



PARENTAL ROLES IN CHILD TRANSPORT: EXAMINING GENDER AND MUNICIPALITY SIZE IN A POST-SOCIALIST CONTEXT

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Abstract

Large cities are generally considered more liberal than small settlements regarding parental gender division of childcare. We questioned this paradigm in a post-socialist environment where working mothers of preschoolers are perceived as the norm. The study aims to examine the gender differences among parents when transporting children to preschool, car-sharing within a household, and whether they vary across municipality size categories in Slovakia. The data were collected during the nationally representative survey via face-to-face personal enquiries in households of heterosexual cohabiting parents ($n = 844$). Results showed that car-sharing within households did not depend on the municipality size category; however, it depended on the number of cars in a household. In families with only one car, the car was mostly used by the father. In all municipality size categories, mothers were primarily responsible for bringing children in and picking them up from kindergarten. Yet, the proportion of responsible persons varied significantly across municipality size categories. The fathers' involvement in accompanying children was the lowest in the smallest municipalities. On one hand, mothers in medium-sized municipalities (10,000–19,999 inhabitants) faced the least burden due to the combination of fathers' involvement and help from other relatives. On the other hand, help from other relatives was absent in the largest cities, where mothers accompanied their children to a similar extent as in the smallest settlements. The progressive values of parents in the largest cities are not sufficient to relieve mothers of parental responsibilities.

Keywords

post-socialist environment • preschool • transport behaviour • parental roles • urban–rural differences

Introduction

The geographical location of kindergartens and transport accessibility are important to parents' preschool choices and their everyday commute (Cheng et al., 2017; Teszenyi & Hevey, 2018; Blumenberg et al., 2024). From a geographical perspective, one of the main characteristics of nurseries is their uneven spatial accessibility (Pennerstorfer et al., 2024). In Slovakia, almost one-third of municipalities are without a kindergarten (Križan et al., 2022), which can pressure parents to deal with the logistics of transporting their children there. This is where gender roles come into play between mothers and fathers – they have to divide up who will accompany the child to kindergarten. Research to date has shown that gender roles in families are accentuated in childcare. Numerous studies have dealt with father involvement in childcare (Raley et al., 2012; Li, 2020; Miller et al., 2020; Bataille & Hyland, 2023; Diniz et al., 2023). However, the gender roles of fathers and mothers have so far been studied mainly in the context of housework and childcare in general, while omitting parental responsibilities related to children's commuting to preschool. There are some exceptions; however, these do not provide enough information on the subject. For example, Raley et al. (2012) and Offer and Kaplan (2021) examined dropping off and picking up a child from a nursery as two of several indicators of fathers' involvement in childcare, but did not examine these separately. Huertas-Delgado et al. (2024), Scheiner (2016), Schwanen (2007), and Tiikka and Liimatainen (2021) examined parental escorting practices, but their research was conducted in Western and Northern Europe, where gender roles and values of parents may be different from those in Central and Eastern Europe (CEE). The post-socialist preschool model in Slovakia is special for its low-cost state-run kindergartens and a legally guaranteed 3-year parental leave. During the socialist period, mothers were obliged to work, and staying at home was not allowed after a child reached an age suitable for

attending kindergarten. Therefore, working mothers are now perceived as the norm in Slovakia. We are aware that gender roles in the family may vary according to household location. In smaller settlements, there tends to be less efficient public transportation, fewer services, an increased need to commute for services, and a related greater need for car use. At the same time, larger towns and cities are generally considered more liberal than small settlements in terms of gender and childcare issues (Istenič, 2007; Evans, 2018; Evans, 2019).

Therefore, this study aims to examine the gender differences among parents when transporting children to preschool and whether they vary across municipality size categories in Slovakia. In Slovakia, state-subsidised kindergartens are the most frequently attended, accepting children from the age of 3 (from 2.5 years of age in the case of kindergarten capacity) up to entry into primary school, which usually takes place after the child reaches the age of 6. Before a child reaches the age suitable for entry to a state kindergarten, the child may be placed in a private kindergarten or nursery. Since most of the participants had children who were at least three years old, the term "kindergarten" will be used in this case study. In our study, parents were interviewed irrespective of the kindergarten type (private/state).

The following research questions were formulated:

1. Does the involvement of mothers and fathers in accompanying a child to/from kindergarten vary across municipality size categories?
2. Are there any predictors of mothers' and fathers' involvement in accompanying their child to/from the kindergarten?

In addition to these questions, we considered it important to examine who in the family made the kindergarten choice decision and how the car (if present in the family) is shared among household members. When studying fathers' involvement during early childhood, mostly only middle-class families have been studied so far (Diniz et al., 2021). Therefore,

in this study, we used data from a nationally representative survey where all socioeconomic groups were included.

Theoretical background

Fathers' involvement in childcare has developed over time and space. Scholars have pointed to the differences in family arrangements during the mid-20th century between Western capitalist countries and the socialist bloc. In Western society, the breadwinner-caregiver model prevailed, while in socialist countries, women were obliged to work (Hofmeister & Baur, 2015). Despite double-earner households in the socialist bloc, women were expected to be primary caregivers, which posed a double burden on them (Hirt, 2008; Hughes, 2022).

