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Gender Gap and Parenthood Penalties in Business Travel from 2001 to 2017: Occupational Variations and Associations with Technology Use

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GENDER GAP AND PARENTHOOD PENALTIES IN BUSINESS TRAVEL FROM 2001 TO 2017: OCCUPATIONAL VARIATIONS AND ASSOCIATIONS WITH TECHNOLOGY USE

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ABSTRACT

This paper evaluates transitions in gender differences and parenthood penalties in the chance of business travel, focusing on variations by occupation and technology usage. Although literature documents that women and parents of small children are substantially less likely to travel for business, particularly long ones, little research has explored changes in the gap. Moreover, not much attention has been given to whether they vary by business travel distance, occupation, or technology adaptations. This study analyzes domestic intra-regional business travel likelihood by different distance thresholds, using three U.S. National Household Travel Surveys from 2001 to 2017. By employing the Probit model, our analysis finds narrowing gender gaps and parenthood penalties in business mobility, thanks to the shrinking travel needs. Internet-savvy workers, in particular, experienced narrower gender gaps, especially among those without small children. The conditional prediction suggests a disappearing gender gap and parenthood gap for the sales and service workers, even for trips over 50 miles per day. Contrary, the gender gap in business mobility among the professional and managerial workers persistently remained in 2017 for long-distance trips. The declining trend in the gender gap and parenthood penalty for the business travel likelihood is a vital sign for reducing inequalities and work-life balances.

JEL classification: R4, J16

Keywords: Business travel, gender gap, internet (non) savvy, ICT development

1. Introduction

Despite significant progress toward female participation in the labor market, women are still significantly underrepresented in business travel (Aguilera, 2008; Collins and Tisdell, 2002; Schwab et al., 2019). The primary reason for the gender gap in business mobility may be the gender gap in career opportunities. The time shortage caused by child-rearing duties often discourages or makes it challenging for women to choose or promote to jobs with higher-level of responsibilities (Gustafson, 2006). As business travel goes hand-in-hand with prestigious jobs, workers with care responsibilities often hesitate or fail to take such positions (Magnusson, 2010).

While literature reports persistent gender gaps and parenthood penalties in business mobility, digital technologies may have helped narrow the gaps by reducing business travel needs. For instance, ICT has replaced many in-person meetings with virtual ones as video conferencing tools improve (Faulconbridge et al., 2009). The growth of inside salesforce and customer-relation management tools have also replaced door-to-door outside sales and regular visits to clients (Thaichon et al., 2018). Moreover, automated data sharing has proliferated to reduce the need for data collection and information sharing trips (Claffy et al., 2020). As a result, by 2017, the average American worker traveled less frequently and fewer miles than in 2001 (McGuckin and Fucci, 2018). Such declining trends in business travel undoubtedly improved work-life balance, particularly for workers with caring responsibilities.

This study examines repeated cross-sectional travel data from three U.S. National Household Travel Survey (NHTS) to assess whether the gender gap and parenthood penalty in business mobility has narrowed since 2001. The work-related business trips include but are not limited to those for buying and delivering goods or services, visiting clients or branches for meetings, making door-to-door sales, or participating in conferences. It is important to note that most of the trips in the NHTS are basically intra-regional (less than 200 miles per day) and car-based.

Our paper employs the Probit model to investigate whether occupational categories and ICT familiarity affect the gender gap and parenthood penalty in business mobility. We also test the model for business travel with different travel mile thresholds (ranging between 10-100 miles or longer) to see whether the gap is more significant for relatively longer-distance travel. To investigate the associations with technological adaptations, we distinguish internet-savvy from non-internet-savvy workers and compare their travel behaviors. We test a few variations of internet-savvy definitions to check the robustness of the results.

Our analysis finds narrowing but persistent gender gaps and parenthood penalties in business

mobility between 2001 and 2017. The gap was more evident for sales and service workers than for professional and managerial workers in 2001; however, it narrowed more quickly for sales and service workers. In addition, ICT familiarity narrowed the gender gap among workers without small children by giving higher chances to women.

The paper proceeds as follows. The next section discusses critically relevant studies on the gender gap and the source of gender differences focusing on the links with occupational variations, child presence, and ICT familiarity. Section 3 introduces the data and descriptive statistics of male/female business travel characteristics. Next, sections 4 and 5 present our estimations and post-estimation predictions. Finally, the paper is completed with limitations, perspectives, and conclusions.

2. **Business Travel, ICTs, and the Gender**

2.1 Trends in business travels and business travelers since 2000

Businesspersons travel for various purposes: buying and delivering goods, providing and receiving on-site services, and making face-to-face communications with clients, business partners, and others. Among these work-related business trips, trips for inter-personal interactions have attracted research attention because the rise of virtual interactions may have affected those costly business travels (Aguilera, 2008; Denstadli, 2004; Denstadli et al., 2013; Faulconbridge et al., 2009, 2020). Indeed, over the last 20 years, ICT and the internet have become essential for businesses and substantially impacted travel behaviors. Specifically, researchers discuss three different implications on travel behavior; substitution effects (Arnfalk and Kogg, 2003; Beaverstock et al., 2010; Denstadli, 2004; Denstadli et al., 2013), complementary effects (Arnfalk and Kogg, 2003; Denstadli et al., 2013; Faulconbridge et al., 2009; Mokhtarian, 2009; Salomon, 1986) , and modification effects (Faulconbridge et al., 2020; Haynes, 2010) .

Since 2000, virtual communications have gradually replaced business travel, particularly when travel disruptions and economic depressions occur. The first wave of digital substitution was observed in 2001 when the dot-com bubble crashed, and the 9-11 incident happened (Haynes, 2010; Lian and Denstadli, 2004). Although video conferencing remained a supplemental tool in business communications, it substituted 2.5-3.5% of business air travel in Norway (Lian and Denstadli, 2004). The second wave came in the late 2000s when the financial crisis hit the economy, and climate justice issues attracted public attention (Poom et al., 2017; Roby, 2014).

Business air travel was criticized for being financially and environmentally costly, and some of them were replaced by virtual tools. The most recent wave of digital substitution arrived when the COVID pandemic started in 2020 (Hacker et al., 2020). Due to the severe restrictions on in-person interactions, most business communications were replaced by virtual ones.

Yet, previous research also found that face-to-face meetings kept preferred for many essential business scenes, and the degree of substitution is limited. For example, many workers believed in-person interactions were more appropriate for meetings that demanded serendipities, tacit information exchanges, or critical decisions (Arnfalk and Kogg, 2003; Faulconbridge et al., 2009). Face-to-face contact was also preferred in maintaining relationships with project clients because it requires deep in-person communication (Faulconbridge et al., 2020). Furthermore, ICT complements (generates) the business travels for sales and marketing purposes because of the geographically extended production and consumption networks (Aguilera, 2008; Denstadli et al., 2012; Mokhtarian, 2009).

Business travels are typically made by workers with authority and discretion, such as managers or executives (Aguilera, 2008). Media-richness theory argues that managers and executives travel more because knowledge- and learning-intensive interactions require in-person communication (Daft and Lengel, 1984; Faulconbridge et al., 2020; Oxford Economics USA, 2009; Poom et al., 2017; Wickham and Vecchi, 2008). Demographically, non-Hispanic White senior males travel substantially more than their younger, female, or racial-ethnic minority counterparts (Frändberg and Vilhelmson, 2003). For instance, in the U.S. non-Hispanics, white males represented about 77% of the business travelers in 2001 and 80% in 2009 (NHTS, 2009). Also, the average age of business travelers was a little above 45 years old in 2009, reflecting business travelers' hierarchical positions.

Professionals and managerial workers tend to make internal and external meetings for coordination, information exchange, and intra- or inter-organizational collaborations (Denstadli et al., 2013; Faulconbridge et al., 2009; Poom et al., 2017). Research finds that some of their business travel might be substitutable by virtual communications. For instance, video conferencing works well for routine communications with internal partners and may replace intra-organizational managerial meetings (Arnfalk and Kogg, 2003; Denstadli et al., 2012; Poom et al., 2017). Research also suggests that video call is likely to substitute for long-distance or air travel because of their high cost-saving effects (Arnfalk and Kogg, 2003; Denstadli, 2004).

Besides the managers and executives, sales and service workers also travel often for

businesses (Arnfalk and Kogg, 2003). Sales and service workers communicate intensively with external partners, and they rely on face-to-face interactions for initiating and developing relationships (Arnfalk and Kogg, 2003; Thaichon et al., 2018). Online communication is regarded as ineffective for sales and service workers because relationship-building with clients needs more complex and delicate touches (Lian and Denstadli, 2004). Although technological advancements have increased the importance of the inside sales force over the years, they often complement the outside sales force rather than substitute it (Rapp et al., 2008; Thaichon et al., 2018).

2.2 The Gender Gap in Business Mobility

Business travel behavior also varies by gender of the workers. Traditionally, female workers are underrepresented among business travelers (Aguilera, 2008). Literature suggests that the women's disproportionately lower business mobility intertwines with the labor market outcomes. Namely, female workers' lower labor market outcomes result in lower business mobility, and female workers' lower business mobility results in lower labor market outcomes. The gender differences in working sectors and their hierarchical positions result in the gender gap in business mobility (Gustafson, 2006). For instance, females are more likely to take occupations with more routine work, which provides few opportunities for promotion (Brussevich et al., 2018). In addition, women's wages used to be lower than men's even after controlling for occupation, suggesting that they were less likely to promote to positions with discretionary power (Carrington and Troske, 1998; Macpherson and Hirsch, 1995; Petersen and Morgan, 1995). Such occupational choices and slower promotions may result in fewer business travel opportunities for female workers than their male counterparts. In other cases, women may intentionally opt-out of jobs or promotions that demand intensive business travel. As discussed earlier, high-profile positions often go hand in hand with commitments in long-distant business travel (Derry, 2002).

