical treatments and/or education activities differ among people with type 2 diabetes (T2D), across socio-demographic groups, workability, and workplace characteristics. The WTP heterogeneity is analyzed using a latent class (LC) conditional logit model (Colombo et al., 2009). LC models have been used intensively in the CE literature to identify preference and WTP heterogeneity in energy economics (Lutzeyer et al., 2018), public service economics (Ladenburg et al., 2020), health economics (Sivey, 2012), environmental economics (Moreaux et al., 2023), and transport economics (Greene & Hensher, 2003). However, the LC model has not yet been used in labor economics and the demand for workplace accommodation among chronically ill workers. Our contribution is supported by the LC model showing substantial WTP heterogeneity across four classes and significant class membership probabilities as a function of socio-demographic variables, workability, and workplace characteristics. The results denote solid individual needs and demand for accommodating PWD in the workforce but also show income-related barriers concerning the individual ability to co-finance accommodation.

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## 2 | REVIEW OF THE LITERATURE

Despite the well-established labor economic research use of CE (Eriksson & Kristensen, 2014; Lagarde & Blaauw, 2009; Mandeville et al., 2014; Möser et al., 2019) and the magnitude of the reduced labor attachment indirect costs among sick/disabled people in general and PWD specifically, few studies have analyzed the WTP for employees' preferences and need for accommodation in the case of sickness. Nexø et al. (2017) and Madsen et al. (2019) estimate preferences for flexible working conditions among people with T2D or another chronic disease in Denmark. The two papers find WTPs for working part-time and customized work in the range of 36–47 EUR/month and 28–41 EUR/month, respectively. WTPs for extra breaks and being able to attend medical visits or educational activities during working hours were 9–11 EUR/month and 27–57 EUR/month, respectively. Accounting for the average salary of 4475 €/month in 2015 (Statistics Denmark, 2021), the range of the WTPs is thus 0.2–1.3 per cent of an average before-tax salary.

Kollerup and Ladenburg (2021) elicit WTP among breast cancer survivors for different accommodation attributes available to the cancer survivor over 6–18 months. The data were from 2010. The average monthly income before tax among women was approx. 3.504 € (Statistics Denmark, 2021). The study found that the respondents had, on average, a monthly WTP in the range (6 months accommodation period—18 months accommodation period) of 123–173 EUR for working 15 hours per week, 238–333 EUR for working 30 hours per week, and 173–251 EUR for psychological help. The study did not find, on average, a significant WTP for easier tasks. The estimated WTPs range from 0 to 9.5 per cent, relative to the average income before tax. The study also showed significant WTP differences as a function of age, ability to work, income, and employment sector. Kollerup and Ladenburg (2021) also find substantial unobserved variation in the WTP.

The three studies above provide valuable insights into the preferences for workplace accommodation in the case of illness. However, information about how preferences and WTP for accommodation vary across PWD is unexplored. The observed WTP variation in Kollerup and Ladenburg's (2021) study questions the one-size-fits-all accommodation approach for PWD. In the present paper, we exploit the data from Nexø et al. (2017) and Madsen et al. (2019) using an LC conditional logit model.

## 3 | DATA

### 3.1 | Population

The preferences and WTP data for the accommodation of job attributes among people with T2D are based on an internet survey. Individuals from the survey company Userneeds web-based panel participated in the survey. The survey company had 150,000 respondents in their panel. Userneeds is now a part of Norstat (see www.norstat.dk). The data collection process included individuals who consented to participate. The individuals were between 25 and 67 years old (both included), were employed (full- or part-time) at a workplace with at least one other employee, and residing in Denmark. The sample was formed by stratifying the respondents invited so that the invited respondents were representative concerning gender, age groups, and geography. The sample only includes respondents identifying themselves as having T2D.[1]

[1]Self-reported information: 'Has a physician or other healthcare professional ever told you that you had diabetes?' Response options included, yes, type 1 diabetes; yes, type 2 diabetes; no.

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In total, 720 respondents had T2D. Twenty-seven respondents did not answer the survey reliably[2] and were excluded from the sample. Furthermore, 38 respondents only answered a few of the choice sets. The final sample, therefore, amounted to 655 PWD. The data collection took place from March 24 to June 10, 2015. The characteristics of the respondents are in Table 1.

Our sample is conditional on having T2D and having a job. Therefore, there are no direct available descriptive statistics that we can compare the data to. The best comparable data is from Nexø et al. (2021). Nexø et al. (2021) include register data on people with T2D who are 35–64 years old but are not conditional on having a job.[3]

Conditional on being between 35 and 64 years, the share of males in Nexø et al. (2021) is 58 per cent. The similar age-conditional share in our data is 60 per cent. Compared with Nexø et al. (2021), we have a higher respondent share in the oldest age group, an equally lower respondent share in the youngest age group, and a substantially higher share of respondents with a longer education and a lower share with only a primary school education. Nexø et al. (2021) reported that 27 per cent are single, which is equal to our conditional estimates. Finally, Nexø et al. (2021) reported that 67 per cent have one or several comorbidities. Our conditional estimates are 37 per cent, thus substantially lower. An essential difference between the two samples is that our sample is conditional on having a job. In this sense, people with severe/many comorbidities might not be on the job market. The LC model will include socio-demographic, workability, workplace characteristics, and comorbidity variables.

## 3.2 | Survey instrument

The present paper uses CE (Adamowicz et al., 1994; Louviere & Woodworth, 1983) to estimate the WTPs for workplace accommodating job attributes. The CE methodology originates in marketing (Green & Srinivasan, 1978) and the demand for consumer good attributes. CE is intensively applied to elicit demand and WTP for non-market goods in different economic fields, such as environmental economics (Adamowicz et al., 1994), transport economics (Fifer et al., 2014), health economics (Rowen et al., 2022), public service economics (Amilon et al., 2022), and labor economics (Arora et al., 2022). The CE methodology builds on Lancaster's theory. In his theory, it is not a good per se but rather the bundle of the good's attributes that gives utility to the consumer (Lancaster, 1966; Rosen, 1974). In a CE, respondents are presented with alternatives (Bennett & Blamey, 2001) and asked to choose the preferred alternative. The alternatives represent the good or service in focus by key attributes. Varying levels of the attributes create different alternatives. The utility associated with the different attributes can be estimated through the trade-offs between attributes and attribute levels made by the respondent's choices.

The CE was developed according to good research practices identified by Johnson et al. (2013) and included a literature review and consultation with diabetes experts, occupational health, and health economics. Four individuals with T2D recruited from a diabetes clinic in Copenhagen evaluated the questionnaire in individual interviews. The questionnaire was pilot tested with 33 individuals with T2D from a web-based panel. The pilot test mainly led to

[2]The respondents reported that they 'did not understand the questionnaire', 'were bored', or 'wanted to be done with the questionnaire'.

[3]A more detailed comparison can be found in Appendix A.

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**TABLE 1** Socio-demographic of the sample.

| Respondent characteristic | Coding in model | Mean/ median | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Self-reported ability to work | Continuous | 8.29 | 1.62 | 0 | 10 |
| Gender | | | | | |
| Female | Gender reference category | 0.39 | 0.49 | 0 | 1 |
| Male | Dummy variable = 1 if male, else = 0 | 0.61 | 0.49 | 0 | 1 |
| Age | Continuous | 55.91 | 6.96 | 25 | 67 |
| Education | | | | | |
| Primary school | Educational reference category | 0.09 | 0.29 | 0 | 1 |
| High school | Educational reference category | 0.05 | 0.22 | 0 | 1 |
| Vocational education | Dummy variable = 1 if vocational education, else = 0 | 0.24 | 0.43 | 0 | 1 |
| Short-term education | Dummy variable = 1 if short-term education, else = 0 | 0.19 | 0.39 | 0 | 1 |
| Medium-term/ bachelor | Dummy variable =1 if medium-term/bachelor, else = 0 | 0.30 | 0.46 | 0 | 1 |
| Master/PhD | Dummy variable = 1 if master/ PhD, else = 0 | 0.13 | 0.34 | 0 | 1 |
| Income | | | | | |
| Income (interval coded)[a] | Continuous | 30,000–79,999 DKK (median) | - | 0 | 8 |
| Income missing[b] | Dummy variable = 1 if income missing, else = 0 | 0.13 | 0.33 | 0 | 1 |
| Civil status | | | | | |
| Not single | Civil status reference category | 0.73 | 0.44 | 0 | 1 |
| Single | Dummy variable = 1 if single, else = 0 | 0.27 | 0.44 | 0 | 1 |
| No. of employees in company (interval coded)[c] | Continuous | 11–100 employees (median) | - | 1 | 4 |
| Company type | | | | | |
| Private sector | Company type reference category | 0.56 | 0.50 | 0 | 1 |
| Public sector | Dummy variable = 1 if working in public sector, else = 0 | 0.44 | 0.50 | 0 | 1 |
| Type of position | | | | | |
| Self-employed/ leader | Position reference category | 0.28 | 0.45 | 0 | 1 |
| Employee | Dummy variable = 1 if employee, else = 0 | 0.65 | 0.48 | 0 | 1 |