During the 1960s and 1970s, the so-called gender revolution began, with changes in gender roles and norms in work, education, family, and politics. Women's education, participation in the workforce, including in highly skilled positions that had previously been considered masculine, as well as women's participation in public decision-making, increased. Scholars, however, argue that the revolution has been uneven (with different outcomes across socioeconomic classes), asymmetric (with more changes for women than men) and, in recent years, stalled (England, 2010; Raley et al., 2012; England et al., 2020). Some authors, however, argue that the gender revolution is not stalled but is slowly progressing (Scarborough et al., 2019).

The gender revolution is closely related to the "new masculinity ideology" and to the "new father" concept. Kaplan et al. (2017) described "new masculinity ideology" as a combination of authenticity and holistic self-awareness. They also found a strong association between new masculinity and feminist attitudes of men. This contrasts with hegemonic traditional masculinity characterised by antifemininity, status achievement, and toughness (Thompson & Pleck, 1986). Later, Offer and Kaplan (2021) found that fathers with traditional views on masculinity were less involved in childcare

compared to men identifying with the new masculinity ideology. This relates to the concept of the "new father", who is more involved and emotionally available to his children and which is currently relevant due to women's participation in the labour market and overall gender equality expectations (Raley et al., 2012; McGill, 2014; Lewington et al., 2021).

The gender division of childcare is also influenced by practices and policies that vary across EU countries, such as the duration of parental leave. While some countries, such as France, the Netherlands, Denmark, and Sweden, have high rates of childcare attendance for children aged 0-2, others, like Slovakia, the Czech Republic, Poland, and Hungary, maintain a tradition of home-based care until the age of three (Plantenga et al., 2009). An older study by Ruhm (1998), which examined data from nine European countries, indicated that while short or moderate durations of leave support work-family balance, excessively long leaves (over 1.5 years) may discourage women from returning to work and reinforce traditional gender roles within families.

Reinforcing traditional roles in Central European countries after 1989 was confirmed by the findings of Bühlmann et al. (2010), focusing on heterosexual couples aged 18-45 across 20 European countries. They stressed that while in post-communist countries, women were historically expected to both work full-time and be primary caregivers (the so-called "double burden"), after 1989, these countries transitioned to rather conservative family policies (e.g., long parental leave, low male uptake, and decline of public childcare provision). As a result, gender norms became more ambivalent: egalitarian in principle but traditional in practice, especially after the birth of a child. Although many couples in these countries support equal roles, they prefer traditional arrangements when it comes to childcare and housework. Compared to Nordic or Western countries, post-communist couples had the largest gaps between egalitarian attitudes and traditional behaviours, which may be partly a consequence of the extended parental leave in post-communist

countries. However, for families with children over the age of five, the egalitarian model is reverting to behaviour in the realm of paid work, and the participation of women from post-communist countries in the labour process is reaching the same level as that of childless couples at this stage of the family cycle (Bühlmann et al., 2010; Chorvát, 2015).

For this study, it is important to know which parent is providing this in-home care. Research to date has shown that allowing fathers to take care of their children in early childhood not only creates a stronger emotional bond but also lays the foundation for a stronger involvement in paternal child care in the future (Petts & Knoester, 2018). In Sweden, the daddy quotas (the right to time off from paid work and the right to financial support for fathers) are especially effective in promoting gender equality in raising children (Rocha, 2021). The length of the leave (number of days) taken by fathers in Sweden was positively associated with their involvement in child care (Haas & Hwang, 2008). In Slovakia, the daddy quota has been in force since 2011. According to Earle et al. (2025), Slovakia is among the countries with the lowest gender differences in the duration of paid leave for biological parents in the world. Nevertheless, it is still the mother who provides care in most cases in Slovakia, and, moreover, the daddy quota measure has had only a minimal impact on gender beliefs and societal norms: the Slovak population believes that the mother should primarily care for the child, while the father should fulfil the role of breadwinner (Dančíková, 2023).

Despite the changes in family dynamics, however, women are still primary caretakers and spend more time with children than their male counterparts (Johansson, 2011). Some of the frequently mentioned reasons in this regard are, for example, persisting breadwinning roles even in egalitarian thinking fathers (Offer & Kaplan, 2021) and maternal gatekeeping (Allen & Hawkins, 1999; Lee and Schoppe-Sullivan, 2023). Working and higher-earning mothers are better positioned to negotiate household responsibilities, but

the “intensive mothering” culture also leads them to devote more time to children than their partners (Raley et al., 2012; Diniz et al., 2021). There are, however, several models of father involvement which have been used in studies.

Different authors distinguish several models of father involvement in childcare; however, the models differ from each other (see, e.g., Raley et al., 2012; Diniz et al., 2021; Offer & Kaplan, 2021). From the perspective of our study, it is interesting to mention studies by Raley et al. (2012) and Offer and Kalpan (2012) because these included picking up/dropping off children among the observed indicators of some of the dimensions in the model of father involvement. Yet, neither of them reported results separately for the picking up/dropping off tasks, only for the dimensions in general and these, as they are not studied uniformly, cannot be compared with each other. In an older study by Schwanen (2007), fathers were less involved in chauffeuring children than mothers, but when they did, they made more drop-offs than pickups. In the same study, sharing chauffeuring duties among parents allowed both of them to work a sufficient number of hours.