Female workers, especially working mothers, may also avoid high-profile jobs with intensive travel requirements because caring responsibility makes it difficult to accommodate such frequent needs of extended business travel. Indeed, family compositions also affect the business travel likelihood besides gender because the travel behavior of one household member is affected by other household members' needs (Gustafson, 2006; Jeong et al., 2013; Scheiner, 2014; Stewart and Donald, 2006). For example, in the U.S., women still spent much more unpaid work at home than males even in 2010; females spent about 4.3 hours of unpaid work per day, twice as much as males (ILO-OECD, 2019). Women also take more child-care activities than

men, such as escorting children (Han et al., 2019). Such high household responsibility also discourages women from searching for jobs that are not close to their homes, restricting women's job prospects (England, 1993). Kwan (1999) reported that women in the labor force tend to choose occupations with fewer business trips than men, reflecting the higher household responsibilities. Gustafson (2006) also found that the presence of partners and children affects business mobility differently between men and women; having children negatively affects travel likelihood for women, while it does not affect men's travel behavior.

The impact of information and communication technologies on the gender gap in business mobility is not easily predictable. On the one hand, technologies may increase the gender gap because it geographically extends the production and sales networks of businesses further and increases the demand for long-distance business travel. Empirical studies revealed that the child-rearing responsibility of working mothers might also discourage long-distance and overnight business travels. Historically, in the late 1980s, there was a significant gender gap in the likelihood of overnight business travel even after controlling for detailed job characteristics (Presser and Hermsen, 1996). In the late 1990s, women with children in dual-earner couples in the U.S. traveled significantly less, whereas no such pattern appeared among men (Roehling and Bultman, 2002). The paper also found that gender attitudes also affect the perception of business travel among family members; those with traditional gender attitudes satisfy their marriage more if men make business travel and women do not travel. Another research also confirmed that women with young children were significantly less likely to travel for business (Gustafson, 2006).

On the other hand, technologies may have narrowed the gender gap in business travel directly and indirectly, especially for working mothers with small children. For example, ICT may reduce overall business travel needs through virtual substitution. It may also help women promote to managerial positions because ICT allows for more flexible work schedules and locations (Perrons, 2003; Sowon et al., 2019). Empirically, research on academic workers with young children in the mid-2000s found many virtues of digital technologies in achieving work-life balance (Currie and Eveline, 2011). Moreover, a Swedish study also found that gender and the presence of children have no significant association with overnight work travel in the early 2000s (Bergström, 2010).

Furthermore, the impacts of ICT in narrowing the gender gap in business mobility may be heterogeneous by occupation. As discussed earlier, business travels' virtual substitutability varies significantly by occupation. For example, the gender gap in business mobility for sales and service females with small children may be challenging to narrow if frequent travel is persistently

required for relationship building with clients. Conversely, the gender gap may quickly shrink for managerial workers if their routine administrative meetings go virtual.

3. Data and Variables

For the analysis, we employ the U.S. National Household Travel Survey (NHTS) of 2001, 2009, and 2017. The NHTS provides detailed travel data for one observation day for each sample, including work-related business trips. As NHTS provides sampling weight, we apply the person weights for the following analysis. This study takes a broad definition of business travel: trips for work-related business purposes other than commuting. Thus, the trips include but are not limited to those for buying and delivering goods or services, meetings, door-to-door sales, site visits, or participating in conferences. Detailed trip purpose data of the NHTS specifically indicates trips for meetings in 2001 and 2009. However, we do not use this narrowly-defined trip category for two reasons. First, we would like to assess the overall increase/reduction in work-related business trips, which includes trips other than that for meetings (e.g., door-to-door sales, site visits for data collection, and goods and service deliveries). Second, the definition appears to be inconsistent across the years. The shares of the meeting trips among the work-related business trips were 10-15% in 2001 and 2009. But in 2017, the category's name changed from "attend business meeting/trip" to "work-related meeting/trip," and its share increased to 73%, which is unlikely to happen without changes in definition.

NHTS categorizes jobs into four occupational categories: (1) sales and service, (2) administrative and clerical, (3) manufacturing, construction, maintenance, and farming, and (4) professional and managerial. We focus on the first sales and service (SS) category and the last professional and managerial (PM) workers category because they often make work-related business trips. Another major category, manufacturing, construction, maintenance, and farming, was not included in the analysis because their work-related trips are unlikely to be replaced by virtual interactions. Sales and service workers may also deliver goods and on-site services; however, their jobs include relationship building with customers and outside sales activities, which technology can replace. Administrative and clerical workers are also excluded because their travel likelihood is low.

Our analysis considers the differences between internet-savvy and non-internet-savvy workers. We define internet-savvy as daily internet users and non-internet-savvy (or "non-savvy") as non-daily internet users. Due to data limitations, the intensity of internet usage is measured for

general purposes, including private and business use. Certainly, it would be more appropriate to measure internet usage frequency specifically at work, but such data is unavailable for 2009 and 2017. Yet, we believe our indicator is still helpful because internet usage is more likely to be distributed proportionally between work and non-work hours. Moreover, the internet was first introduced to workplaces in the earlier ICT adaptation stage due to limited infrastructure and high costs in the earlier years. Indeed, in 2001, 87% of workers who didn't access the internet at work were categorized as "non-savvy," and 63% of workplace internet users were classified as "internet-savvy."

For a robustness check of the internet-savvy effects, we tested two alternative measures of "internet-savvy." For 2001, we employed the "web use at work" (one if the person accessing the internet from the workplace, zero otherwise). Although it does not include the frequency of use, it measures whether the person used the internet at work. For 2017, we tested multi-media access to the internet to measure "internet-savvy." Namely, the daily usage of at least two devices from the following: pc, tablet, or smartphone. We assume that intensive internet users would need two types of devices. One is a smartphone or tablet for mobile access (e.g., location-free access to email and other data). The other is a PC or high-end tablet for intensive production processes (e.g., document processing, data collection and analysis, intensive communication that involves access to multiple documents/applications). The measure excludes light and casual tech users solely depending on smartphones for the "internet-savvy" category. It also excludes technology laggards who are reluctant to adopt mobile devices. Based on this stricter definition, 21.6% of workers are categorized as non-savvy, and 78.4% are considered internet-savvy.

Table 1 summarizes the demographic and socioeconomic compositions of all workers (left section) and work-related business trip makers (right). Each section consists of three columns that summarize the data for 2001, 2009, and 2017. Approximately 100,000,000 workers existed in those years, and five to ten percent of them made at least one work-related business trip on the observation day. Among all workers, 42.2% were internet-savvy in 2001, increasing to 68.4% in 2009 and 98.2% in 2017. Over the period, slightly more than half (54%) of workers were men. The proportions of workers with small children under five were approximately one-fifth in 2001, somewhat higher for men than women. The proportion gradually decreased to one-sixth for female workers in 2017, while it remained a little above one-fifth for male workers.

Work-related business trip makers were more likely to be male, non-Hispanic Whites, college graduates, and higher income. Male workers shared almost 70% of business travelers in

2001, which decreased to approximately 60% in 2017. Female workers with small children shared a substantially smaller proportion of the business travelers. Notably, in 2001, they shared only 5.2% of business travelers (one-sixth of female business travelers). Among male business travelers, the share of those with minor children is proportional to that of all workers. Professional and managerial workers took the largest share (more than 45%) among business travelers, followed by sales and service workers (20 to 25%). Manufacturing, construction, maintenance, and farming workers also took a non-negligible percentage of the business travelers because their job requires on-site goods/service deliveries by nature.

Figure 1 illustrates gender and family status among SS and PM workers between 23 and 69. The top segment shows the results for SS workers, and the bottom shows those for PM workers. The upper set of three bars illustrates all workers' gender and family status distribution in 2001, 2009, and 2017 (from top to bottom), and the lower set displays those of business travelers. The left parts (in dark solid blue and light striped blue) illustrate males, and the right ones (in pale yellow and dark dotted brown) show female workers. Dark colors are for those with small children under five years old, and light colors are for those without any minor children.

Gender distribution was almost equal for SS workers; however, female workers, particularly those with children, took a disproportionally smaller share among SS business travelers. In 2001, the women's share was only 30.5%, and women with children under five shared only 5.8% of SS business travelers. Conversely, many male SS workers with small children traveled; 18.0% of SS business travelers were men with minor children. The shares of female workers with and without children increased throughout the period, and in 2017, more than 40% of SS business travelers were female. The narrower gender gap was achieved by increasing travel likelihood among female PM workers without minor children: from 24.9% to 33.0% between 2001 and 2017. The percentage of female SS workers with children also increased to 8.3%, close to that of male workers with children (9.5%).

Women's proportion of PM workers was slightly smaller than men's (45% vs. 55%), but the gender gap was narrower among the PM workers than that of SS workers. In 2001, 36.7% of PM business travelers were females. The share increased steadily to 44.7% in 2017, becoming close to the gender share among all PM workers (47%). Like SS workers, the gap became narrower mainly because of the travel likelihood increase among female workers without minor children (30.6% to 36.5%). The probability of making business trips also increased among female PM workers with children under five. However, the increase was modest, and their share is still lower

than their male counterparts (8.2% vs. 11.3%).

4. The model

We employ a Probit model to estimate the probability of making business trips for SS workers and PM workers separately for each year.

$$Pr(BZtrip_{idt}=1 \mid X_{it}) = \Phi(X_{it},'\beta) \qquad \dots \ (1)$$

$$Pr(BZtrip_{idt}=0 \mid X_{it}) = 1 - \Phi(X_{it},'\beta)$$

The dependent variable $BZtrip_{idt}$ is a variable that indicates whether a worker i made any business trip d miles per day or longer on the observation day in NHTS year t (note that this is a repeated cross-sectional, not a panel dataset). $BZtrip_{idt}$ is equal to 1 if there is at least one trip and zero otherwise. Travel distance thresholds d are 10, 20, 30, 40, 50, 70, and 100 miles.

The set of independent variables X_{it} includes demographic characteristics, family characteristics, internet usage, location characteristics, and their interactions. The primary independent variable, gender, equals one if the person is female and zero otherwise. Internet-savvy equals one if internet usage is "daily" and zero otherwise. The small child categorical variable equals one if the person has a child between 0 and 5 years old. We also include age, household family income, and racial-ethnic groups as additional personal characteristics. Our analysis targets workers between the ages of 23 and 69. Indicator variables for non-Hispanic Whites, Afro-Americans, Asians, Hispanics, and others control racial-ethnic groups. The household family income is estimated (in logarithm) based on the median value of the income category range. Locational heterogeneity is controlled by indicator variables for four Census regions (Northeast, Midwest, South, and West) and urbanized area (*urban*=1 if the worker lives in an urbanized area, and 0 otherwise). Last, we address the differences between weekdays and weekends. The data analyses include all possible interactions between the primary variables of interest: female, internet-savvy, and having minor children under five.