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**TABLE 1** (Continued)

| Respondent characteristic | Coding in model | Mean/ median | Standard deviation | Min | Max |
|---|---|---|---|---|---|
| Flex job | Dummy variable = 1 if working in a flex job, else = 0 | 0.06 | 0.24 | 0 | 1 |
| Working hours | | | | | |
| Full-time | Working hours reference | 0.82 | 0.48 | 0 | 1 |
| Part-time | Dummy variable = 1 if working part-time, else = 0 | 0.18 | 0.48 | 0 | 1 |
| Year since diagnosis | Continuous | 8.50 | 6.15 | 1 | 43 |
| Comorbidities | | | | | |
| No comorbidities | Comorbidity reference | 0.64 | 0.48 | 0 | 1 |
| Comorbidity | Dummy variable = 1 if the respondent has at least one comorbidity, else = 0 | 0.36 | 0.48 | 0 | 1 |

[a]The monthly household income intervals are 0–4999 DKK, 5000–9999 DKK, 10,000–14,999 DKK, 15,000–19,999 DKK, 20,000–29,999 DKK, 30,000–49,999 DKK, 50,000–79,999 DKK, and >79,999 DKK, Missing income is coded as 0. Conditional on stating an income level, the mean monthly household income is between 30,000 and 79,999 DKK.
[b]Is coded as a dummy variable if income is missing.
[c]The company size intervals are 2–10, 11–30, 31–100, and >100 persons.

modifications, i.e. increases in pay reductions of the WTP scenarios as these were initially set too low. The final work accommodation attributes in the CE are in Table 2.

We used the Ngene software (ChoiceMetrics, 2012) to construct a level-balanced and orthogonal main effect fractional design. The balanced design ensured that the levels occurred within each attribute with equal frequency, yielding equally robust results for all levels. The orthogonal design resulted in uncorrelated parameter estimates independent of other attributes in the CE. Each respondent was given six choice sets. An example of a choice set is in Figure 1.

## 4 | ECONOMETRICS

The estimation of preferences for workplace accommodation is based on a Random Utility Model (RUM; McFadden, 1974). The RUM assumes that the researcher does not possess complete information concerning the individual decision-maker $n$. Individual preferences for workplace accommodation are, therefore, the function of a systematic component ($V$) and a random ($\varepsilon$) component:

$$U_{ni} = V_{ni} + \varepsilon_{ni}, \tag{1}$$

where $U_{ni}$ is the true but unobservable utility associated with accommodation alternative $i$, $V_{ni}$ is the deterministic part of the utility function, which in our case is a function of the accommodation attributes and the costs. The error component, $\varepsilon_{ni}$, is unknown and treated as random. A respondent selecting alternative $i$ over another alternative $j$ implies that the utility of alternative

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**TABLE 2** Attributes in the Choice Experiments.

| Attribute | Description | Coding |
|---|---|---|
| Part-time work | Access to part-time with a proportional reduction in salary | =1 if access to part-time, else = 0 |
| Customized work | Task and job description changed according to skills | =1 if access to customized work, else = 0 |
| Extra breaks with payment | It is possible to take extra breaks during the day without being deducted from the salary | =1 if access to extra breaks, else = 0 |
| Time off for medical appointments and education activities | Possible during working hours *without* a deduction from the salary | =1 if time off for medical appointment and education *without* a deduction in the salary, else = 0 |
| | Possible during working hours *with* a deduction from the salary | =1 if time off for medical appointment and education *with* a deduction in the salary, else = 0 |
| Cost | The monthly reduction in salary after tax (DKK[a]/month) | 50, 100, 200, and 500 DKK (linear) |

[a]The average exchange rates between $/DKK and €/DKK in 2015 were 683 DKK/100 $ and 746 DKK/100€, respectively.

| | Alternative A | Alternative B |
|---|---|---|
| Possibility to work part-time | Yes | No |
| Job accommodation | No | Yes |
| Extra breaks | No | Yes |
| Time off for medical appointment and education | Yes, with own payment | No |
| Reduction in salary after tax per month | 200 DKK | 500 DKK |
| Which do you prefer | O | O |

**FIGURE 1** Choice set example.

$i$ ($U_{ni}$) is larger than that of the other alternative ($U_{nj}$). The probability that respondent $n$ chooses alternative $i$ to $j$ from a choice set $C$ can be formulated as

$$P_{ni} = P\left(V_{ni} + \varepsilon_{ni} > V_{nj} + \varepsilon_{nj}\right) \forall j \in C, j \neq i\,. \tag{2}$$

Assuming that the error components are distributed independently and identically, following a type 1 extreme value distribution, the conditional logit (CL) model is derived, where the probability of individual $n$ choosing alternative $i$ is:

$$P_{ni} = \frac{exp(\mu V_{ni})}{\sum_{j \in C}\left(\mu V_{nj}\right)}\,, \tag{3}$$

where $\mu$ is the scale parameter commonly normalized to 1, as it cannot be identified separately from the vector of parameters. When $V_{ni} = \beta' X_{ni}$, Equation (3) can be written as

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$$P_{ni} = \frac{exp(\mu\beta' X_{ni})}{\sum_{j \in C} (\mu\beta' X_{nj})}, \tag{4}$$

where $X_{ni}$ is a vector of accommodation variables related to the $i$th alternative, including the costs and an alternative-specific constant. $\beta'$ is a vector of the associated and estimated parameters. The CL model has some limitations (Train, 2003), among them the assumption that all respondents have identical preferences. This can be a particular problem if we are interested in exploring how preferences/WTP for workplace accommodation might vary over specific groups in the working population and need information on how to target the needs of these groups. A solution to explore preference/WTP heterogeneity is to apply an LC approach (Bandeen-roche et al., 1997; Goodman, 1974) when analysing the stated preference data. LC approach assumes that a number of a priori unknown LCs exist in a population (Swait, 2007), each with a different preference structure. Every individual is assumed to belong to one of these classes. The mixed logit model and variance thereof is an alternative model to capture preference and WTP heterogeneity (Scarpa et al., 2008; Train, 2003). These models capture the unobserved preference/WTP heterogeneity by estimating a standard deviation in addition to the mean preference estimate for the chosen attributes. Preference/WTP heterogeneity insights are obtained by assuming different types of distribution. An advantage of the LC model in this relation is the direct estimates of preferences/WTP heterogeneity and the link through the membership function to the characteristics of the respondents, giving the LC model some appealing advantages for applied research (Colombo et al., 2009). Another advantage is the semiparametric specification of the LC models, which alleviates the analyst from possibly strong or unwarranted (mixing) distributional assumptions about individual preference/WTP heterogeneity (Greene & Hensher, 2003). Accordingly, this study applies the LC model to explore preference and WTP heterogeneity.