Nevertheless, the prevailing body of literature suggests that being a primary caregiver creates harm to the spatiotemporal flexibility of parents. Primary caregivers (most often mothers) may face especially strong constraints in their everyday mobility (Shen et al., 2015; Kwan, 2000). With children, primary caregivers’ transportation is more complicated; their travel patterns are more complex and fragmented (McBride et al., 2020), are often reliant on car use as an efficient means of transportation (Blumenberg, 2016; Maciejewska & Miralles-Guasch, 2019), and have less time overall for other activities and experience time scarcity (Baxter et al., 2007; Strazdins et al., 2011; Chen & Yeh, 2021). Mothers’ gender roles, in concert with gendered travel behaviour and overall spatiotemporal constraints and fixity, also negatively affect their working lives – they tend to work part-time, closer to home, or in

lower-paid or less skilled positions or do not work at all (Silm et al., 2013; Kawabata and Abe, 2018; Kley & Drobnič, 2019; Parker & Rubin, 2022). Moreover, especially in CEE countries, it is still often that the mother uses the car less than the father, with reasons such as unequal access to a car within the household (Silm et al., 2013), lack of self-confidence, a tendency to take transport expenses into account to a greater extent than men, or being discouraged by the partner himself (Požani et al., 2017).

On average, urban residents have more liberal family values than rural dwellers (Istenič, 2007; Evans, 2018; Evans, 2019; Luca et al., 2023). In addition, urban women are sometimes perceived as independent, while rural women are perceived as submissive and family-oriented (Lui, 2016). In rural areas, there also tends to be more support for political parties promoting more conservative family policies and values compared to urban areas (Gimpel et al., 2020; Deppisch et al., 2022; Mapes, 2024). These differences tend to be explained by a range of factors, such as better economic opportunities for women in cities, better access to services, lack of informal social control, as well as overall diversity, exposure to new ideas, and exposure to heterogeneous gender ideologies and practices, all typical for urban but not rural areas (Wirth, 1938; Hughes, 1997; Evans, 2018; Evans, 2019). However, there are exceptions. For example, in the research by Istenič and Kveder (2008), which asked about self-assessed attitudes towards gender equality, no differences were found between urban and rural populations.

Yet, the paradigm of more liberal cities compared to rural areas should be interpreted with caution since it applies to areas where basic human needs are met. For example, it does not apply to slums and other places with a lack of economically secure inhabitants (Luca et al., 2023). Similarly, evolutionary modernisation theory explains that the spread of liberal thinking can be driven by socioeconomic progress (Inglehart & Welzel, 2012; Manea & Rabušić, 2020).

Methods

Participants and procedure

Data for the research were collected using the Computer-Assisted Personal Interviewing method. The data collection was carried out by Focus, a certified Slovak research agency, which is a member of the European Society for Opinion and Marketing Research (ESOMAR). During the data collection, 1013 parents of small children (3 to 6 years old) were interviewed. The data sample was representative in terms of age, education level, nationality, size categories of municipalities, and regional divisions of Slovakia. In this study, however, only the data regarding households with heterosexual cohabiting parents were used. In addition, data on parents whose children did not attend kindergarten were excluded from the research. This way, we were able to study all the research questions formulated above. The final sample consisted of 844 parents (82.35% women; 17.65% men). This difference arose as a result of the way the research was conducted. The data were collected during face-to-face personal enquiries in households, and the researcher started the meeting with a question: "Could I speak to the parent in your household who has the most information on the topic of attending a kindergarten?" According to the declaration of the household members, it was the mother who had more information on the subject. Zangger and Widmer (2020) and Ferguson et al. (2022) had a similar sample when examining childcare decisions, with men making up 26% and 7.32% of their samples, respectively. Data were collected during November and December 2023. The basic characteristics of the data sample are shown in Table 1. Among all women in the research, 70.07% worked full-time or were entrepreneurs, 6.33% worked part-time, 17.41% were on maternity leave with another child, and 6.19% were unemployed (including those on disability pension). Looking at men, 95.97% worked full-time or were entrepreneurs, 1.34% were on parental leave, and 2.68% were unemployed (including those

on disability pension). During the interviews, information on basic individual characteristics, the decision-making process regarding kindergarten selection, and data on parental travel behaviour when transporting children to preschool were collected. The research

was anonymous, and the participants were not asked to give the exact place of residence or other identifiers which are subjects to GDPR (The European Union’s General Data Protection Regulation).