5. Results

Since the model includes many interactions among key variables, we analyze primary factors' marginal effects rather than interpret the coefficients. The full regression results are available in the appendix.

5.1 SS Workers: Average Marginal Effects of Being Female, Having Small Children, and Being Internet Savvy

Tables 2 to 4 present the effective coefficients of the average marginal effect of being female, having children under five, and being internet savvy on the probability of making work-related business trips. In each table, the baseline results for 2001, 2009, and 2017 are shown from the top. The bottom two sets are the robustness check models using web use at work (for 2001) and multi-device users (for 2017). Each year, we estimate marginal effects on the likelihood of having daily business travel miles longer than specific miles. As distance thresholds of dependent variables, we use 10, 20, 30, 40, 50, 70, and 100 miles (from left to right). In some cases, marginal effects were not estimable (gray shaded areas) because few non-savvy business travelers were in the observation.

The narrowing gender gap in the business travel among SS workers

In 2001, female SS workers were less likely to make business trips 10+ miles per day, regardless of their internet familiarity and the existence of small children (Table 2). In addition, the gender gap was wider for internet-savvy workers with children. On average, internet-savvy female SS workers without small children were 5.9% less likely to make daily business travels 10+ miles than their male counterparts. The gender gap increased to 12% if they had small children under five. Among non-savvy SS workers with and without small children, the gender gaps in the likelihood were almost the same. Non-savvy female SS workers with no children were 6.8% less likely to make business trips 10+ miles per day than their male counterparts, and the gap was 6.4% for those with small children.

Notably, the gender gap was narrower for longer business trips. For instance, in 2001, the gap decreased from 12% to 4.1% in the likelihood of making business travels when we raised the travel distance threshold from 10 miles to 100 miles per day. Likewise, the gender gap became narrower for long-distance business travels among internet-savvy SS workers without small children; the gap was 2.2% for the travel 100+ miles per day. All the findings above are consistently observed in the robustness check model using web use at work.

In 2009, the gender gap persisted in the business travel likelihoods, but it was narrower than in 2001, especially for internet-savvy SS workers with small children. The average marginal effect

of being female on the probability of making business trips 10+ miles was 4.3% for internet-savvy SS workers with small children. It was only one-third of that in 2001, almost the same as for internet-savvy and non-savvy SS workers without minor children (4.4% and 4.6%, respectively). Among non-savvy SS workers with small children, there were no significant differences in the likelihood of making business travel 10 miles or longer. The marginal gender effects became not estimatable for non-savvy business travelers with small children who traveled 70 miles or more because all the working mothers who traveled 70+ miles were internet-savvy.

By 2017, the gender gap became almost unobservable, except for the probability of making business trips 20 miles or longer or 30 miles or longer among internet-savvy SS workers without children under five. Even for these categories, the marginal effect was smaller than in the earlier years; 0.99% for 20+ miles and 0.83% for 30+ miles. In 2017, the gender gap was not estimatable because no one remained non-savvy among SS business travelers.

When we employ a more strict measure for "internet-savvy," being female negatively is associated with business travel likelihood for mid-distance travels of non-savvy workers without small children.

The disappearing parenthood penalty in the long-distance business travel among SS workers

In 2001, having a small child discouraged female SS workers from making mid-to-long-distance trips for both internet-savvy and non-savvy workers (Table 3, for both baseline model and robustness check model for 2001). Among non-savvy female SS workers, having small children was associated with a 0.83% lower probability of making 40 miles or longer business trips per day. The parenthood penalty was more substantial for internet-savvy female SS workers than non-savvy females; having small children under age five was associated with a 2.2% lower probability of making business trips 40+ miles per day. Contrary, having a small child seemed to have no significant impact on traveling for internet-savvy and non-savvy female SS workers when relatively trips shorter than 20 miles were included in the analysis.

Among male SS workers, having small children had little effect on the probability of making business trips in 2001. Specifically, for the non-savvy male SS workers, there is no significant difference in the travel probability associated with the presence of a small child regardless of the distance thresholds. The association was also insignificant for the likelihood of making business trips 30+ miles among internet-savvy male SS workers. Interestingly, having small children was positively associated with the probability of making business trips (10+ or 20+ miles) in 2001 for

internet-savvy male SS workers. It may be because of the traditional gender division of labor; if mothers of small children reduced or stopped working while raising minor children, their partners might have worked harder to make up for the lost household income.

The parenthood penalty became weaker and eventually became invisible. By 2009, the negative associations between the business travel probability and having minor children remained visible only for long-distance trips (Table 3). Internet-savvy female SS workers with pre-school-age children were 0.45% less likely to travel 100 miles or longer for business. Interestingly, a weak parenthood penalty appeared for male workers for long-distance travel. Internet-savvy male SS workers with small children were 1.7% less likely to make business trips of 70+ miles.

In 2017, the parenthood penalties became insignificant for most business trips made by internet-savvy SS workers. In the baseline model, the marginal effects were not estimable for non-savvy SS workers in 2017 because there were virtually no non-savvy SS business travelers regardless of gender. In the robustness check model with the multi-device users, the parenthood penalty weakly appears for non-savvy males (10+ miles or 40+ miles) or tech-savvy females (50+ miles). However, the estimation is less reliable because the coefficients easily become insignificant when the distance threshold changes.

Being internet-savvy was associated with a higher probability of making business trips for SS females without small children

Being internet-savvy was almost always associated with a higher probability of making business trips for female SS workers without small children. Specifically, in 2001, being internet-savvy was associated with a 1.9% higher chance of making business trips 20 miles or longer per day for female SS workers without children under five. The model with web use at work also suggests that, in 2001, internet familiarity was associated with higher travel likelihood for women without small children. Likewise, in 2009, it was associated with a 2.3% higher chance for female SS workers without children. Although the magnitude of the marginal effects became smaller as we limited the observations to long-distance business travels, it was persistently positive and significant in 2001 and 2009. In 2017, no non-savvy SS worker traveled 40 miles or longer for business, and the effect became not estimable beyond that point. Yet, in the analysis of business travels 10+ miles, 20+ miles, or 30+ miles, the internet-savvy effect remained positive and significant in 2017. In addition, the robustness check model also suggests that being tech-savvy is associated with a higher chance of business travel for females without small children.

Contrary to those without children, the marginal effect of being internet-savvy was insignificant for female SS workers with pre-school-age children. The insignificance may be caused by the suppressed travel among working mothers or by the prevalence of internet usage among working mothers. We will take a closer look in the prediction section.

Among male SS workers, being internet savvy had little association with the probability of making business trips in 2001 and 2009. Namely, the marginal effect of being internet-savvy was insignificant for those with and without small children, regardless of the travel distance thresholds. In 2017, all the male business travelers with minor children became internet-savvy in the baseline model, and the average marginal effects became not estimable. Even with the stricter definition of "internet-savvy," it is mostly insignificant except for the one for 20+ mile business travel. Among male SS workers without children under five, a few non-savvy business travelers existed in 2017. Yet, these non-savvy male SS workers did not make business travels 30+ miles per day, and they were 3.4% less likely to make business travel 10+ miles than their internet-savvy counterparts.

Overall, the results suggest the disappearing gender gap and parenthood penalty in business travel likelihood, even for long-distance ones. Internet usage had positive associations with the travel likelihoods for female SS workers without small children, suggesting that being internet savvy gave them more business opportunities. However, for those with children under five, being internet savvy did not have significant effects in 2001 and 2009. In 2017, the association with internet usage became not estimable if the default definition of internet-savviness is used. All the business-traveler mothers and fathers of pre-school-age children came to use the internet daily, and need more strict definitions to address the intensity of internet usage.

5.2 PM Workers: Average Marginal Effects of Being Female, Having a Small Child, and Internet Savvy

The gender gap in business travel among PM workers had shrunk but persistently existed in 2017

Similarly to SS workers, in 2001, all the female PM workers were less likely to make business trips 10 miles or longer per day than their male counterparts, although the differences are minor than SS workers (Table 5, both baseline and robustness check models for 2001). Among

internet-savvy PM workers, the gender gap was slightly wider for those with children under five than those without. For instance, internet-savvy female PM workers with small children were 3.9% less likely to make business travels 10+ miles than their male counterparts, which is twice as high as the gender gap for those without children. Among non-savvy PM workers, the gender gaps in the likelihood were only slightly greater for those without minor children than those with children. Specifically, non-savvy female PM workers without pre-school-age children were 6.2% less likely to make business trips 10 miles or longer per day than their male counterparts, and the gap was 5.1% for those with small children.

The gender gap among PM workers was smaller for longer business trips. For instance, in 2001, the gap for the internet-savvy PM worker with small children decreased from 3.9% to 1.4% when we raised the travel distance threshold from 10 miles to 100 miles per day. Likewise, the gender gap became narrower for long-distance business travels among internet-savvy PM workers without small children, and non-savvy PM workers with and without children in 2001.

In 2009, the average marginal effect of being female became smaller than in 2001, primarily for internet-savvy SS workers with small children. The average marginal effect of being female became insignificant for internet-savvy female SS workers with small children, regardless of the distance thresholds. In comparison, internet-savvy female PM workers without small children were less likely to make business travels than their male counterparts, regardless of the distance threshold. For instance, internet-savvy female workers without small children were 2.2% less likely to make business travel 10+ miles per day than their male counterparts. The gender gap was narrower again for long-distance business travel. When we raised the threshold to 100 miles, the gender gap dropped from 2.2% to 0.72%.

As internet usage became essential for business, only a few PM workers remained non-savvy in 2009. Among the remaining non-savvy female PM workers, the gender gap in the business travel likelihood was wider for those without minor children than those with small children. Non-savvy female PM workers without minor children were 2.5% less likely to make business travel of 70+ miles per day than their male counterparts. In contrast, those with children were 0.4% less likely to travel 70+ miles than their male counterparts.