The probability that a respondent chooses accommodation alternative $i$ from a subset of alternatives $J$, conditional on belonging to a given class $s$, in the LC framework is:

$$P_{ni|s} = \frac{exp(\mu_s \beta_s' X_{ni})}{\sum_{j=1}^{J} exp(\mu_s \beta_s' X_{nj})}, \tag{5}$$

where $\mu_s$ is the class-specific scale parameter (normalized to 0) and $\beta_s'$ is a vector of the class-specific parameter estimates. Membership of a preference class $s$, can be estimated by including concomitant variables in a membership function, such as socio-demographic groups, workability, workplace characteristics, and comorbidities variables (Kamakura et al., 1994). The probability that respondent $n$ with covariates $z_n$ belongs to class $s$ out of $S$ classes is:

$$P_{ns} = \frac{exp(\theta_s z_n)}{\sum_{s=1}^{S} exp(\theta_s z_n)}, \tag{6}$$

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where $\theta_s$ is the class-specific vectors of estimable parameters associated with the individual. Applying the LC model requires determining the number of classes. The standard method is to sequentially estimate models with an increasing number of classes ($S = 1, 2, 3, 4...$) and to select the number of classes based on statistics, such as the Akaike Information Criteria (AIC) and the Bayesian Information Criteria (BIC; Swait, 2007).

From an economic and policy economic point of view, we are interested in obtaining estimates of the welfare gain the respondents receive from the different accommodation attributes, if any. The welfare gain is estimated by contrasting the gain in utility associated with an accommodation improvement with the disutility of higher costs. The marginal WTP for that accommodation attribute is the specific cost level that makes the respondent indifferent between being accommodated and paying those costs (Louviere et al., 2000). More specifically, conditional on the LC, the welfare related to a change in the accommodating workplace attributes can be calculated using the individual marginal WTP measure. Based on Equation (5), the WTP is calculated for each class separately. For each class, the class-specific $\beta_{s_attribute}$ of interest is divided with the class-specific $\beta_{s_Cost}$, representing the marginal utility of income:

$$WTP = -\frac{\beta_{s_{attribute}}}{\beta_{s_{cost}}}. \quad (7)$$

The LC models are estimated using the commands lclogit2 and lclogitml2 in STATA (Yoo, 2020). The lclogit2 command uses the expectation-maximization (Bhat, 1997) algorithm to estimate the model, whereas lclogitml2 uses gradient-based algorithms to fit LC models (Train, 2008). Confidence intervals on the WTP estimates are obtained using the delta method (Greene, 2012). All identified models have been tested for local maximum using different seed and starting values.

We have tested several LC models, considering different variables in the membership function. Without any variables in the membership function, models with more than four classes cannot converge, limiting the maximum number of classes to 4.

In the first group of models, the membership function included the socio-demographic variables representing the respondent and their workplace. The models also include a dummy variable representing respondents with at least one comorbidity and comorbidity-specific dummy variables representing respondents with depression, asthma, back pain, migraine, and chronic obstructive pulmonary disease (COPD) in the membership function.

In the second group of the LC model, the many comorbidity types were grouped into one dummy variable representing respondents with at least one comorbidity. The two groups of LC models thus differ regarding the ability to test if respondents with depression, asthma, back pain, migraine, or COPD have a significantly higher probability of being a member of a specific LC relative to people with other comorbidities or no comorbidities.

LC models with two and three LCs have been estimated in the first group of models. A model with four classes was not able to converge. In the second group of models, LC models with two, three, and four LCs have been estimated. In the model with four classes, the cost attribute was insignificant in three of the classes. An additional model, which constrained the costs parameter to be equal across the three classes, was estimated.

Similarly, the estimates of age and having at least one comorbidity have indistinguishable parameter estimates. In the final model specification, age and comorbidity are constrained to be the same across classes. The unconstrained model with four classes is in Appendix A. Table 3

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**TABLE 3** Goodness of fit criteria for two to five classes models across LC model groups 1 and 2.

| # Of classes | # Observations ($n$)[a] | # Estimated parameters (K) | LL (0) | LL (β) | $R_{adj}^2$ | AIC[b] | BIC[c] |
|---|---|---|---|---|---|---|---|
| Group 1 | | | | | | | |
| 2 | 7860 | 37 | −2724.1 | −2059.6 | 0.230 | 4193.3 | 4263.4 |
| 3 | 7860 | 67 | −2724.1 | −1987.7 | 0.246 | 4109.3 | 4236.3 |
| Group 2 | | | | | | | |
| 2 | 7860 | 32 | −2724.1 | −2059.6 | 0.232 | 4183.4 | 4244.1 |
| 3 | 7860 | 57 | −2724.1 | −2000.6 | 0.245 | 4125.3 | 4223.3 |
| 4 | 7860 | 82 | −2724.1 | −1943.4 | 0.256 | 4150.9 | 4206.3 |
| 4 constrained | 7860 | 76 | −2724.1 | **−1944.3** | **0.258** | **4040.5** | **4186.4** |

Abbreviations: AIC, Akaike Information Criteria; BIC, Bayesian Information Criteria.

[a]Number ($n$) of observations is equal to the number of alternatives. The number of choices is 7860/2 (two alternatives per choice set).

[b]$\text{AIC} = -2*\text{LL}(\beta) + 2\text{K}$.

[c]$\text{BIC} = -2*\text{LL}(\beta) + \text{K}*\log(n)$.

presents the BIC (Schwarz, 1978), AIC (Akaike, 1974), the log-likelihood, and $R_{adj}^2$ across the models in the two groups of LC models.

Following Table 3, a group 2 LC model with four classes seems to fit best across the $R^2_{adj}$, BIC, and AIC model fit measures. The model with cost restrictions across three classes performs as well as the model allowing the cost parameters to vary freely across classes. An LR test comparing the costs constrained and unconstrained LC models, 2*(−1943.4−(−)1944.3 = 1.8) with four degrees of freedom, is insignificant. Furthermore, in the constrained model, the costs significantly differ from zero in the three classes, with insignificant costs estimated in the unconstrained model. Accordingly, the analysis of variation in preferences and WTP for workplace accommodation takes origin in the model with four classes and the three class-constrained cost parameters.

## 5 | RESULTS

The following sections present the results from a conditional logit model followed by our LC model. Table 4 presents preference parameter estimates, WTPs, and class membership parameters. All estimates of WTP difference tests within and across classes are in Appendix B. The significance of all parameter estimates is evaluated against the 95 per cent confidence level.

### 5.1 | Clogit

The respondents have, on average, a WTP of 38 €/month and 28 €/month for having access to part-time work and customized work by adapting the work tasks or being re-educated to new job functions. The respondents have WTPs of 11 € for having extra breaks, 57 € for being able to

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**TABLE 4** Willingness to pay (WTP) estimates (€/month).

| | Conditional logit | | Class I | | Class II | | Class III | | Class IV | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** |
| Part-time work | 0.598*** [0.0377] | 37.8*** [3.0] | 2.263*** [0.242] | 392.6** [144.1] | 0.684*** [0.139] | 118.7* [58.47] | 0.713*** [0.143] | 11.7*** [2.532] | 0.124 [0.215] | 21.5 [35.40] |
| Customized work | 0.449*** [0.0374] | 28.4*** [2.8] | 0.771*** [0.211] | 133.7* [57.74] | 1.246*** [0.201] | 216.1* [97.87] | 0.513*** [0.143] | 8.4*** [2.513] | −0.00177 [0.184] | −0.3 [31.96] |
| Extra breaks with payment | 0.174*** [0.0378] | 11.0*** [2.4] | 0.697*** [0.185] | 120.8* [53.18] | 0.421*** [0.0919] | 73.0* [32.75] | 0.531*** [0.148] | 8.7*** [2.276] | −0.286* [0.145] | −49.6 [30.31] |
| Time off medical visits/ educational activities no own payment | 0.905*** [0.0530] | 57.3*** [4.4] | 0.0346 [0.267] | 6.0 [46.23] | 2.448*** [0.311] | 424.6* [183.3] | 1.542*** [0.209] | 25.3*** [3.800] | −0.295 [0.197] | −51.1 [36.10] |
| Time off medical visits/ educational activities own payment | 0.435*** [0.0525] | 27.3*** [3.6] | −0.00957 [0.234] | −1.7 [40.51] | 1.067*** [0.156] | 185.1* [79.80] | 0.427* [0.193] | 7.0* [3.233] | 0.229 [0.188] | 39.8 [35.31] |
| Asc1 | 0.181*** [0.0372] | 24.4*** [2.4] | 0.311 [0.183] | 53.9 [38.75] | 0.481*** [0.128] | 83.5 [45.05] | −0.234 [0.145] | −3.8 [2.458] | 0.637*** [0.134] | 110.5* [47.54] |
| Costs | −0.0159*** [0.000909] | | −0.00576** [0.00211] | | −0.00576** [0.00211] | | −0.0610*** [0.00807] | | −0.00576** [0.00211] | |
| **Predicted class shares** | | | **0.149** | | **0.391** | | **0.316** | | **0.144** | |
| Membership function | | | Class I | | Class II | | Class III | | Class IV | |
| Male[a] | | | 1.389* [0.690] | | 0.204 [0.436] | | −0.178 [0.445] | | - | |
| Age | | | 0.0532* [0.0238] | | 0.0532* [0.0238] | | 0.0532* [0.0238] | | - | |
| Vocational education[b] | | | 1.581 [1.265] | | 0.465 [0.576] | | 0.340 [0.615] | | - | |
| Short-term education[b] | | | 0.875 [1.283] | | 0.398 [0.621] | | 0.309 [0.659] | | - | |
| Medium-term education[b] | | | 2.589* [1.240] | | 0.297 [0.588] | | 0.741 [0.606] | | - | |
| Master/PhD[b] | | | 0.473 [1.262] | | −0.322 [0.634] | | −0.513 [0.699] | | - | |
| Income (interval coded) | | | 1.526** [0.489] | | 0.676** [0.224] | | 0.494* [0.238] | | - | |
| Income missing[c] | | | 8.473** [3.122] | | 4.733** [1.538] | | 3.919* [1.619] | | - | |
| Single[d] | | | 1.583* [0.794] | | 0.822 [0.469] | | 1.235** [0.479] | | | |