Table 1. Basic characteristics of the dataset

	Frequency	%
Age of the participant		
21 to 25	19	2.25
26 to 30	183	21.68
31 to 35	335	39.69
36 to 40	218	25.83
41 and above	89	10.55
Municipality size [inhabitants]		
Up to 999	143	16.94
1,000-1,999	139	16.47
2,000-4,999	140	16.59
5,000-9,999	82	9.72
10,000-19,999	59	6.99
20,000-49,999	107	12.68
50,000-99,999	63	7.46
100,000 and above	111	13.15
Number of cars in a household		
0	40	4.74
1	405	47.99
2	375	44.43
3 and above	24	2.84
Household income [monthly]		
Up to 700 €	6	0.71
701-1,400 €	95	11.26
1,401-2,000 €	387	45.85
2,001-3,000 €	271	32.11
3,000 € and more	85	10.70
Education of the participant		
Primary (even incomplete)	16	1.90
Secondary	540	63.98
Higher	288	34.12
Family status		
Married	568	67.30
Not married	276	32.70

Data and Calculations

The appropriateness of examining the municipality size category was tested using a control question about the gender beliefs of individuals: “Women should care more about their families than their careers”. Participants were asked to rate the statement on a 4-point Likert scale (1 = totally agree, 2 = rather agree, 3 = rather disagree, 4 = not at all agree). Those who indicated “don’t know” (9 individuals) were excluded from testing. The Kruskal-Wallis rank sum test revealed significant differences in gender beliefs across municipality size categories

(Kruskal-Wallis Chi-squared = 31.756, df = 7, p-value = 4.507e-05). The distribution of gender beliefs across municipality size categories is shown in Figure 1, pointing to a slight decrease in conservative responses and a slight increase in more egalitarian attitudes in larger municipalities. To gain information on gender differences among parents, participants were asked to answer the following questions:

- “Who had a decisive say in the kindergarten selection?” with possible answers being “mother”, “father”, “common decision of parents”, and “other (please specify)”
- “Who most often takes your child to the kindergarten in the morning?” with possible answers being “mother”, “father”, “other relative”, and “other (please specify)”
- “Who most often picks up your child from the kindergarten in the afternoon?” with possible answers being “mother”, “father”, “other relative”, and “other (please specify)”
- “How often does the child’s father (if present in the family) use the car (in general, not only for commuting to kindergarten)?” with possible answers being “daily”, “at least once a week”, “less than once a week”, “never”, and “other (please specify)”

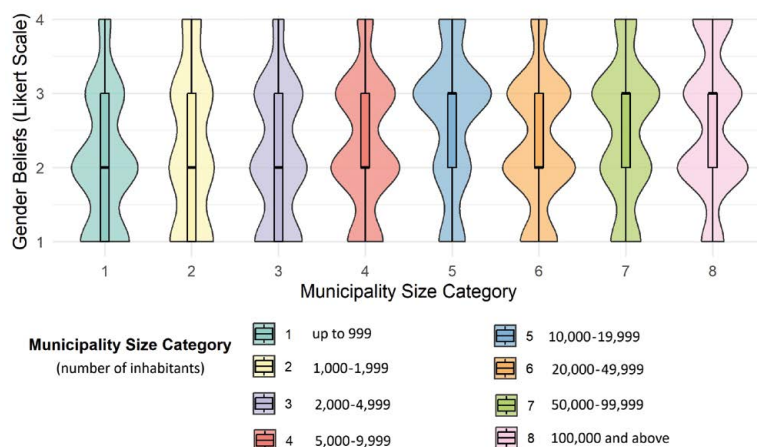


Figure 1. Distribution of gender belief across municipality size categories using 4-point Likert scale (1 = totally agree, 2 = rather agree, 3 = rather disagree, 4 = not at all agree)

- “How often does the child’s mother (if present in the family) use the car (in general, not only for commuting to kindergarten)?” with possible answers being “daily”, “at least once a week”, “less than once a week”, “never”, and “other (please specify)”

To test whether the distribution of responses differed across different municipality size categories, the Chi-square test of independence was calculated. When calculating whether the proportion of the kindergarten choice decision-makers is dependent on the municipality size category, a Monte Carlo Simulation for Fisher’s Exact Test was used (in several cases, expected values in the contingency table were below 5, and, at the same time, the contingency table was too large for classic Fisher’s Exact Test). Other important questions used in this research were the following:

- “How many cars are there in the child’s household?”
- “What is the most common transport mode by which your child is getting to the kindergarten in the morning?” with possible answers being “walking”, “public transport”, “car”, “cycling”, “other (please specify)”
- “What is the most common transport mode by which your child is picked up from the kindergarten in the afternoon?” with possible

answers being “walking”, “public transport”, “car”, “cycling”, “other (please specify)”

To reveal the predictors of mothers’ and fathers’ involvement in accompanying their child to/from kindergarten, binomial logistic regression was used. Independent variables were as follows: municipality size category, additional household help, household income, distance to the kindergarten (minutes), driving frequency of mother and father as well as the information on which parent drives more frequently, number of cars in a household, morning transport mode to take the child to the kindergarten, afternoon transport mode by which the child is picked up from the kindergarten, and the information on which parent made the kindergarten decision choice.

To analyse whether the proportion of more frequent car users was dependent on the number of cars in a household, Fisher’s Exact Test was used (in several cases, expected values in the contingency table were below 5. Therefore, the Chi-squared test was not appropriate for calculations). To calculate whether the proportion of more frequent car users was dependent on the municipality size category and on the number of cars in a household, only participants who owned at least one car (804 participants) were involved in the calculations.