By 2017, the gender gap was no longer estimable for non-savvy workers in the baseline model because there were no non-savvy female PM workers. When we used multi-device daily users as the tech-savvy definition, the gender differences were insignificant at a 95% level for all the cases. Among internet-savvy PM workers, the gender gap persisted, particularly for long-

distance travel, albeit it became smaller than before. Internet-savvy female PM workers without children were 0.34% less likely to travel 100+ miles for business per day than their male counterparts and remained significant at a 95% level. The marginal effect of being female for internet-savvy female PM workers with children was 0.72% and significant, more substantial than the corresponding effect for those without small children. These negative associations are consistently found for the robustness check model.

The parenthood penalty was visible among male and female non-savvy PM workers in 2009 and for mothers' long-distance business trips in 2001 and 2017

Unlike SS workers, having a small child did not discourage female PM workers from making short-to-mid-distance trips in 2001, regardless of the internet savviness (Table 6). For long-distance trips of 100 miles or longer, internet-savvy and non-savvy female PM workers traveled slightly less than those without small children. Namely, internet-savvy PM working mothers with children under five were 0.7% less likely to travel 100 miles or longer per day for business than their no-minor counterparts. In addition, non-savvy male PM workers with small children were less likely to make long-distance business trips (70 miles or longer per day) than those without children. Such parenthood penalty for long-distance travel in 2001 is also found for the web use at work model.

Interestingly, the parenthood penalty became visible for non-savvy male and female PM workers in 2009 for almost all business trips. Among internet non-savvy female PM workers, having a small child was associated with a 2.9% lower probability of 10 miles or longer business trips. For non-savvy male workers, the child effect is insignificant when the threshold is 10 miles; however, it became significant for business travel of 20+ miles. Non-savvy male PM workers with a minor child were 3.6% less likely to make business travel 20 miles or longer than those without small children. Contrary, the parenthood penalty was not visible for the internet-savvy male and female PM workers in 2009.

In 2017, no PM workers with small children remained non-savvy in the baseline model, and thus, the parenthood penalty is not estimable for non-savvy workers. When we use the stricter definition of internet savviness, the negative association appears for non-savvy male workers who traveled 70+ miles. Among internet-savvy workers, the child effect was insignificant for most trips, except for 70+ or 100+ miles of travel made by females. The findings are consistent between the baseline and the robustness check models. In the baseline model, the marginal effect of

children was 0.35% for female PM workers' business travel 70+ miles.

Being internet-savvy was associated with a higher probability of making business trips 50+ miles for female PM workers in 2001 and 2009

Being internet-savvy was positively associated with a higher probability of making business trips for female PM workers if the association was significant, regardless of the definitions of internet-savviness (Table 7). Moreover, the association is more likely to be evident for long-distance business travel than for overall travel. For example, in 2001, being internet-savvy was associated with a 0.72% higher chance of making business trips 50+ miles per day for female PM workers without children. In 2009, internet usage had a significant positive association with travel likelihoods of working mothers, even for short-to-mid-distance business travels. For instance, internet-savvy female PM workers with small children traveled 2.8% more likely to travel 10 miles or longer for business than their non-savvy counterparts. The marginal effect is consistently positive and significant for long-distance travel, wherever estimatable.

By 2017, almost all the PM workers became internet-savvy in the baseline definition, and the marginal effect of internet usage was estimatable only for males without small children. For these people, it had a positive association with the chance of business travel 30 miles or longer. That is, internet-savvy male PM workers without children were 1.4% more likely to travel for business 30 miles or longer per day than their non-savvy counterparts. When we employ multi-device users for tech-savvy definition, positive associations are significant for short-to-mid-distance business trips of male and female workers without children under five, or for 50+ miles business travels for male PM workers with small children.

Interestingly, being internet-savvy was negatively associated with the travel likelihood for male PM workers without minor children in 2001, when relatively short-distance trips were included. As suggested in the literature, substitution effects might have been evident for frequent short-to-mid-distance trips. However, the association was insignificant when we employ web use at work as the definition of internet-savvy.

5.3 Conditional prediction of business travel likelihoods

To better understand the inter-group differences and over-the-year differences in the business travel likelihood, we predicted the conditional probability of making business travel

longer than certain miles. Specifically, we calculate the travel likelihood for non-Hispanic white SS or PM workers at 32 years old each year and compare it by gender, internet savviness, and the presence of small children under five. We also compare the probability by different distance thresholds: 10, 20, 30, 40, 50, 70, and 100 miles per day. We also assume they had a bachelor's degree, have a household income of $80,000, and live in the Northeast region. We do not include racial-ethnic minorities in the analysis because their sample size is small, and racial/ethnic variations were often insignificant.

Figures 2 and 3 present the predicted probabilities for SS and PM workers, respectively. Detailed values are available in the Appendix tables. In each figure, results for 2001, 2009, and 2017 are shown from top to bottom. The graphs on the left illustrate the outcomes for workers without small children, and the right ones are for those with small children under five. In each chart, the predicted travel probabilities for 10 miles or longer per day are displayed far left, followed by the estimates for longer daily travel distance thresholds. The set of columns consists of four predicted values. From left to right, they represent non-savvy males (hatched light blue columns), internet-savvy males (solid light blue columns), non-savvy females (hatched orange columns), and internet-savvy females (solid dark brown columns). Columns may not appear for the cases the probabilities are not estimable.

In 2001, a notable gender gap in the travel likelihood existed among SS workers, particularly if they had small children

In 2001, the hypothetical female SS workers were much less likely to make business travel than their male counterparts, and the gap was significantly wide for those with children under five. Among those without small children, the travel likelihood for the female SS workers was approximately half of the male SS workers with the same sociodemographic characteristics (Figure 2, top right). For example, the probability of making business trips 10 miles or longer per day was 6.46% for the hypothesized internet-savvy female, while it was 12.7% for the internet-savvy male. For business travels 70+ miles per day, 2.06% of the internet-savvy females were predicted to make such trips, while the probability is 5.29% for their male counterparts. The gender gap was slightly wider for non-savvy workers without children in 2001. It is because non-savvy males traveled more likely than internet-savvy males, while non-savvy females traveled less likely than internet-savvy females. Non-savvy female SS workers with the assigned characteristics had almost no chance (0.23%) of making business travel 100+ miles per day.

The presence of small children strongly discouraged mid-to-long business travel among SS workers in 2001, while the difference between women with and without small children was minor when shorter trips were included. When all the business travel 10+ miles was included in the analysis, 5.21% of the internet-savvy female SS workers with children would travel, while the chance was 6.46% of those without children (Figure 1, top). In contrast, for business travel 50 miles or longer, the travel likelihood for the internet-savvy females with small children was 0.36% and not significantly different from zero, which was substantially lower than the chance for those without minor children (2.72%). The probability is even lower for the non-savvy women with children under five. The likelihood of making business travel 10 miles or longer was 3.62% for the non-savvy female SS workers with minor children. It became not significantly different from zero for 20 miles or longer business travel.

Among the hypothesized internet-savvy male SS workers, having small children was associated with a higher chance of making business trips (Figure 2, top). For example, almost one-fifth of the internet-savvy male SS workers with children under five were estimated to travel, which is a 1.5 times higher probability than those without children. Even for long-distance travel of 100+ miles, the travel likelihood of the internet-savvy male SS workers with minor children remained higher than those without. Such tendency is, in contrast, not observed among the non-savvy male SS workers with the same sociodemographic characteristics. The probability of making business travel was almost the same between the non-savvy male SS workers with and without minor children.

As predicted in the model, the gender gap and the parenthood penalty diminished among SS workers. The primary reason for the shrink was the decline in the travel probability among males between 2001 and 2017

The business travel likelihood in 2009 decreased significantly for the male SS workers with assumed characteristics, particularly for those with pre-school-age children. Contrary, the probability did not change much for the female SS workers. As a result, the gender gap narrowed, particularly among those with small children. For instance, among the internet-savvy SS workers with small children, males' travel likelihood of 10 miles or longer became less than half between 2001 and 2009, from 19.3% to 9.25%. The chance for the hypothesized females, in contrast, decreased more moderately by a quarter, from 5.21% to 3.92% (Fig. 2, right). The same is observed for long-distance business travels. Although the internet-savvy male SS workers with

children reduced their predicted probability of making business travel 50+ miles substantially (from 10.3% to 4.27%), the chance slightly increased for females with small children (from 0.36% to 1.33%).

Interestingly, the hypothesized non-savvy female SS workers with and without children are predicted to have traveled more than their savvy counterparts in 2009. However, the prediction is unstable, and the expected probabilities beyond the threshold of 20+ miles are not significantly different from zero. As discussed earlier, remaining non-savvy was already rare among the working mother business travelers.

In 2017, the gender gap narrowed even further as the estimated travel likelihood among the hypothesized male SS workers decreased. First, the probability of business travel for the non-savvy SS workers was virtually zero for all business trips, regardless of gender or the presence of minor children (Fig. 2, bottom). Second, the travel likelihood of the internet-savvy male SS workers became as low as that of females, especially for the short business trips. Among those with a small child, the predicted probabilities of making business trips of 10+ miles were 6.96% for males and 6.15% for females. Third, the parenthood penalty also disappeared in 2017 for short-distance business travel, as travel likelihood became higher for internet-savvy female SS workers with children under five. For example, the chance of business travel 10+ miles increased from 3.92% to 6.15% between 2009 and 2017 for the hypothesized females with small children. In contrast, the predicted probabilities for those without minor children was 4.83% in 2017, lower than the figures for their with-children counterparts.

The gender gap among internet-savvy PM workers was narrower than that of internet-savvy SS workers in 2001, but it persisted even in 2017 for long-distance business travel

In 2001, the gender gap existed but was narrower for PM workers than for SS workers, particularly among internet-savvy ones (Figures 2 and 3, top). For instance, in 2001, the predicted probability of business travel of 10+ miles for internet-savvy female PM workers without children under five was 5.09%, which was three-quarters of their male counterparts. Even among those with small children, the predicted probability for the internet-savvy female PM workers was half of their male counterparts. The gender gap among PM workers was estimated to be more significant for long-distance business travel; however, it is still thinner than that of SS workers'.

In contrast, the gap between male and female PM workers was more evident among non-savvy PM workers. Specifically, the estimated travel probability of 10 miles or longer for the non-

savvy female PM workers with minor children was 2.97%, less than four-tenth of their male counterparts (7.54%). The greater gender gap among non-savvy workers than internet-savvy ones is partly caused by the higher travel likelihood for non-savvy male workers than their internet-savvy counterparts. Simultaneously, non-savvy female workers were less likely to travel than their internet-savvy counterparts, widening the gap even further.