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**TABLE 4** (Continued)

| | Conditional logit | | Class I | | Class II | | Class III | | Class IV | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** |
| Self-reported ability to work 7, 8, 9, or 10[e] | | | −0.407* [0.179] | | 0.0147 [0.122] | | 0.143 [0.132] | | - | |
| Working in public sector[f] | | | −0.0754 [0.557] | | −0.0627 [0.397] | | −0.657 [0.423] | | | |
| No. of employees in company | | | −0.130 [0.251] | | −0.107 [0.179] | | 0.103 [0.195] | | - | |
| Working part-time[g] | | | 2.156** [0.812] | | −0.694 [0.673] | | −0.0935 [0.630] | | - | |
| Flex job[h] | | | 1.963 [1.127] | | 0.897 [0.927] | | 0.0694 [1.323] | | - | |
| Employee[h] | | | 1.402* [0.630] | | 1.661*** [0.446] | | 2.129*** [0.475] | | - | |
| Year since diagnosis | | | −0.110 [0.0588] | | 0.00511 [0.0300] | | −0.00457 [0.0295] | | - | |
| Comorbidity[i] | | | 0.556 [0.400] | | 0.556 [0.400] | | 0.556 [0.400] | | - | |
| Constant | | | −12.59** [4.006] | | −7.501*** [2.228] | | −8.472*** [2.387] | | - | |
| *Nresp* | 655 | | 655 | | | | | | | |
| *NChoices* | 3930 | | 3930 | | | | | | | |
| LL (0) | −2724.07 | | −2724.07 | | | | | | | |
| LL (β) | −2169.55 | | −1944.26 | | | | | | | |
| McFadden R2 | 0.204 | | 0.287 | | | | | | | |

*Note*: Standard errors in brackets for both the estimated preference, WTPs, and class membership parameters. Reference categories for superscript letters: (a) female, (b) primary school or high school, (c) respondents who stated their income, (d) respondents living with a partner, (e) self-reported ability to work less than seven, (f) works in the private sector, (g) working full-time, (h) manager or higher management, and (i) no comorbidities.
*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

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do medical visits/educational activities during working hours without a deduction in the salary, and 27 € with a deduction in the salary.

## 5.2 | Preferences structure and WTP

The estimated preference parameters and the associated WTPs of the four classes in Table 4 clearly illustrate the heterogeneity in the preferences and WTPs for workplace attributes and costs.

Class I is characterized by significant positive preferences for working part-time, being accommodated, and for extra breaks. The preference parameter estimates for medical visits/educational activities during working hours with or without a deduction in the salary are numerically small and insignificant. The ASC_1 estimate is positive, though insignificant. The cost parameter is negative and significant. The respondents have significant WTPs of 393 €, 134 €, and 121 € for working part-time, being accommodated, and having extra breaks, respectively. The WTP for medical visits/educational activities during working hours without or with own payment is 6 € and −2 €, though insignificant. The WTP for working part-time is significantly higher than the WTP for the other four attributes. The WTP for accommodation is significantly higher than for medical visits/education activities during working hours with own payment. The other WTP attribute differences are not significantly different. Class I constitutes 14.9 per cent of the sample.

Class II represents 39.1 per cent of the sample. The respondents have stated significant and positive preferences for all accommodating attributes. The ASC_1 estimate is positive and significant. The respondents have significant WTPs of 119 €, 216 €, 73 €, 425 €, and 185 € for working part-time, being accommodated, extra breaks, and medical visits/educational activities during working hours without or with own payment, respectively. The WTP for medical visits/educational activities during working hours without payment is significantly higher than the WTP for the other attributes. The WTP for accommodation and doing medical visits/educational activities during working hours with own payment is significantly higher than the WTP for extra breaks. The other WTP attribute differences are not significantly different.

In Class III, the respondents have significant preferences for all attributes. The ASC_1 estimate is negative, though insignificant. In terms of WTP, the respondents have WTPs of 12 €, 8 €, 9 €, 25 €, and 7 € for working part-time, being accommodated, breaks, and medical visits/educational activities during working hours without or with own payment, respectively. The WTP for doing medical visits/educational activities during working hours without own payment is significantly higher than the WTP for the other attributes. Across the other attributes, the WTP differences are not significant. Class III represents 31.6 per cent of the sample.

The final class, Class IV, is characterized by significant cost and extra break parameters. The other attribute parameters are all insignificant. The negative extra break parameter is surprising. However, the WTP estimate for extra breaks is not significant. The positive and highly significant estimate for ASC_1 indicates that the respondents might have had a tendency to choose the first alternative (alternative 1) in the choice sets. Accordingly, the respondents' choices seem to be governed by a high degree of attribute indifference/non-attendance (Hess et al., 2013). Although some attribute WTP differences are significantly different, they make less sense, given that the individual estimates are insignificant. Class IV represents 14.4 per cent of the sample.

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A final comparison of WTPs is between the classes. In the following, we will report the significant WTP class differences. Starting with the WTPs for working part-time, the respondents in Class I have higher WTPs of 274 €, 381 €, and 371 €, compared with the WTPs for part-time in Classes II, III, and IV, respectively.

Regarding class differences in WTP for being accommodated, WTP comparisons reveal that respondents in Class I have 125 € higher WTP than those in Class III. Likewise, the respondents in Class II have 208 € and 216 € higher WTPs than those WTPs in Classes III and IV.

The WTPs for extra breaks also differ significantly across the classes. Respondents in Class I have WTPs that are 112 € and 171 € higher than those in Classes II and III. Furthermore, respondents in Class II have a 64 € and 123 € higher WTP than Classes III and IV respondents.

Concerning the WTP for doing medical visits/educational activities during working hours without own payment, Class II respondents have higher WTPs than the other classes. The differences in WTP are 419 €, 399 €, and 476 €, compared with Classes I, III, and IV. In addition, the respondents in Class III have a 76 € higher WTP than Class IV.

The final across-class attribute WTP comparison concerns doing medical visits/educational activities during working hours with own payment. The respondents in Class II stated higher WTPs for this attribute than those in Classes I and III. The WTP differences are 187 € and 178 €, respectively.

To sum up, the WTP structures and strengths across the four classes vary substantially. Classes I and II have generally stated higher WTPs when compared with Classes III and IV. However, where Class I has higher WTPs for working part-time, being accommodated, and for breaks, Class II has notably higher WTPs for doing medical visits/educational activities during working hours with or without own payment. Class III has stated moderate WTPs for all attributes. Class IV has no significant WTPs.