Results

The kindergarten selection was, in most cases, made by both parents jointly (81%), while this decision was made in 17% of cases by mothers only, in 1% by fathers only, and in 0.2% of cases by someone else (e.g., by the municipality mayor). The Monte Carlo Simulation for Fisher's Exact Test showed no significant association between the type of person having a decisive say in the kindergarten selection and municipality size category ($p\text{-value} = 0.308$).

Of the study's total sample, most persons primarily responsible for bringing a child to the kindergarten were mothers (73%). The results of the Chi-squared test of independence showed that the proportion of persons primarily responsible for bringing a child to the kindergarten in the morning varies significantly across municipality size categories ($X\text{-squared} = 34.893$, $df = 14$, $p\text{-value} = 0.001524$). Fathers were the primary people responsible for bringing a child to the kindergarten least often in the smallest municipalities. Among all the participants, 7% chose responses other than "mother" or "father", of which 97% responses were "other relative". In small municipalities, more than in large ones, help from other relatives proved to be important, while in the largest municipalities, help from other relatives is negligible. The smallest burden is placed on mothers in the municipality size category 5

(10,000–19,999 inhabitants), which is also the category of the greatest involvement of fathers in accompanying children to kindergarten (Tab. 2).

In the afternoon, most people primarily responsible for picking up a child from a kindergarten were mothers (65%). The Chi-squared test revealed a significant association between who is a responsible person for picking up a child from a kindergarten and municipality size category ($X\text{-squared} = 28.055$, $df = 14$, $p\text{-value} = 0.01399$). As shown in the Table 3, the involvement of fathers was the lowest in the smallest municipality size category (14%). Together, 14% of respondents chose a different answer than "mother" or "father", of which 96% stated that another relative most often picks their child up. In most municipality size categories, the number of fathers who are primarily responsible for picking a child from a kindergarten was lower than the expected value, with exceptions of municipality size categories 3 (2,000–4,999 inhabitants) and 8 (100,000 inhabitants and above). The lowest burden on mothers was observed in the municipality size category 3 (2,000–4,999 inhabitants), which had both the highest rate of fathers' involvement and a high rate of help from other relatives. Similarly to the morning, other relatives also played an important role in picking up the child from the kindergarten in the afternoon, especially in the smallest municipalities (categories 1, 2 and 3).

Table 2. Proportion of persons primarily responsible for bringing a child to the kindergarten in the morning across municipality size categories

Municipality size category [inhabitants]	Mother [number]	Mother [%]	Std. resid	Father [number]	Father [%]	Std. resid	Other [number]	Other [%]	Std. resid
up to 999	112	78.32	1.67	19	13.29	-2.34	12	8.39	0.79
1,000 to 1,999	103	74.10	0.43	19	13.67	-2.18	17	12.23	2.73
2,000 to 4,999	100	71.43	-0.35	27	19.29	-0.39	13	9.29	1.24
5,000 to 9,999	52	63.41	-1.97	24	29.27	2.07	6	7.32	0.17
10,000 to 19,999	36	61.02	-2.07	20	33.90	2.64	3	5.08	-0.56
20,000 to 49,999	78	72.90	0.67	26	24.30	1.04	3	2.80	-1.78
50,000 to 99,999	49	77.78	0.95	13	20.63	0.03	1	1.59	-1.72
100,000 and above	83	74.78	0.54	25	22.52	0.57	3	2.70	-1.86

The car use frequency among fathers and mothers was equal in 57% of all the 804 car-owning households in the research. In only 10% of cases, mothers used their family car/cars more often than fathers, while in 33% of cases, the father was the most frequent car user within a couple. The Chi-squared test revealed no evidence that the proportion of a person most often using a household car depends on the municipality size category (X-squared = 9.1588, df = 14, p-value = 0.8207). However, using Fisher's Exact Test, the results pointed to strong evidence that the proportion of those who use a car more often depends on the number of cars in a household (p-value < 2.2e-16). In the case of only one car in a household, the car is used mostly by fathers, while in households with two or more cars, the car-sharing within a household is more equal (Tab. 4).

Predictors of mothers' and fathers' involvement in accompanying their child to/from kindergarten

As shown in the Table 5, the probability that the mother brings the child to the kindergarten in the morning increases in families where the choice of the kindergarten was made solely by the mother ($\beta = 1.30$, $p < 0.001$), when the child walks to the kindergarten in the morning ($\beta = 0.49$, $p = 0.002$), and when the mother drives the car more often than the father ($\beta = 0.89$, $p = 0.006$). The probability that it is the mother who accompanies the child to the kindergarten decreased when the choice of the kindergarten was a joint parental decision ($\beta = -0.99$, $p < 0.001$), when the father was the sole decision maker ($\beta = -1.69$, $p = 0.018$) and when the child was driven to the kindergarten by car ($\beta = -0.50$, $p = 0.001$). The probability also decreases with

Table 3. Proportion of persons primarily responsible for picking up a child from the kindergarten in the afternoon across municipality size categories