In 2009, the gender gap narrowed substantially among internet-savvy PM workers with children under five, primarily because travel increased among internet-savvy working mothers. For example, the chance of making business travel 10+ miles increased to 6.20% for the hypothesized internet-savvy females with children in 2009 (vs. 3.77% in 2001). In contrast, the predicted probability remained almost the same among their male counterpart (7.28% in 2001 and 7.49% in 2009). Even for long-distance business travel, the likelihood slightly increased for internet-savvy female workers with young children (from 0.70% to 1.04% for 50 miles or longer). In contrast, it decreased for their male counterparts (from 2.12% to 1.72% for 50+ miles of business travel).

The gender gap remained small but persisted, particularly for long-distance trips in 2017. As the travel likelihood dropped substantially, only 3% of the internet-savvy males with and without children were predicted to travel 10+ miles in 2017. Internet-savvy female workers were also much less likely to travel than in 2009, approximately 2.5% for both with and without children. For long-distance travel over 50 miles per day, 1.06% and 1.35% of male PM workers with and without children were estimated to travel. The corresponding likelihood is much lower for females with and without children, 0.62% and 0.42%, respectively. Moreover, the estimated probability for females with children was not significantly zero.

The presence of a small child did not discourage internet-savvy PM females from making short-to-mid-distance business trips in 2009 and 2017.

For the hypothesized internet-savvy female PM workers with pre-school-age children, the presence of a small child discouraged mid-to-long-distance business travel in 2001, while it did not show negative associations in 2009 and 2017 (Figure 3). Specifically, in 2001, 3.77% of the internet-savvy female PM workers with small children traveled at least 10 miles per day for business, which is three-quarters of those without children. The ratio of the travel likelihood between with became lower as the distance threshold increased, a half for 50+ miles (0.70% vs. 1.35%) and one third for 100+ miles (0.69% vs. 0.23%). The finding suggests that the parental

penalty was more substantial for long-distance business travel than for short-to-mid-distance one.

In 2009, the parenthood penalty disappeared for internet-savvy female PM workers. Among the hypothesized internet-savvy female workers, 6.20% of the females were predicted to make business trips of 10 miles or more, which is higher than those without children (5.47%). Women with minor children were also estimated to travel as much as those without for long-distance business travel. For instance, 1.04% of females with children were predicted to make business travel of 50+ miles, and the probability was 0.79% for those without children. Among internet-savvy PM males, those with children traveled slightly less than those without in 2009. However, the difference was minor; 7.49% compared to 8.04% for business travel of 10+ miles, and 0.42% compared to 0.51% for business travel of 100 + miles.

The parenthood penalty was more severer for non-savvy male and female PM workers with small children than for internet-savvy ones in 2009 (Figure 3, middle). The predicted probability for the non-savvy female PM workers with children under five who traveled 20+ miles was 0.59% and not significantly different from zero. In contrast, the likelihood for those without children was 3.54%. Non-savvy males with young children were also less likely to travel than those without. For business travel 20+ miles, travel likelihood was 2.87% for those with children, whereas the probability almost doubles for those without. This parenthood penalty seems to become stronger as the distance threshold increases. For business travel 40+ miles, the likelihood became less than 0.5% and not significantly zero for non-savvy males and females with children.

In 2017, the parenthood penalty remained negligible for short-to-mid-distance trips; however, it remained among internet-savvy females for business travel 40+ miles. Specifically, the likelihood for women with pre-school-age children was the same as those without for business travels of 10 miles or longer. However, the chance lowered more substantially for women with children than for those without beyond business travel of 30+ miles. For business travel 50+ miles, the travel likelihood became 0.42%, two-thirds of the probability for those without children, and it was not significantly different from zero. Such tendency is not observed for internet-savvy male PM workers. Internet-savvy males with minor children were more likely to travel than those without, regardless of the distance thresholds. Last, the analysis for non-savvy is not feasible because all young PM workers with small children were internet-savvy (Figure 2, bottom).

6. Conclusion

Historically, business mobility has been lower for women, particularly those with minor children.

The space-temporal constraints of workers with care responsibility interwind with job choice and promotion, resulting in the gender gap and parenthood penalties in business mobility. Our study confirms the significant gender gap and parenthood penalties among SS and PM workers in 2001, and they vary widely by occupation and internet familiarity. For instance, being female had a strikingly negative association with women's business mobility for SS workers in 2001. In addition, having children under five also had a significant negative association with the travel likelihood of female SS workers in 2001, while it had a positive association with male SS workers' travel probability in that year. The negative associations with being female or having small children were relatively modest among PM workers in 2001.

The gender gap and parenthood penalties shrank between 2001 and 2017, primarily through reductions in the travel likelihood among male workers. Working mothers' increase in travel likelihood also narrowed the gender gap. However, the motherhood penalty (i.e., women-specific parenthood penalty) in business mobility remained for long-distance business travel for both SS and PM workers.

Internet familiarity is associated with a narrower gender gap in business travels, particularly when they don't have small children. Being internet savvy is associated with a narrower gender gap through a higher business travel probability for women and a lower travel likelihood for men. Female workers traveled more if they were familiar with the internet because internet skill was the minimum requirement for female workers having business travel opportunities even in 2001. Simultaneously, internet-savvy male workers with small children lowered the probability of making business trips, possibly by substituting their business travels with virtual interactions. By 2009, when internet usage became the norm, business travel needs for SS workers had decreased substantially. PM workers kept traveling in 2009; however, their travel needs had also significantly declined by 2017.

Our research has limitations due to the data availability. First, this research cannot address causal relationships between the gender gap in business mobility and the gender gap in the labor market. The gender gap in the labor market may result in a disparity in business mobility. However, simultaneously, lower business mobility of female workers may lead to the gender gap and parenthood penalties in the labor market. Our model does not control the endogeneity, and thus, we cannot conclude whether the narrower gender gap in business mobility means more equal outcomes in the labor market. Second, the lack of data availability for trip purposes makes it difficult to determine why and how the travel necessities have shrunk. Third, the unavailability

of internet usage's objectives makes the "internet-savvy" variable less reliable. Although our internet-savvy indicator had high correlations with internet usage at work in 2001, its validity after the widespread of the internet (in 2009 and 2017) is unknown.

Despite such limitations, our results imply that the gender gap in business mobilities has narrowed between 2001 and 2017. One of the main reasons was the reduction in travel needs in the intra-regional work-related business travel. Advancements in ICT may have contributed to the trend by eliminating travel needs through digital replacements of communications. News articles report working mothers' difficulties in managing work and child-rearing responsibilities during the COVID lock-down periods. However, further digital transformation in the post-COVID era may reduce the gender gap and parenthood penalties in businesses.

REFERENCE:

Aguilera, A., 2008. Business travel and mobile workers. Transp. Res. Part A Policy Pract. 42, 1109–1116. https://doi.org/10.1016/j.tra.2008.03.005

Arnfalk, P., Kogg, B., 2003. Service transformation - Managing a shift from business travel to virtual meetings. J. Clean. Prod. 11, 859–872. https://doi.org/10.1016/S0959-6526(02)00158-0

Beaverstock, J. V., Derudder, B., Faulconbridge, J.R., Witlox, F., 2010. International business travel and the global economy: Setting the context, in: Beaverstock, J. V., Derudder, B., Faulconbridge, J.R., Witlox, F. (Eds.), International Business Travel in the Global Economy. Ashgate Publishing, Farnham, pp. 1–7.

Bergström, G., 2010. Consequences of overnight work travel for personal social relations: Problems, promises, and further repercussions. Mobilities 5, 369–386. https://doi.org/10.1080/17450101.2010.494841

Brussevich, M., Dabla-Norris, E., Kamunge, C., Karnane, P., Khalid, S., Kochhar, K., 2018. Gender, Technology, and the Future of Work (No. 18/07), IMF Staff Discussion Note. Washington, DC.

Carrington, W.J., Troske, K.R., 1998. Interfirm segregation and the black/white wage gap. J. Labor Econ. 16, 231–260. https://doi.org/10.1086/209888

Claffy, K.C., Clark, D.D., Bauer, S., Dhamdhere, A., 2020. Policy challenges in mapping Internet interdomain congestion. J. Inf. Policy 10, 1–44. https://doi.org/10.5325/JINFOPOLI.10.2020.0001

Collins, D., Tisdell, C., 2002. Gender and differences in travel life cycles. J. Travel Res. 41, 133–143. https://doi.org/10.1177/004728702237413

Currie, J., Eveline, J., 2011. E-technology and work/life balance for academics with young children. High. Educ. 62, 533–550. https://doi.org/10.1007/s10734-010-9404-9

Daft, R.L., Lengel, R.H., 1984. Information Richness: A New Approach to Managerial behaviour and Organizational Design. Res. Organ. Behav. 6, 191–233.

Denstadli, J.M., 2004. Impacts of videoconferencing on business travel: the Norwegian experience. J. Air Transp. Manag. 10, 371–376. https://doi.org/10.1016/J.JAIRTRAMAN.2004.06.003

Denstadli, J.M., Gripsrud, M., Hjorthol, R., Julsrud, T.E., 2013. Videoconferencing

and business air travel: Do new technologies produce new interaction patterns? Transp. Res. Part C Emerg. Technol. 29, 1–13. https://doi.org/10.1016/j.trc.2012.12.009

Denstadli, J.M., Julsrud, T.E., Hjorthol, R.J., 2012. Videoconferencing as a mode of communication: A comparative study of the use of Videoconferencing and face-to-face meetings. J. Bus. Tech. Commun. 26, 65–91. https://doi.org/10.1177/1050651911421125

Derry, R., 2002. Book Review: Unbending Gender: Why Family and Work Conflict and What to Do about It by Joan Williams; Not Guilty! The Good News for Working Mothers by Betty Holcomb; Mother Troubles: Rethinking Contemporary Maternal Dilemmas by Julia E. NWSA J. 14, 221–225. https://doi.org/10.2979/nws.2002.14.2.221

England, K.V.L., 1993. Suburban Pink Collar Ghettos : The Spatial Entrapment of Women? Ann. Assoc. Am. Geogr. 83, 225–242.