## 5.3 | Class membership

The differences in the WTP structures denote substantial heterogeneity in preferences among the respondents. The LC model's membership function presents the significant relationships between respondent socio-demographics and class membership. In Table 4, the reference category in the class member function is Class IV (noted by -). Using *t* tests, we also estimate the difference in class membership across Classes I–III. The test statistics are in Appendix C. The variables male, the educational variables, income_miss, single, employee, public, part-time, flex job, and comorbidity are dummy variables. Their reference levels are female, primary school/high school, stated income level, non-single, leader/self-employed, private company, normal employment (part-time and flex job), and no comorbidities, respectively (see also Table 1).

Starting with the socio-demographics of the respondents, male respondents have a higher probability of being in Class I relative to Classes III and IV. Older respondents are more likely to be in Classes I–III than Class IV. Having a vocational education, a short-term education or a master's degree/PhD relative to respondents with a primary school or high school education is not significantly related to class membership. However, respondents with a medium-term/bachelor's degree are more likely to be Class I members than Class IV. Interestingly, the income level is significantly related to the probability of class membership. Respondents with higher income levels are more likely to be in Classes I–III relative to Class IV and be in Class I relative to Classes III and IV. The respondents who did not wish to reveal their income are more likely

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to be in Classes I–III than Class IV. Single respondents are more likely to be in Class I than Class IV.

Higher workability levels are related to a lower probability of being in Class I than Classes II–IV. Or stated differently, respondents with lower workability are likelier to be in Class I than the other classes. The number of employees in the respondent's company is not significantly related to class membership. Respondents working in the public relative to the private sector have a lower probability of being in Class III than Class II. Respondents working part-time are likelier to be in Class I than Classes II–IV. Respondents working as regular employees (relative to respondents with leader responsibility or being self-employed) have a higher probability of being in Classes I–III than Class IV. A flex job (relative to respondents with leader responsibility or being self-employed) does not significantly influence class membership. The longer the duration since the respondents were diagnosed with diabetes, the lower is the probability of being a member of Class I relative to Classes II and III. Whether the respondent has at least one comorbidity or not does not influence class membership significantly.

## 5.4 | Class WTPs and class membership variable

Selected significant respondent characteristics are elaborated on relative to class WTP differences.

### 5.4.1 | Age

The WTP of older respondents is generally higher than younger respondents' WTP through the membership function. This is so even though we control for the ability to work, years since diabetes diagnosis, and any comorbidities. These results suggest that with age, the demand for workplace accommodation increases. Unfortunately, we do not have data on preferences among people without diabetes to test this. However, it calls for further research.

### 5.4.2 | Income

Higher-income respondents have a higher probability of being in Classes I–III relative to IV and with very high WTPs in Classes I and II. The explanation is most likely due to income effects. Higher-income groups have a higher ability to pay and choose more costly alternatives. A significant chi-test reveals that lower-income groups more frequently choose low-cost alternatives, whereas high-income groups choose high-cost alternatives more frequently (see Appendix D). Kollerup and Ladenburg (2021) also found income effects in WTP for accommodation among cancer survivors. People with an income above the sample's median had a significantly higher WTP for psychological help. In contrast, the same people had a significantly lower WTP for working 15 hours per week relative to full-time. The WTP differences between the different income groups also indicated significant social inequality across income groups. We will address this in the discussion.

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### 5.4.3 | The self-reported ability to work

The results of the membership function denote that respondents with low self-reported workability have a higher probability of being in Class I relative to the other classes. Through the membership function, respondents with low workability also have a higher probability of stating a higher WTP for being able to work part-time, being accommodated, and getting breaks. This result makes intuitively good sense, as these people might need fewer working hours, different job types, and more breaks than respondents with higher workability levels. These findings correspond with Kollerup and Ladenburg (2021), showing that breast cancer survivors with low self-reported workability have significantly higher WTP for working 15 hours per week in a period from 6 to 18 months after cancer treatment compared with breast cancer survivors who report high workability.

### 5.4.4 | Employee versus manager?

Employees are significantly more likely to be in Classes I–III than managers or company owners. Interestingly, these results suggest that employees have more defined and precise preferences and WTPs for workplace accommodation than leaders and company owners with diabetes. There might be several explanations for these findings. A straightforward explanation is that managers/company owners do not have similar needs and demands for workplace accommodation as employees. Another explanation could be that, given their leadership/ownership position, they might have found it particularly difficult to choose between the alternatives.

### 5.4.5 | Part-time and flex job

Respondents who currently work part-time have a significantly higher probability of being in Class I than Classes II–IV. The high part-time WTP in Class I might be governed by the fact that the respondents already work part-time and therefore have a high WTP for that attribute, accommodation, and extra breaks. According to the model, they are willing to trade off medical/education visits during work hours with/without a deduction in salary to obtain part-time work, accommodation, and breaks. People with a flex job have no significant higher/lower probability of being in one of the three classes. This makes good sense, given that people holding a flex job, which is different from 'just' working part-time, might not see part-time as yielding markedly higher utility than people who presently do not work part-time.

### 5.4.6 | Years since diagnosis

Finally, the variable years since diagnosis relates to a lower probability of being in Class I relative to Classes II and III. Classes II and III are characterized by all accommodation WTP attributes being significant, though with substantial differences in WTPs between Classes II and III. Accordingly, with increasing years since diagnosis, the demand for all types of accommodation increases via the higher membership probability for Classes II and III.

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## 6 | DISCUSSION

The results show substantial WTP differences between socio-demographic groups, workability, and workplace characteristics. We discuss these results in the sections below.

The estimated income effects denote a social inequality in demand and WTP for different job accommodation types. Unless accommodation is provided for free or at low costs, some people with low-income levels might not be able to afford accommodation. This is even though low-income individuals in the labor market with diabetes might be more vulnerable and have higher workplace accommodation needs. Several studies across low- and high-income countries (Abebe et al., 2014; Halling & Ladenburg, 2019; Kirkman et al., 2015; Nonogaki et al., 2019) found that PWD and low-income have a lower medicine/treatment adherence than those with a higher income.

Another potential explanation for the income WTP differences for different types of job accommodation might relate to citizens' expectations in a universalistic welfare state such as Denmark, characterized by universal access to health care, schooling, and education as well as access to support measures for persons affected by illness or disability. Hence, many citizens may expect some public provision of programs or measures to support persons with long-term ill health or disabilities to obtain or keep a job. The flex job scheme, where employers receive a salary reimbursement for all employees granted a flex job, is one such program. Persons holding a flex job constituted 2.2 per cent of the labor force in 2015, increasing to 3.0 per cent in 2021.[4] Hence, this publicly funded employment program supports a substantial amount of the working population, and its existence is well-known among working-age people in Denmark.

Moreover, other public measures to support people with long-term ill health or disability to obtain or keep a job also exist. Hence, people with disabilities holding a job may apply for public funding for some types of aid in the workplace, e.g. unique IT solutions, chairs, tables, and a personal assistant to help them carry out specific practical work tasks.[5] Although publicly funded aid and personal assistants for disabled people are far less common in Danish workplaces than employees holding a flex job, the expectation that the welfare state is to some extent ready to support people affected by ill health to keep their job is likely to be widespread in the Danish population—including among people with low incomes.

A third discussion point is the differences in preferences and WTP across the four classes. The membership variables shed some light on the source of preferences heterogeneity. However, educational background is not a strong predictor of class. The lack of variation in education is surprising. Golden (2001) and Zapf and Weber (2017) thus find higher work time flexibility among higher educated people. In this vein, we could expect that respondents with shorter educational levels might have stronger preferences and higher WTPs for some of the more flexible attributes, such as breaks and being able to visit the doctor during work hours. However, the lower ability to pay for such accommodation or

[4]Data from the Danish Agency for Labour Market and Recruitment, see https://jobindsats.dk/databank/ydelser/fleksjob/personer-forlob-og-udgifter/antal-personer-og-fuldtidspersoner/.

[5]Although the schemes have existed for many years, data on the number of persons benefitting from aid in the workplace or having a personal assistant are only publicly available from 2018 and onwards. In 2018, 9486 persons had a personal assistant and 12,991 benefited from aid in the work place for the disabled, see https://jobindsats.dk/databank/indsatser/mentor-og-ordninger-pa-beskaeftigelsesomradet/kompenserende-ordninger.