Municipality size category [inhabitants]	Mother [number]	Mother [%]	Std. resid	Father [number]	Father [%]	Std. resid	Other [number]	Other [%]	Std. resid
up to 999	101	70.63	1.47	20	13.99	-2.25	22	15.38	0.63
1,000 to 1,999	82	58.99	-1.7	28	20.14	-0.26	29	20.86	2.67
2,000 to 4,999	80	57.14	-2.22	40	28.57	2.42	20	14.29	0.20
5,000 to 9,999	59	71.95	1.33	16	19.51	-0.34	7	8.54	-1.44
10,000 to 19,999	39	66.10	0.14	10	16.95	-0.79	10	16.95	0.74
20,000 to 49,999	75	70.09	1.12	22	20.56	-0.11	10	9.35	-1.41
50,000 to 99,999	41	65.08	-0.04	11	17.46	-0.71	11	17.46	0.89
100,000 and above	74	66.67	0.33	30	27.03	1.68	7	6.31	-2.44

Table 4. Proportion of more frequent car users across household categories (defined by number of cars within a household). If both parents reported they never drive despite having a car, these couples were considered equal

Number of cars in a household	More frequent car user within a household					
	mother	mother [%]	father	father [%]	equal	equal [%]
1	66	16.30	216	53.33	123	30.37
2	18	4.80	44	11.73	313	83.47
3	0	0.00	2	10.00	18	90.00
4	0	0.00	0	0.00	3	100.00
5	0	0.00	0	0.00	1	100.00

Table 5. Predictors of mothers' and fathers' involvement in bringing their child to the kindergarten in the morning

Mother as the person accompanying the child to the kindergarten in the morning					
		estimate	std. error	z value	Pr(> z)
Municipality size category		-0.033760	0.030420	-1.110	0.26700
Additional household help		-0.034400	0.185700	-0.185	0.85300
Household income		-0.207320	0.092190	-2.249	0.02450*
Distance from home to a kindergarten [minutes]		0.001799	0.011280	0.159	0.87300
Driving frequency of the mother		0.086620	0.068020	1.274	0.20282
Driving frequency of the father		-0.262900	0.103800	-2.534	0.01130*
Number of cars in a household		-0.094940	0.118000	-0.805	0.42100
More frequent driver within a household	mother	0.887410	0.321930	2.757	0.00584**
	father	-0.226850	0.164130	-1.382	0.16700
	same driving frequency	-0.162300	0.155500	-1.043	0.29700
	both never drive	0.553410	0.398740	1.388	0.16500
Morning child's transport mode	bike	-0.284950	0.869490	-0.328	0.74300
	car	-0.502400	0.156700	-3.207	0.00134**
	public transport	0.191800	0.518300	0.370	0.71100
	walking	0.493000	0.158300	3.115	0.00180**
Kindergarten choice decision made by	mother	1.304980	0.277130	4.709	2.49e-06***
	father	-1.690500	0.711400	-2.376	0.01750*
	common decision	-0.987000	0.244400	-4.038	5.39e-05***
Father as the person accompanying the child to the kindergarten in the morning					
Municipality size category		0.111990	0.034090	3.285	0.00102**
Additional household help		-0.358000	0.194300	-1.842	0.0654.
Household income		0.180000	0.101500	1.774	0.0761.
Distance from home to a kindergarten [minutes]		-0.007609	0.012755	-0.597	0.55100
Driving frequency of the mother		-0.125690	0.073960	-1.699	0.0892.
Driving frequency of the father		0.436300	0.133700	3.262	0.00111**
Number of cars in a household		0.126800	0.130000	0.975	0.33000
More frequent driver within a household	mother	-1.123000	0.404250	-2.778	0.00547**
	father	0.465200	0.177400	2.622	0.00874**
	same driving frequency	-0.001733	0.171022	-0.010	0.99200
	both never drive	-0.7292 00	0.482900	-1.510	0.13100
Morning child's transport mode	bike	-0.255640	1.098780	-0.233	0.81600
	car	1.082500	0.184800	5.858	4.67e-09***
	public transport	-0.093710	0.562380	-0.167	0.86800
	walking	-1.090100	0.189700	-5.745	9.17e-09***
The kindergarten choice decision made by	mother	-1.841960	0.397290	-4.636	3.55e-06***
	father	1.601970	0.676350	2.369	0.01790*
	common decision	1.307900	0.313600	4.171	3.04e-05***

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

Table 6. Predictors of mothers' and fathers' involvement in picking up their child from the kindergarten in the afternoon