Faulconbridge, J.R., Beaverstock, J. V., Derudder, B., Witlox, F., 2009. Corporate ecologies of business travel in professional service firms: Working towards a research agenda. Eur. Urban Reg. Stud. 16, 295–308. https://doi.org/10.1177/0969776409104694

Faulconbridge, J.R., Jones, I., Marsden, G., Anable, J., 2020. Work, ICT and travel in multinational corporations: the synthetic work mobility situation. New Technol. Work Employ. 35, 195–214. https://doi.org/10.1111/ntwe.12162

Frändberg, L., Vilhelmson, B., 2003. Personal mobility: A corporeal dimension of transnationalisation. The case of long-distance travel from Sweden. Environ. Plan. A 35, 1751–1768. https://doi.org/10.1068/a35315

Gustafson, P., 2006. Work-related travel, gender and family obligations. Work. Employ. Soc. 20, 513–530. https://doi.org/10.1177/0950017006066999

Hacker, J., Vom Brocke, J., Handali, J., Otto, M., Schneider, J., 2020. Virtually in this together-how web-conferencing systems enabled a new virtual togetherness during the COVID-19 crisis. Eur. J. Inf. Syst. 29, 563–584. https://doi.org/10.1080/0960085X.2020.1814680

Han, B., Kim, J., Timmermans, H., 2019. Task allocation and gender roles in dual earner households: The issue of escorting children. Travel Behav. Soc. 14, 11–20. https://doi.org/10.1016/j.tbs.2018.09.001

Haynes, P., 2010. Information and Communication Technology and International Business Travel: Mobility Allies. Mobilities 5, 547–564.

ILO-OECD, 2019. Women at Work in G20 countries: Progress and policy action. Int. Labour Organ.

Jeong, Y.J., Zvonkovic, A.M., Sano, Y., Acock, A.C., 2013. The occurrence and frequency of overnight job travel in the USA. Work. Employ. Soc. 27, 138–152. https://doi.org/10.1177/0950017012460328

Kwan, M.P., 1999. Gender, the home-work link, and space-time patterns of nonemployment activities. Econ. Geogr. 75, 370–394. https://doi.org/10.1111/j.1944-8287.1999.tb00126.x

Lian, J.I., Denstadli, J.M., 2004. Norwegian business air travel-segments and trends. J. Air Transp. Manag. 10, 109–118. https://doi.org/10.1016/j.jairtraman.2003.08.001

Macpherson, D.A., Hirsch, B.T., 1995. Wages and Gender Composition: Why do Women's Jobs Pay Less? J. Labor Econ. 13, 426–471.

Magnusson, C., 2010. Why is there a gender wage gap according to occupational prestige?: An analysis of the gender wage gap by occupational prestige and family obligations in Sweden. Acta Sociol. 53, 99–117. https://doi.org/10.1177/0001699310365627

McGuckin, N., Fucci, A., 2018. Summary of Travel Trends: 2017 National Household Travel Survey. Washington, DC, DC.

Mokhtarian, P.L., 2009. If Telecommunication is Such a Good Substitute for Travel,

Why Does Congestion Continue to Get Worse? Transp. Lett. 1, 1–17.

Oxford Economics USA, 2009. The return on investment of U.S. business travel. Washington, DC.

Perrons, D., 2003. The new economy and the work-life balance: Conceptual explorations and a case study of new media. Gender, Work Organ. 10, 65–93. https://doi.org/10.1111/1468-0432.00004

Petersen, T., Morgan, L., 1995. Separate and Unequal: Occupation-Establishment Sex Segregation and the Gender Wage Gap. Am. J. Sociol. 101, 329–365.

Poom, A., Orru, K., Ahas, R., 2017. The carbon footprint of business travel in the knowledge-intensive service sector. Transp. Res. Part D Transp. Environ. 50, 292–304. https://doi.org/10.1016/J.TRD.2016.11.014

Presser, H.B., Hermsen, J.M., 1996. Gender Differences in the Determinants of Work-Related Overnight Travel among Employed Americans. Work Occup. 23, 87–115.

Rapp, A., Agnihotri, R., Forbes, L., 2008. The sales force technology-performance chain: The role of adaptive selling and effort. J. Pers. Sell. Sales Manag. 28, 335–350. https://doi.org/10.2753/PSS0885-3134280401

Roby, H., 2014. Understanding the development of business travel policies: Reducing business travel, motivations and barriers. Transp. Res. Part A Policy Pract. 69, 20–35. https://doi.org/10.1016/j.tra.2014.08.022

Roehling, P. V., Bultman, M., 2002. Does absence make the heart grow fonder work-related travel and marital satisfaction. Sex Roles 46, 279–293. https://doi.org/10.1023/A:1020272428817

Salomon, I., 1986. Telecommunications and travel relationships: a review. Transp. Res. Part A Gen. 20, 223–238. https://doi.org/10.1016/0191-2607(86)90096-8

Scheiner, J., 2014. The gendered complexity of daily life: Effects of life-course events on changes in activity entropy and tour complexity over time. Travel Behav. Soc. 1, 91–105. https://doi.org/10.1016/j.tbs.2014.04.001

Schwab, K., Crotti, R., Geiger, T., Ratcheva, V., World Economic Forum., 2019. Global gender gap report 2020 insight report. World Economic Forum.

Sowon, K., Sikhwari, O., Nyemba-Mudenda, M., Chigona, W., 2019. Smartphone paradoxes in working mothers' pursuit of work-life balance. Commun. Comput. Inf. Sci. 933, 94–106. https://doi.org/10.1007/978-3-030-11235-6_7

Stewart, M., Donald, F.M., 2006. Spouses' experiences of their partners' absences due to frequent business travel. South African J. Psychol. 36, 103–125. https://doi.org/10.1177/008124630603600107

Thaichon, P., Surachartkumtonkun, J., Quach, S., Weaven, S., Palmatier, R.W., 2018. Hybrid sales structures in the age of e-commerce. J. Pers. Sell. Sales Manag. 38, 277–302. https://doi.org/10.1080/08853134.2018.1441718

Wickham, J., Vecchi, A., 2008. Local firms and global reach: Business air travel and the Irish software cluster. Eur. Plan. Stud. 16, 693–710. https://doi.org/10.1080/09654310802049315

TABLES

Table 1. Descriptive Statistics of All Workers and Business Trip Makers

	All workers			Business Travelers		
	2001	2009	2017	2001	2009	2017
Obs.	63,313	98,580	87,635	4,569	10,280	4,885
Population	106,243,884	103,460,131	104,906,728	7,828,717	10,129,114	5,236,333
Internet Savvy	42.2%	68.4%	98.2%	47.1%	72.3%	99.4%
Avg. Age	41.3	44.1	43.1	42.7	45.2	44.8
Gender and Child						
M no Child U5	41.1%	41.4%	43.0%	52.9%	50.2%	48.0%
M w/ Child U5	12.7%	12.6%	11.2%	15.7%	13.4%	10.9%
F no Child U5	36.8%	38.0%	38.2%	26.3%	30.5%	34.4%
F w/ Child U5	9.4%	8.0%	7.7%	5.2%	5.9%	6.8%
Racial Ethnic Mix						
Non-Hsp White	72.6%	71.3%	65.2%	76.4%	79.6%	72.9%
Afro American	10.8%	10.1%	10.5%	9.4%	6.3%	8.3%
Asian	2.5%	3.1%	5.1%	1.7%	1.9%	4.6%
Hisp/Latino	11.8%	13.3%	1.6%	9.3%	9.6%	11.0%
Others	2.3%	2.2%	3.5%	3.2%	2.7%	3.2%
College Degree	35.5%	41.5%	51.2%	41.4%	48.6%	62.0%
HH Fam Income	58,059	66,464	89,108	62,669	70,818	100,252
Urban	78.8%	76.1%	84.3%	76.4%	69.3%	84.6%
Sales & Service	23.4%	25.9%	21.8%	25.2%	26.1%	21.0%
Adm. & Clerical.	11.5%	10.6%	11.0%	5.2%	5.6%	7.1%
Manf., Const., etc.	19.2%	17.5%	15.1%	20.2%	19.8%	14.4%
Professional	40.7%	44.2%	51.9%	45.8%	46.9%	57.4%
Other / Unknown	5.3%	1.7%	0.2%	3.5%	1.6%	0.0%

Table 2. Marginal Effects of Being Female (SS Workers)

2001		y: Probability of Having Daily Business Travel Miles Longer Than						
		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	-0.068**	-0.060**	-0.060**	-0.054**	-0.053**	-0.037**	-0.025**
	Savvy	-0.059**	-0.047**	-0.041**	-0.028*	-0.028*	-0.029**	-0.022*
With Sm Child	Non Savvy	-0.064**	-0.060**	-0.050**	-0.045**	-0.040**	-0.026**	-0.019**
	Savvy	-0.12**	-0.11**	-0.090**	-0.088**	-0.087**	-0.053**	-0.041*
2009		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	-0.046**	-0.043**	-0.038**	-0.034**	-0.034**	-0.027**	-0.021**
	Savvy	-0.044**	-0.039**	-0.036**	-0.038**	-0.034**	-0.034**	-0.021**
With Sm Child	Non Savvy	ns	ns	ns	ns	ns		
	Savvy	-0.043**	-0.041**	-0.034**	-0.030**	-0.023*	-0.015+	-0.016**
2017		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	ns	ns					
	Savvy	ns	-0.0099**	-0.0083**	ns	ns	ns	ns
With Sm Child	Non Savvy							
	Savvy	ns	ns	ns	ns	ns	ns	ns

Robustness check

2001 / Webwork		10+	20+	30+	40+	50+	70+	100+
No Sm Child	No Web at Wk	-0.072**	-0.062**	-0.056**	-0.048**	-0.045**	-0.034**	-0.026**
	Webuse at Work	-0.045*	-0.040*	-0.047**	-0.039**	-0.041**	-0.035**	-0.018*
With Sm Child	No Web at Wk	-0.086**	-0.067**	-0.051**	-0.041**	-0.039**	-0.030**	-0.020**
	Webuse at Work	-0.079*	-0.10**	-0.089**	-0.092**	-0.087**	-0.046*	-0.040*
2017 / Multi-Device		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	ns	ns	-0.0098**	-0.0082**	-0.0040+	-0.0036+	-0.0040+
	Tech Savvy	-0.013+	-0.012+	ns	ns	ns	ns	ns
With Sm Child	Non Savvy	ns	ns	ns	ns	ns	ns	ns
	Tech Savvy	ns	ns	ns	ns	ns	ns	ns

ns: insignificant, +: significant at 90% level, *: significant at 95%, **: significant at 99%

level

The average marginal effects are not estimatable for the shaded areas.