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expectations that the public will provide some kind of accommodation in case the need becomes highly pressing may dampen the expression of preferences and WTP among low educated.

## 7 | CONCLUSION

This study utilizes stated preferences among 665 PWDs and in a job. The heterogeneity in WTP for working part-time, customized work, additional breaks during work hours, and the opportunity to do medical visits/educational activities at own expense or paid by the employer are estimated using a LC conditional logit model. The results point toward four distinct preference classes. In Class I, 14.9 per cent of the sample, the respondents have high and significant WTPs for working part-time, accommodation, and extra breaks. The WTP for part-time is significantly higher than in the other classes. In Class II, with a share of 39.1 per cent of the sample, the respondents state significant and high WTPs for all attributes. The WTP for medical visits/educational activities without payment is significantly higher than the other classes. Class III includes 31.6 per cent of the sample. The respondents have significant and positive WTPs for all work accommodating attributes in the class. Although the WTP for medical visits/education activities without payment is the highest within the class, the level of WTP is significantly lower for many of the accommodation attributes compared with Classes I and II. Class IV represents 14.4 per cent of the sample. In this class, none of the workplace accommodation WTPs are significant. The results of the membership function in the LC model denote significant differences across the characteristics of the respondents. Gender, age, education, income, being single, workability, working in the public sector, not being a leader/self-employed, working part-time, and years since diagnosis all significantly influence class membership and WTP heterogeneity. The number of employees in the respondent's company, having a flex job, and having at least one comorbidity do not influence class membership significantly.

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### CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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## APPENDIX A: UNSTRAINED LC MODEL WITH FOUR CLASSES

| | Class I | | Class II | | Class III | | Class IV | |
|---|---|---|---|---|---|---|---|---|
| | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** |
| Part-time work | 2.277*** [0.245] | 378.9 [289.3] | 0.638*** [0.170] | 142.4 [122.5] | 0.689*** [0.151] | 11.24*** [2.761] | 0.268 [0.325] | 32.98 [29.83] |
| Customized work | 0.798*** [0.214] | 132.8 [109.6] | 1.180*** [0.248] | 263.3 [213.4] | 0.528*** [0.155] | 8.602** [2.895] | 0.0992 [0.301] | 12.18 [33.28] |
| Extra breaks with payment | 0.687*** [0.191] | 114.4 [86.70] | 0.421*** [0.0933] | 93.92 [75.47] | 0.516*** [0.151] | 8.414*** [2.444] | −0.270 [0.145] | −33.18 [26.52] |
| Time off medical visits/ educational activities no own payment | 0.105 [0.311] | 17.51 [56.90] | 2.436*** [0.324] | 543.5 [430.5] | 1.563*** [0.220] | 25.48*** [4.194] | −0.380 [0.269] | −46.70$^{+}$ [27.73] |
| Time off medical visits/ educational activities own payment | −0.00248 [0.246] | −0.413 [40.79] | 1.063*** [0.163] | 237.2 [187.7] | 0.425* [0.197] | 6.920* [3.365] | 0.232 [0.178] | 28.52 [25.34] |
| Asc1 | 0.275 [0.198] | 45.70 [46.50] | 0.486*** [0.131] | 108.5 [97.08] | −0.200 [0.162] | −3.261 [2.777] | 0.628*** [0.130] | 77.14$^{+}$ [46.25] |
| Costs | −0.00601 [0.00468] | | −0.00448 [0.00329] | | −0.0614*** [0.00887] | | −0.00814 [0.00447] | |
| **Predicted class shares** | **0.149** | | **0.391** | | **0.316** | | **0.144** | |
| Membership function | Class I | | Class II | | Class III | | Class IV | |
| Male[a] | 1.264 [0.769] | | 0.114 [0.532] | | −0.280 [0.528] | | - | |
| Age | 0.0755* [0.0374] | | 0.0474 [0.0254] | | 0.0560* [0.0278] | | - | |
| Vocational education[b] | 2.163 [1.754] | | 0.571 [0.622] | | 0.476 [0.697] | | - | |
| Short-term education[b] | 1.104 [1.460] | | 0.301 [0.694] | | 0.242 [0.701] | | - | |
| Medium-term education | 2.997* [1.490] | | 0.180 [0.664] | | 0.698 [0.631] | | - | |
| Master/PhD | 0.998 [1.651] | | −0.223 [0.674] | | −0.371 [0.778] | | - | |
| Income (interval coded) | 1.692** [0.598] | | 0.737** [0.266] | | 0.556 [0.297] | | - | |
| Income missing[c] | 9.553* [3.843] | | 5.082** [1.709] | | 4.289* [1.891] | | - | |
| Single[d] | 1.858* [0.943] | | 0.896 [0.501] | | 1.307* [0.524] | | | |
| Self-reported ability to work 7, 8, 9, or 10[e] | −0.434* [0.187] | | 0.0215 [0.122] | | 0.134 [0.134] | | - | |
| Working in public sector[f] | −0.178 [0.273] | | −0.127 [0.183] | | 0.0818 [0.207] | | | |
| No. of employees in company | −0.0703 [0.590] | | 0.0368 [0.451] | | −0.574 [0.473] | | - | |
| Working part-time[g] | 2.045* [0.878] | | −0.905 [0.833] | | −0.257 [0.742] | | - | |

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| | Class I | | Class II | | Class III | | Class IV | |
|---|---|---|---|---|---|---|---|---|
| | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** | **Preference** | **WTP** |
| Flex job[h] | 1.496* [0.662] | | 1.683*** [0.458] | | 2.177*** [0.489] | | - | |
| Employee[h] | 1.907 [1.208] | | 0.720 [0.960] | | −0.135 [1.417] | | - | |
| Year since diagnosis | −0.122 [0.0621] | | 0.0112 [0.0339] | | 0.000875 [0.0317] | | - | |
| Comorbidity[i] | 0.766 [0.791] | | 0.783 [0.506] | | 0.557 [0.506] | | - | |
| Constant | −15.08** [5.263] | | −7.692** [2.389] | | −8.966** [2.758] | | - | |
| *Nresp* | 655 | | | | | | | |
| *NChoices* | 3930 | | | | | | | |
| LL (0) | −2724.07 | | | | | | | |
| LL ($\beta$) | −1943.4 | | | | | | | |
| McFadden R2 | 0.287 | | | | | | | |

*Note*: Standard errors in brackets for both the estimated preference, WTPs, and class membership parameters. Notes reference categories for superscript letters: (a) female, (b) primary school or high school, (c) respondents who stated their income, (d) respondents living with a partner, (e) self-reported ability to work less than seven, (f) works in the private sector, (g) working full-time, (h) manager or higher management, and (i) no comorbidities.