Mother as the person picking up a child from kindergarten in the afternoon					
		estimate	std. error	z value	Pr(> z)
Municipality size category		0.031580	0.028540	1.107	0.268376
Additional household help		-0.339500	0.179400	-1.892	0.0585.
Household income		-0.321330	0.087520	-3.671	0.000241***
Distance from home to a kindergarten [minutes]		0.004843	0.010616	0.456	0.648000
Driving frequency of the mother		-0.119960	0.066570	-1.802	0.0715.
Driving frequency of the father		-0.293880	0.095830	-3.067	0.002170**
Number of cars in a household		-0.249500	0.111400	-2.239	0.025100*
More frequent driver within a household	mother	0.314560	0.253150	1.243	0.214000
	father	-0.098260	0.155460	-0.632	0.527000
	same driving frequency	-0.198200	0.145600	-1.361	0.173000
	both never drive	1.078780	0.418720	2.576	0.009980**
Afternoon child's transport mode	bike	0.062240	0.710830	0.088	0.930000
	car	-0.423500	0.145700	-2.907	0.003650**
	public transport	0.330610	0.531280	0.622	0.534000
	walking	0.390470	0.146450	2.666	0.007670**
Kindergarten choice decision made by	mother	0.777000	0.214500	3.623	0.000291***
	father	-0.413050	0.674750	-0.612	0.540000
	common decision	-0.697600	0.205600	-3.393	0.000691***
Father as the person picking up a child from kindergarten in the afternoon					
Municipality size category		0.036100	0.032980	1.095	0.274000
Additional household help		-0.345200	0.191400	-1.804	0.0713.
Household income		0.157920	0.099540	1.586	0.113000
Distance from home to a kindergarten [minutes]		-0.003822	0.012334	-0.310	0.757000
Driving frequency of the mother		0.095040	0.077640	1.224	0.221000
Driving frequency of the father		0.331400	0.120800	2.743	0.00608**
Number of cars in a household		0.234000	0.127700	1.833	0.0669.
More frequent driver within a household	mother	-0.547440	0.323730	-1.691	0.0908.
	father	0.016410	0.180580	0.091	0.928000
	same driving frequency	0.287400	0.169800	1.693	0.0905.
	both never drive	-0.795730	0.482580	-1.649	0.0992.
Afternoon child's transport mode	bike	0.038920	0.806190	0.048	0.962000
	car	1.282000	0.185600	6.907	4.94e-12***
	public transport	-0.324480	0.638070	-0.509	0.611000
	walking	-1.288200	0.1911 00	-6.742	1.56e-11***
Kindergarten choice decision made by	mother	-0.873170	0.272760	-3.201	0.001370**
	father	-0.794830	1.063950	-0.747	0.455000
	common decision	0.884400	0.266000	3.325	0.000885***

Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

a higher frequency of fathers driving ($\beta = -0.26$; $p = 0.011$) and with growing household income ($\beta = -0.21$; $p = 0.024$). The other variables did not show a statistically significant effect.

The probability that the father brings the child to kindergarten in the morning increases in families where both parents are involved in the decisions on choosing one ($\beta = 1.31$, $p < 0.001$) and where the father was the sole decision maker ($\beta = 1.60$, $p = 0.018$), in families where the child is brought to kindergarten by car, ($\beta = 1.08$, $p < 0.001$), where father frequently drives ($\beta = 0.44$, $p = 0.001$) and where father drives more frequently than the mother ($\beta = 0.47$, $p = 0.009$). Municipality size also had a moderately significant positive effect ($\beta = 0.11$, $p = 0.001$). Conversely, the probability that the child is brought to the kindergarten in the morning by the father decreases when the mother is the sole decision maker for the kindergarten choice ($\beta = -1.84$, $p < 0.001$) when the child is accompanied by walking in the morning ($\beta = -1.09$, $p < 0.001$), and where the mother drives more often than the father ($\beta = -1.12$, $p = 0.005$). The other variables did not represent statistically significant predictors in this model.

Looking at afternoon periods (Tab. 6), the father accompanying the child from the kindergarten was significantly more probable in families where the choice of kindergarten was decided jointly by both parents ($\beta = 0.88$; $p = 0.0009$) and where the child went from the kindergarten by car ($\beta = 1.28$; $p < 0.001$). The probability of the father picking up the child also increased as the frequency of the father driving by car increased ($\beta = 0.33$; $p = 0.006$). Conversely, the probability of the child being picked up by the father decreases if the mother is the sole decision maker for the choice of kindergarten ($\beta = -0.87$; $p = 0.0014$) and if the child is picked up by walking ($\beta = -1.29$; $p < 0.001$). The other observed factors did not show a statistically significant effect.

A higher probability of the mother picking up the child in the afternoon was found in cases where the mother herself chose kindergarten ($\beta = 0.78$; $p = 0.0003$), the child is picked

up by walking ($\beta = 0.39$; $p = 0.0077$), and in households where no parent drives ($\beta = 1.08$; $p = 0.010$). A negative relationship was found when both parents made the decision jointly ($\beta = -0.70$; $p = 0.0007$) and in families where the child is picked up by car ($\beta = -0.42$; $p = 0.0037$), in households with lower income ($\beta = -0.32$; $p = 0.0002$) and with fewer cars ($\beta = -0.25$; $p = 0.025$). Also, the probability that a child was picked up from the kindergarten by the mother decreased as the frequency of the father driving increased ($\beta = -0.29$; $p = 0.002$). The other observed factors did not show a statistically significant effect.

Discussion and Conclusions

This study used nationwide data on parental travel behaviour to examine gender differences among parents when transporting children to preschool and how they vary across municipality size categories in Slovakia. Several important findings emerged.