In the robustness check models, the "Webwork" variable equals one if the person uses the internet from the workplace, and the "Multi-Device" variable equals one if the person uses multiple devices daily (daily usage of at least two devices from the following: desktop PC, laptop PC, tablet, or smartphone).

Table 3. Marginal Effects of Having a Small Child (SS Workers)

		y: Probability of Having Daily Business Travel Miles Longer Than						
2001		10+	20+	30+	40+	50+	70+	100+
Non Savvy	Male	ns	ns	ns	ns	ns	-0.02[+]	ns
	Fem	ns	ns	-0.0085*	-0.0083**	-0.0072*	-0.0059*	ns
Savvy	Male	0.062[+]	0.054[+]	ns	ns	ns	ns	ns
	Fem	ns	ns	ns	-0.022**	-0.022**	-0.018**	-0.012**
2009		10+	20+	30+	40+	50+	80+	100+
Non Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Fem	ns	ns	ns	ns	ns		
Savvy	Male	ns	ns	ns	ns	ns	-0.017[+]	ns
	Fem	ns	ns	ns	ns	ns	ns	-0.0045*
2017		10+	20+	30+	40+	50+	80+	100+
Non Savvy	Male							
	Fem							
Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Fem	ns	ns	ns	ns	ns	ns	ns

Robustness check								
2001 / Webwork		10+	20+	30+	40+	50+	70+	100+
No Web at Work	Male	ns	ns	ns	ns	ns	ns	ns
	Fem	ns	ns	ns	-0.0074*	-0.0069*	-0.0056**	ns
Webuse at Work	Male	ns	ns	ns	ns	ns	ns	ns
	Fem	ns	-0.036*	ns	-0.025**	-0.024**	-0.020**	-0.016**
2017 / Multi-Device		10+	20+	30+	40+	50+	70+	100+
Non Tech Savvy	Male	-0.019**	ns	ns	-0.0069[+]	ns	ns	ns
	Fem	ns	ns	ns	ns	ns	ns	ns
Tech Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Fem	ns	ns	ns	ns	-0.0079[+]	ns	ns

ns: insignificant, [+]: significant at 90% level, *: significant at 95%, **: significant at 99% level

The average marginal effects are not estimatable for the shaded areas.

In the robustness check models, the "Webwork" variable equals one if the person uses the internet from the workplace, and the "Multi-Device" variable equals one if the person uses multiple devices daily (daily usage of at least two devices from the following: desktop PC, laptop PC, tablet, or smartphone).

Table 4. Marginal Effects of Being an Internet Savvy (SS Workers)

		y: Probability of Having Daily Business Travel Miles Longer Than						
2001		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	0.019*	0.015*	0.013*	0.012*	0.0089[+]	0.0096*
With Sm Child	Male	0.064[+]	0.055[+]	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	ns	ns
2009		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	0.026**	0.023**	0.019**	0.013**	0.013**	0.0065**	0.0036*
With Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns		
2017		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	0.034**	0.023**					
	Female	0.023**	0.012**	0.0068*				
With Sm Child	Male							
	Female							

Robustness check

2001 / Webwork		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	0.040**	0.035**	0.021*	0.017*	0.014*	0.012[+]	0.014**
With Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	0.043[+]	ns	ns	ns	ns	ns	ns
2017 / Multi-Device		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	0.035*	ns	0.0090**	0.0083*	0.0086*	0.0072*	0.0070*
With Sm Child	Male	ns	0.033*	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	ns	ns

ns: insignificant, [+]: significant at 90% level, *: significant at 95%, **: significant at 99% level

The average marginal effects are not estimatable for the shaded areas.

In the robustness check models, the "Webwork" variable equals one if the person uses the internet from the workplace, and the "Multi-Device" variable equals one if the person uses multiple devices daily (daily usage of at least two devices from the following: desktop PC, laptop PC, tablet, or smartphone).

Table 5. Marginal Effects of Being Female (PM Workers)

		y: Probability of Having Daily Business Travel Miles Longer Than						
2001		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	-0.062**	-0.050**	-0.042**	-0.037**	-0.032**	-0.025**	-0.024**
	Savvy	-0.018*	-0.025**	-0.022**	-0.018**	-0.017**	-0.0098*	-0.0087*
With Sm Child	Non Savvy	-0.051*	-0.030*	-0.030*	-0.029*	ns	ns	-0.0096*
	Savvy	-0.039*	-0.029*	-0.027**	-0.026**	-0.017*	ns	-0.014*
2009		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	ns	-0.028[+]	ns	-0.026*	-0.027**	-0.025**	-0.027**
	Savvy	-0.022**	-0.016**	-0.015**	-0.015**	-0.012**	-0.010**	-0.0072**
With Sm Child	Non Savvy	ns	-0.017*	-0.014[+]	ns	ns	-0.0040[+]	
	Savvy	ns	ns	ns	ns	ns	ns	ns
2017		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy							
	Savvy	-0.0057[+]	-0.0064*	-0.0041[+]	-0.0043*	-0.0042*	-0.0039*	-0.0034*
With Sm Child	Non Savvy							
	Savvy	ns	ns	ns	-0.010*	-0.0073*	-0.0074**	-0.0072*

Robustness check

2001 / Webwork		10+	20+	30+	40+	50+	70+	100+
No Sm Child	No Web at Wk	-0.053**	-0.042**	-0.041**	-0.037**	-0.031**	-0.023**	-0.026**
	Webuse at Work	-0.030**	-0.032**	-0.025**	-0.021**	-0.020**	-0.013**	-0.011**
With Sm Child	No Web at Wk	-0.086**	-0.048**	-0.043*	-0.042*	-0.031[+]	ns	-0.014*
	Webuse at Work	-0.027[+]	-0.021[+]	-0.022*	-0.020*	ns	-0.011[+]	-0.012*
2017 / Multi Device		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Non Savvy	ns	-0.0068[+]	ns	ns	ns	ns	ns
	Tech Savvy	-0.0070[+]	-0.0064*	ns	-0.0042[+]	-0.0043*	-0.0040*	-0.0037*
With Sm Child	Non Savvy	ns	ns	ns	ns	ns	ns	ns
	Tech Savvy	ns	-0.011[+]	ns	-0.013**	-0.0086*	-0.0090**	-0.0087**

ns: insignificant, [+]: significant at 90% level, *: significant at 95%, **: significant at 99% level

The average marginal effects are not estimatable for the shaded areas.

In the robustness check models, the "Webwork" variable equals one if the person uses the internet from the workplace, and the "Multi-Device" variable equals one if the person uses multiple devices daily (daily usage of at least two devices from the following: desktop PC, laptop PC, tablet, or smartphone).

Table 6. Marginal Effects of Having a Small Child (PM Workers)

		y: Probability of Having Daily Business Travel Miles Longer Than						
2001		10+	20+	30+	40+	50+	70+	100+
Non Savvy	Male	ns	-0.028[+]	ns	ns	ns	-0.020**	-0.017*
	Female	ns	ns	ns	ns	ns	ns	-0.0016*
Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	ns	-0.0070[+]
2009		10+	20+	30+	40+	50+	70+	100+
Non Savvy	Male	ns	-0.036*	-0.029*	-0.031**	-0.029**	-0.026*	-0.026**
	Female	-0.029[+]	-0.025*	-0.022*	-0.0081*	-0.0045[+]	-0.0039*	
Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	ns	ns
2017		10+	20+	30+	40+	50+	70+	100+
Non Savvy	Male							
	Female							
Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	-0.0035**	-0.0020*
Robustness check								
2001 / Webwork		10+	20+	30+	40+	50+	70+	100+
No Webuse at Work	Male	ns	ns	ns	ns	ns	ns	-0.015[+]
	Female	ns	-0.017[+]	ns	ns	ns	ns	-0.0022*
Webuse at Work	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	-0.0078[+]	-0.0058[+]
2017 / Multi-Device		10+	20+	30+	40+	50+	70+	100+
Non Tech Savvy	Male	ns	ns	ns	ns	ns	-0.0049*	-0.0034[+]
	Female	ns	ns	ns	ns	ns	ns	ns
Tech Savvy	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	-0.0040**	-0.0022*

ns: insignificant, [+]: significant at 90% level, *: significant at 95%, **: significant at 99% level

The average marginal effects are not estimatable for the shaded areas.

In the robustness check models, the "Webwork" variable equals one if the person uses the internet from the workplace, and the "Multi-Device" variable equals one if the person uses multiple devices daily (daily usage of at least two devices from the following: desktop PC, laptop PC, tablet, or smartphone).