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

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## APPENDIX B: WITHIN- AND BETWEEN-CLASS WTP DIFFERENCE ESTIMATES

### Within-class WTP comparisons

| | Coefficient | Std. err. | $z$ | $P > z$ |
|---|---|---|---|---|
| **Class I** | | | | |
| WTP part-time—WTP accommodation | 258.9 | 102.4 | 2.53 | 0.011 |
| WTP part-time—WTP breaks | 271.8 | 103.3 | 2.63 | 0.009 |
| WTP part-time—WTP medical visits/educational activities_nopay | 386.6 | 151.6 | 2.55 | 0.011 |
| WTP part-time—WTP medical visits/educational activities_pay | 394.3 | 144.7 | 2.72 | 0.006 |
| WTP accommodation—WTP breaks | 12.9 | 45.2 | 0.28 | 0.776 |
| WTP accommodation—WTP medical visits/educational activities_nopay | 127.7 | 75.7 | 1.69 | 0.092 |
| WTP accommodation—WTP medical visits/educational activities_pay | 135.3 | 69.1 | 1.96 | 0.05 |
| WTP breaks—WTP medical visits/educational activities_nopay | 114.8 | 72.0 | 1.6 | 0.111 |
| WTP breaks—WTP medical visits/educational activities_pay | 122.5 | 64.4 | 1.9 | 0.057 |
| WTP medical visits/educational activities_nopay—WTP medical visits/educational activities_pay | 7.7 | 53.5 | 0.14 | 0.886 |
| **Class II** | | | | |
| WTP part-time—WTP accommodation | −97.4 | 47.7 | −2.04 | 0.041 |
| WTP part-time—WTP breaks | 45.7 | 35.1 | 1.3 | 0.193 |
| WTP part-time—WTP medical visits/educational activitie_nopay | −305.9 | 131.0 | −2.34 | 0.019 |
| WTP part-time—WTP medical visits/educational activities_pay | −66.4 | 38.9 | −1.71 | 0.088 |
| WTP accommodation—WTP breaks | 143.1 | 72.8 | 1.96 | 0.049 |
| WTP accommodation—WTP medical visits/educational activities_nopay | −208.5 | 90.4 | −2.31 | 0.021 |
| WTP accommodation—WTP medical visits/educational activiti_pay | 31.0 | 32.7 | 0.95 | 0.343 |
| WTP breaks—WTP medical visits/educational activites_nopay | −351.6 | 157.0 | −2.24 | 0.025 |
| WTP breaks—WTP medical visits/educational activities_pay | −112.1 | 57.0 | −1.97 | 0.049 |
| WTP medical visits/educational activities_nopay—WTP medical visits/educational activities_pay | 239.5 | 107.3 | 2.23 | 0.026 |
| **Class III** | | | | |
| WTP part-time—WTP accommodation | 3.3 | 3.6 | 0.92 | 0.356 |
| WTP part-time—WTP breaks | 3.0 | 2.9 | 1.02 | 0.307 |
| WTP part-time—WTP medical visits/educational activities_nopay | −13.6 | 3.9 | −3.47 | 0.001 |
| WTP part-time—WTP medical visits/educational activities_pay | 4.7 | 4.2 | 1.11 | 0.268 |
| WTP accommodation—WTP breaks | −0.3 | 3.3 | −0.09 | 0.928 |
| WTP accommodation—WTP medical visits/educational activities_nopay | −16.9 | 3.7 | −4.55 | <0.001 |
| WTP accommodation—WTP medical visits/educational activities_pay | 1.4 | 3.6 | 0.39 | 0.696 |

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| | Coefficient | Std. err. | z | P > z |
|---|---|---|---|---|
| WTP breaks—WTP medical visits/educational activitie_nopay | −16.6 | 4.0 | −4.19 | <0.001 |
| WTP breaks—WTP medical visits/educational activities_pay | 1.7 | 3.7 | 0.46 | 0.648 |
| WTP medical visits/educational activities_nopay—WTP medical visits/educational activities_pay | 18.3 | 3.1 | 5.86 | <0.001 |
| **Class IV** | | | | |
| WTP part-time—WTP accommodation | 21.8 | 31.2 | 0.7 | 0.486 |
| WTP part-time—WTP breaks | 71.1 | 35.2 | 2.02 | 0.043 |
| WTP part-time—WTP medical visits/educational activities_nopay | 72.6 | 53.3 | 1.36 | 0.173 |
| WTP part-time—WTP medical visity/educational visits_pay | −18.3 | 53.7 | −0.34 | 0.733 |
| WTP accommodation—WTP breaks | 49.3 | 32.2 | 1.53 | 0.126 |
| WTP accommodation—WTP medical/educational visits_nopay | 50.8 | 53.2 | 0.96 | 0.339 |
| WTP accommodation—WTP medical visits/educational activities_pay | −40.1 | 51.7 | −0.78 | 0.437 |
| WTP breaks—WTP medical visits/educational activities_nopay | 1.5 | 42.8 | 0.03 | 0.973 |
| WTP breaks—WTP medical visits/educational a_pay | −89.4 | 52.8 | −1.7 | 0.09 |
| WTP medical visits/educational activities_nopay—WTP medical visits/educational activities_pay | −90.9 | 45.5 | −2 | 0.045 |

**Between class WTP comparisons**

(CI = Class I, CII = Class II, CIII = Class III, and CIV = Class IV)

| | Coefficient | Std. err. | z | P > z |
|---|---|---|---|---|
| WTP part-time CI —WTP part-time CII | 273.9 | 95.8 | 2.86 | 0.004 |
| WTP part-time CI—WTP part-time CIII | 380.9 | 143.2 | 2.66 | 0.008 |
| WTP part-time CI—WTP part-time CIV | 371.2 | 151.7 | 2.45 | 0.014 |
| WTP part-time CII—WTP part-time CIII | 107.0 | 57.6 | 1.86 | 0.063 |
| WTP part-time CII—WTP part-time CIV | 97.2 | 75.2 | 1.29 | 0.196 |
| WTP part-time CIII—WTP part-time CIV | −9.8 | 36.1 | −0.27 | 0.787 |
| WTP accommodation CI—WTP accommodation CII | −82.4 | 70.9 | −1.16 | 0.245 |
| WTP accommodation CI—WTP accommodation CIII | 125.3 | 57.3 | 2.19 | 0.029 |
| WTP accommodation CI—WTP accommodation CIV | 134.0 | 68.6 | 1.95 | 0.051 |
| WTP accommodation CII—WTP accommodation CIII | 207.7 | 97.2 | 2.14 | 0.033 |
| WTP accommodation CII—WTP accommodation CIV | 216.4 | 110.4 | 1.96 | 0.05 |
| WTP accommodation CIII—WTP accommodation CIV | 8.7 | 32.6 | 0.27 | 0.789 |
| WTP break CI—WTP break CII | 47.8 | 39.5 | 1.21 | 0.226 |
| WTP break CI—WTP break CIII | 112.1 | 52.9 | 2.12 | 0.034 |

(Continues)

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| | Coefficient | Std. err. | z | P > z |
|---|---|---|---|---|
| WTP break CI—WTP break CIV | 170.5 | 72.1 | 2.36 | 0.018 |
| WTP break CII—WTP break CIII | 64.3 | 32.6 | 1.97 | 0.049 |
| WTP break CII—WTP break CIV | 122.7 | 54.8 | 2.24 | 0.025 |
| WTP break CIII—WTP break CIV | 58.4 | 30.8 | 1.89 | 0.058 |
| WTP medical visits/educational activities_nopay CI—WTP medical visits/educational activities_nopay CII | −418.6 | 188.4 | −2.22 | 0.026 |
| WTP medical visits/educational acti_nopay CI—WTP medical/educational visits_nopay CIII | −19.3 | 46.5 | −0.42 | 0.678 |
| WTP medical visits/educational activities_nopay CI—WTP medical visi/educational visits_nopay CIV | 57.1 | 60.7 | 0.94 | 0.347 |
| WTP medical visits/educational activities_nopay CII—WTP medical visits/educational activities_nopay CIII | 399.3 | 181.9 | 2.2 | 0.028 |
| WTP medical visits/educational activities_nopay CII—WTP medical visits/educational activities_nopay CIV | 475.7 | 197.2 | 2.41 | 0.016 |
| WTP medical visits/educational activities_nopay CIII—WTP medical /educational visits_nopay CIV | 76.4 | 36.6 | 2.09 | 0.037 |
| WTP medical visits/educational visits_pay CI—WTP medical/educational visits_pay CII | −186.8 | 84.8 | −2.2 | 0.028 |
| WTP medical visits/educational activities_pay CI—WTP medical visits/educational activities_pay CIII | −8.7 | 40.7 | −0.21 | 0.831 |
| WTP medical visits/educational activities_pay CI—WTP medical visits/educational activities_pay CIV | −41.5 | 54.1 | −0.77 | 0.443 |
| WTP medical visits/educational activities_pay CII—WTP medical visits/educational activities_pay CIII | 178.1 | 79.4 | 2.24 | 0.025 |
| WTP medical visits/educational visits_pay CII—WTP medical/educational visits_pay CIV | 145.3 | 74.9 | 1.94 | 0.052 |
| WTP medical visits/educational activities_pay CIII—WTP medical visits/educational activities_pay CIV | −32.8 | 35.7 | −0.92 | 0.359 |