In both tasks (bringing the child in and taking the child out of the kindergarten), the mothers were primarily responsible for the activity. Interestingly, despite these results and the fact that families in our study chose the mother as the person who had the most information about kindergarten attendance, in most families, kindergarten selection was made through a joint decision between both parents. The results are in line with studies suggesting that despite the gender revolution in parenting, mothers still perform more childcare (Johansson, 2011) and the idea of a father as a breadwinner and a mother as a caregiver persists (Offer and Kaplan, 2021; Edlund and Öun, 2023).

The greater involvement of mothers in bringing children to and taking them from the kindergarten is in line with the prevailing body of literature (e.g., Scheiner, 2016; Tiikaja and Liimatainen, 2021). Our study found this to be true in all municipality size categories. However, responses across municipality size categories significantly varied. Mothers were particularly burdened with responsibilities in the smallest municipalities (due to low

father involvement) and the largest municipalities (due to almost non-existent multigenerational help). This contrasts with results by Scheiner (2016), who suggested lower burdens for mothers in large cities with more than 100,000 inhabitants due to the highest fathers' involvement in escorting preschool children. In our study, although in large cities, parents may have more progressive values, the absence of other helping adults (e.g., grandparents), who often live hundreds of kilometres away, means that mothers still face a high burden of parenting responsibilities. Multigenerational help with childcare is particularly absent in the municipality size category 8 (more than 100,000 inhabitants), which is matched only by Bratislava (the capital of Slovakia) and Košice (the second largest city and the centre of economic activity in the east of the country). Multiple studies have shown that multigenerational help is crucial in relieving mothers of parental responsibilities (Rišová, 2024), mitigating their spatiotemporal fixity (Feng et al., 2013; Kwan et al., 2014; Shen et al., 2015; Shen et al., 2021), and making them more involved in the workforce (Ta et al., 2019). Thus, it can significantly reduce gender inequalities. In our study, the burden on mothers was the lowest in medium-sized municipalities. In Slovakia, living near grandparents is common in medium-sized and smaller settlements, which supports intergenerational help.

This study also revealed strong evidence of gender-based car-sharing. In most households with only one car, fathers were its primary users. In contrast, in most families with two or more vehicles, the car-sharing was equal. Studies of other authors, however, have shown inconsistent results. In the US, Blumenberg et al. (2018) found that women in dual-earner car-deficient households (with fewer cars than drivers) use cars more often, which was explained by practical necessity. According to this, women with more fragmented activity travel patterns, which means sequencing more daily activities and trips (McBride et al., 2020), should use the car more often. However, results across Europe

have shown the opposite results, namely that women living in car-deficient households have less access to family cars than men, explained by unequal economic power, gender roles, and persisting patriarchal structures (Scheiner and Holz-Rau, 2012; Silm et al., 2013; Tiikkaja and Liimatainen, 2021).

The most significant predictors of mothers' and fathers' involvement in accompanying their child to/from kindergarten relate to the questions of who drives the car and how often, and who made the decision about the choice of kindergarten. When examining the predictors, gender stereotypes can be seen in both the father driving and the mother as the primary decision maker for kindergarten choice. The burden on mothers also declines in higher-income households, which aligns with the idea that increased interest in fathers' roles in the family results from socio-economic changes, e.g., the increased number of women in the labour force (Diniz et al., 2021). Another study found that fathers are more involved in child care when their wives are employed and contribute a greater share of the couple's earnings (Raley et al., 2012), which may put mothers in a better bargaining position on the division of household tasks. In higher-income households, working mothers may also have less time to carry out routine family activities, which, as a result, they have to share with other family members (e.g., the father).

This study is subject to limitations. Information on parental motivations and family dynamics would allow for a more in-depth explanation of the results. Another limitation of this study lies in the absence of some data that could help clarify our findings. These are, for example, information about the other parent (e.g. employment status), specific working hours, presence of other children, etc. Last but not least, this case study was set in a specific geo-cultural context, so the results need to be interpreted with caution.

Nevertheless, this study has provided valuable insights into the distribution of family gender roles in a post-socialist environment. Importantly, the results of this study did not

confirm the paradigm that mothers in the larger, and therefore more progressive, cities of the Global North face less of a burden than mothers in small municipalities. In this context, the help of not only fathers but also, and importantly, other family members, whose possible absence can burden mothers more than we thought, emerges as crucial.

Considering the most important findings, such as the high burden on mothers, the low participation of fathers, and the importance of help from other adults, several managerial and practical implications can be formulated. For example, employers should encourage flexible working hours and on-demand home offices for parents of young children, regardless of the parent's gender. Awareness-raising initiatives in kindergartens would be helpful, e.g., "dad drop-off week" campaigns could help normalise fathers' greater involvement in accompanying children to preschools. Grandparents programs, which currently exist in some countries such as the USA or Denmark (substitute "grandparent" helping

with child care), could also help relieve parents of responsibilities. There are undoubtedly other effective measures that can be found (e.g., an increase in public investments in early child care). It is important to find solutions to relieve the burden on mothers and to create greater equality between partners in the care and transport of children.

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Unless otherwise stated, the sources of tables and figures are the authors', on the basis of their own research.

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