Table 7. Marginal Effects of Being Internet-Savvy (PM Workers)

		y: Probability of Having Daily Business Travel Miles Longer Than						
2001		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	-0.022*	-0.020*	-0.017+	ns	ns	ns	ns
	Female	0.021*	ns	ns	ns	0.0072+	0.0094**	0.0093**
With Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	ns	ns	ns	ns
2009		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	ns	ns	ns	ns	-0.019*
	Female	ns	ns	ns	ns	ns	ns	0.0033**
With Sm Child	Male	ns	ns	ns	0.018**	0.015*	0.0072+	0.0055*
	Female	0.028*	0.025**	0.016**	0.014**	0.011**	0.0078**	
2017		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	0.014**	0.011**	0.0090**	0.0070**	0.0044+
	Female							
With Sm Child	Male							
	Female							
Robustness check								
2001 / Webwork		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	ns	ns	ns	0.0073+	0.0071*	0.0069*	0.0060**
With Sm Child	Male	ns	ns	ns	ns	ns	ns	ns
	Female	0.025+	ns	ns	ns	ns	ns	ns
2017 / Multi-Device		10+	20+	30+	40+	50+	70+	100+
No Sm Child	Male	0.012*	0.0076+	0.0064+	0.0064*	0.0047+	ns	ns
	Female	ns	0.0078*	0.0067*	0.0064**	0.0039+	ns	ns
With Sm Child	Male	0.016+	ns	ns	ns	0.0096*	0.0088**	0.0084*
	Female	ns	ns	ns	ns	ns	ns	ns

ns: insignificant, +: significant at 90% level, *: significant at 95%, **: significant at 99% level

The average marginal effects are not estimatable for the shaded areas.
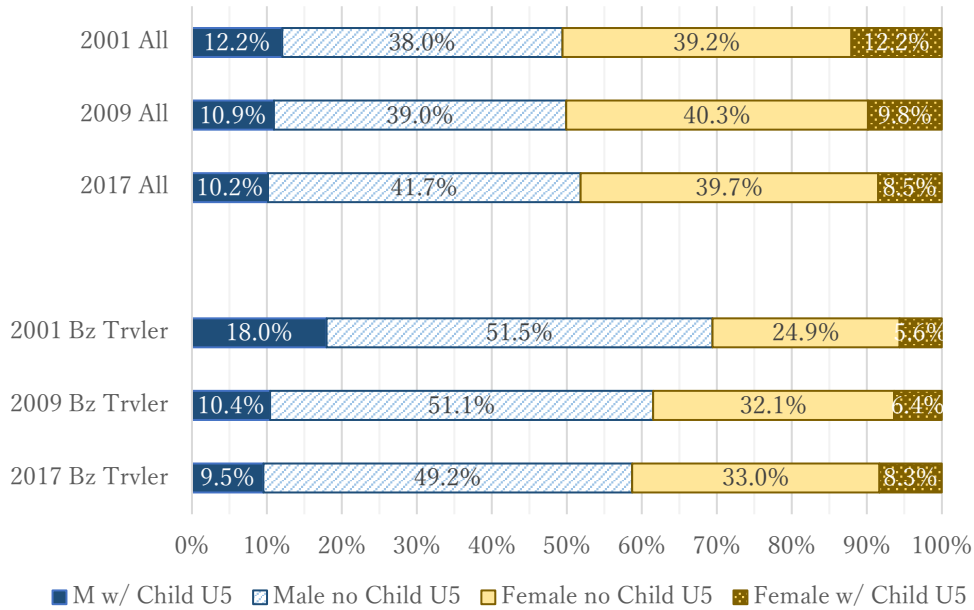
In the robustness check models, the "Webwork" variable equals one if the person uses the internet from the workplace, and the "Multi-Device" variable equals one if the person uses multiple devices daily (daily usage of at least two devices from the following: desktop PC, laptop PC, tablet, or smartphone).
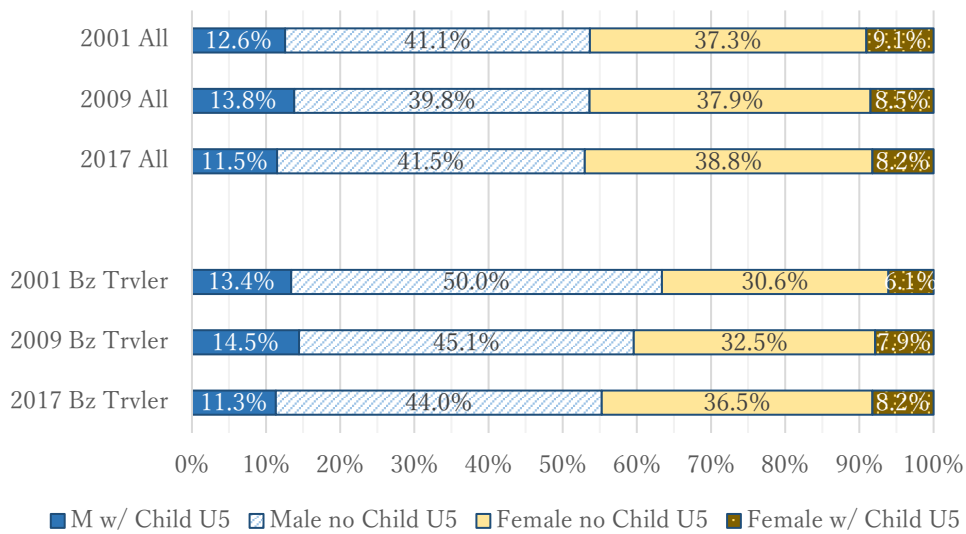
FIGURES

**Figure 1: Gender Distribution and Child Presence among SS and PM Workers/Business Travelers**

Gender Distribution among SS Workers

	M w/ Child U5	Male no Child U5	Female no Child U5	Female w/ Child U5
2001 All	12.2%	38.0%	39.2%	12.2%
2009 All	10.9%	39.0%	40.3%	9.8%
2017 All	10.2%	41.7%	39.7%	8.5%
2001 Bz Trvler	18.0%	51.5%	24.9%	5.6%
2009 Bz Trvler	10.4%	51.1%	32.1%	6.4%
2017 Bz Trvler	9.5%	49.2%	33.0%	8.3%

■ M w/ Child U5 □ Male no Child U5 □ Female no Child U5 ■ Female w/ Child U5

Gender Distribution among PM Workers

	M w/ Child U5	Male no Child U5	Female no Child U5	Female w/ Child U5
2001 All	12.6%	41.1%	37.3%	9.1%
2009 All	13.8%	39.8%	37.9%	8.5%
2017 All	11.5%	41.5%	38.8%	8.2%
2001 Bz Trvler	13.4%	50.0%	30.6%	6.1%
2009 Bz Trvler	14.5%	45.1%	32.5%	7.9%
2017 Bz Trvler	11.3%	44.0%	36.5%	8.2%

■ M w/ Child U5 □ Male no Child U5 □ Female no Child U5 ■ Female w/ Child U5

Figure 2: Conditional Predictions of SS Workers Having Daily Business Trips Longer Than Certain Miles
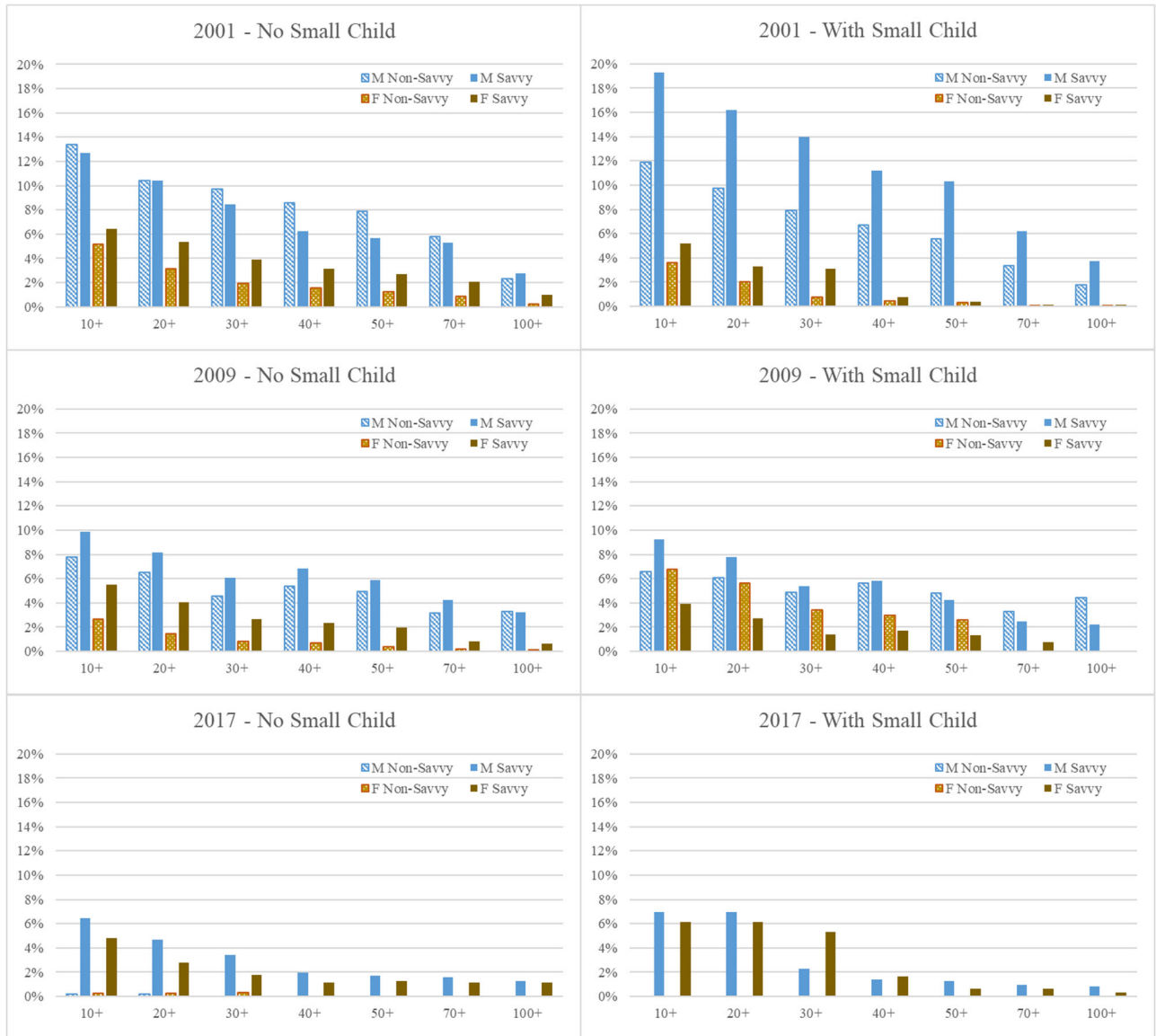
Note: Probabilities of having daily business travel miles 10, 20, 30, 40, 50, 70, and 100 miles or longer are predicted for 32 years old non-Hispanic White SS workers with bachelor's degree, household income of $80,000, living in urban areas in the Northeast region.

Figure 3: Conditional Predictions of PM Workers Having Daily Business Trips Longer Than Certain Miles

Note: Probabilities of having daily business travel miles 10, 20, 30, 40, 50, 70, and 100 miles or longer are predicted for 32 years old non-Hispanic White PM workers with bachelor's degree, household income of $80,000, living in urban areas in the Northeast region.