## APPENDIX C: BETWEEN-CLASS MEMBERSHIP FUNCTION DIFFERENCE ESTIMATES

(CI = Class I, CII = Class II, CIII = Class III, and CIV = Class IV)

| Variable comparison | Coefficient | Std. err. | z | P > z |
|---|---|---|---|---|
| CI male—CII male | 1.186 | 0.635 | 1.87 | 0.062 |
| CI male—CIII male | 1.567 | 0.634 | 2.47 | 0.013 |
| CII male—CIII male | 0.381 | 0.283 | 1.35 | 0.179 |
| CI age—CII age | 0.000 | 0.000 | 0 | 0 |
| CI age—CIII age | 0.000 | 0.000 | 0 | 0 |

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| Variable comparison | Coefficient | Std. err. | *z* | *P* > *z* |
|---|---|---|---|---|
| CII age—CIII age | 0.000 | 0.000 | 0 | 0 |
| CI vocational—CII vocational | 1.115 | 1.126 | 0.99 | 0.322 |
| CI vocational—CIII vocational | 1.241 | 1.155 | 1.07 | 0.283 |
| CII vocational—CIII vocational | 0.126 | 0.426 | 0.3 | 0.768 |
| CI short-term—CII short-term | 0.477 | 1.159 | 0.41 | 0.681 |
| CI short-term—CIII short-term | 0.566 | 1.186 | 0.48 | 0.633 |
| CII short-term—CIII short-term | 0.089 | 0.449 | 0.2 | 0.843 |
| CI medium-term—CII medium-term | 2.293 | 1.177 | 1.95 | 0.051 |
| CI medium-term—CIII medium-term | 1.848 | 1.189 | 1.55 | 0.12 |
| CII medium-term—CIII medium-term | −0.445 | 0.446 | −1 | 0.318 |
| CI master—CII master | 0.794 | 1.137 | 0.7 | 0.485 |
| CI master—CIII master | 0.986 | 1.158 | 0.85 | 0.395 |
| CII master—CIII master | 0.192 | 0.540 | 0.35 | 0.723 |
| CI income—CII income | 0.850 | 0.444 | 1.91 | 0.056 |
| CI income—CIII income | 1.032 | 0.446 | 2.31 | 0.021 |
| CII income—CIII income | 0.182 | 0.173 | 1.05 | 0.294 |
| CI income_miss—CII income_miss | 3.741 | 2.838 | 1.32 | 0.187 |
| CI income_miss—CIII income_miss | 4.555 | 2.842 | 1.6 | 0.109 |
| CII income_miss—CIII income_miss | 0.814 | 1.183 | 0.69 | 0.492 |
| CI single—CII single | 0.762 | 0.711 | 1.070 | 0.284 |
| CI single—CIII single | 0.348 | 0.706 | 0.490 | 0.622 |
| CII single—CIII single | −0.414 | 0.339 | −1.220 | 0.222 |
| CI ABWO—CII ABWO | −0.421 | 0.156 | −2.7 | 0.007 |
| CI ABWO—CIII ABWO | −0.550 | 0.163 | −3.38 | 0.001 |
| CII ABWO—CIII ABWO | −0.129 | 0.103 | −1.25 | 0.212 |
| CI employees—CII employees | −0.023 | 0.213 | −0.11 | 0.914 |
| CI employees—CIII employees | −0.233 | 0.217 | −1.07 | 0.284 |
| CII employees—CIII employees | −0.210 | 0.129 | −1.63 | 0.104 |
| CI public—CII public | −0.013 | 0.477 | −0.03 | 0.979 |
| CI public—CIII public | 0.581 | 0.487 | 1.19 | 0.233 |
| CII public—CIII public | 0.594 | 0.292 | 2.03 | 0.042 |
| CI part-time—CII part-time | 2.850 | 0.722 | 3.95 | <0.001 |
| CI part-time—CIII part-time | 2.249 | 0.685 | 3.28 | 0.001 |
| CII part-time—CIII part-time | −0.601 | 0.488 | −1.23 | 0.218 |
| CI flex job—CII flex job | 1.066 | 1.009 | 1.06 | 0.291 |
| CI flex job—CIII flex job | 1.894 | 1.348 | 1.4 | 0.16 |
| CII flex job—CIII flex job | 0.828 | 1.114 | 0.74 | 0.457 |
| CI employee—CII employee | −0.259 | 0.534 | −0.48 | 0.628 |
| CI employee—CIII employee | −0.727 | 0.551 | −1.32 | 0.187 |

(Continues)

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| Variable comparison | Coefficient | Std. err. | $z$ | $P > z$ |
|---|---|---|---|---|
| CII employee—CIII employee | −0.468 | 0.342 | −1.37 | 0.171 |
| CI years since diagnosis—CII years since diagnosis | −0.115 | 0.056 | −2.06 | 0.04 |
| CI years since diagnosis—CIII years since diagnosis | −0.106 | 0.054 | −1.96 | 0.05 |
| CII years since diagnosis—CIII years since diagnosis | 0.010 | 0.023 | 0.41 | 0.678 |
| CI comorbidity—CII comorbidity | 0.000 | 0.000 | 0 | 0 |
| CI comorbidity—CIII comorbidity | 0.000 | 0.000 | 0 | 0 |
| CII comorbidity—CIII comorbidity | 0.000 | 0.000 | 0 | 0 |

## APPENDIX D: CHI-TEST

Figure D1 shows the relations between choice and cost for monthly income groups 0–30,000 DKK, 31,000–49,999 DKK, 50,000–79,999 DKK, and ≥80,000 DKK. The choice frequencies in Figure 1 strongly suggest that lower-income groups choose low-cost alternatives and high-income groups choose high-cost alternatives to a greater extent. A chi-test reveals a significant difference in choice distributions between income groups ($X^2(17.91(9) = 0.036)$).

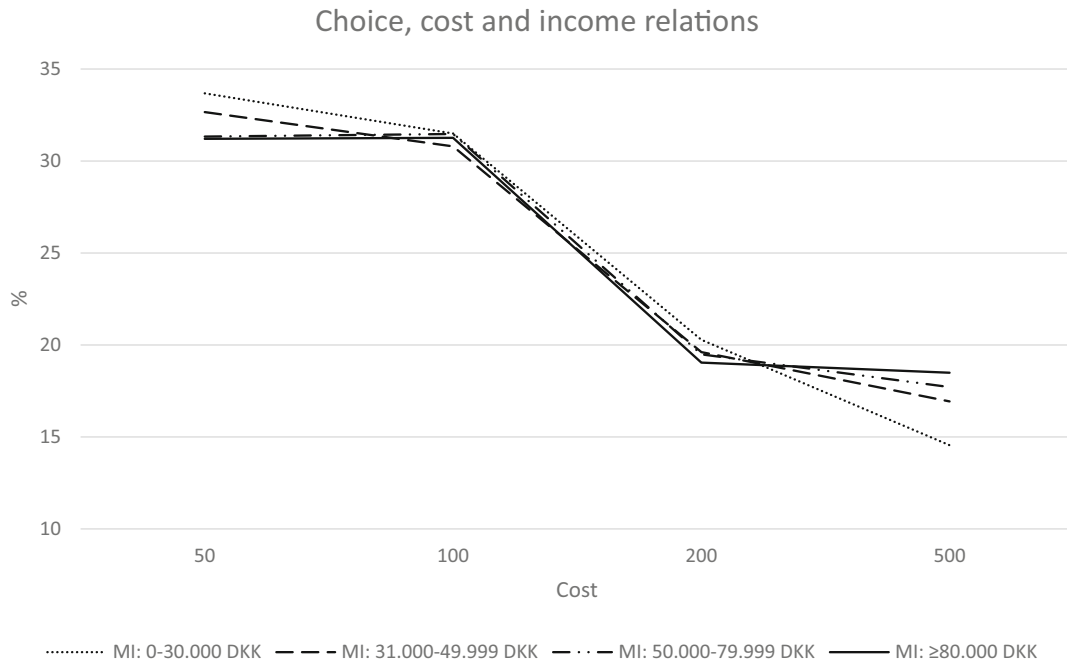



**FIGURE D1** The relation between income and cost of the sum of the chosen alternatives. MI, monthly income.

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