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Who shirks at work? A time use exploration

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Abstract

Shirking, or loafing, refers to the time workers spend at the workplace engaged in non-work activities, such as leisure, internet shopping, or social media. This paper examines the shirking behaviors of workers in the US using time use diaries from the American Time Use Survey for the period 2003–2019. We focus on the minutes spent shirking, the ratio of shirking time to market work time, and the probability of being a worker who shirks. Our results show that being female, holding a university degree, having specific household characteristics, working in the private sector, and having an unsupervised occupation are associated with less time spent shirking, lower shirking shares, and a reduced likelihood of being a shirker. These findings highlight key sociodemographic factors linked to workplace shirking and offer insights for employers and policymakers aiming to improve productivity and engagement.

Keywords

Shirking behaviors, shirking time, ATUS data.

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1. Introduction

Shirking, or loafing, refers to the time employees spend at work on non-work-related activities, such as gossiping, browsing the internet, chatting, socializing with colleagues, or handling personal matters; as well as activities that are not immediately productive but may contribute to future productivity, such as cleaning or exercising (Burda et al., 2020; Hamermesh et al., 2021). Understanding shirking is important because it can negatively impact organizational performance (Antosz et al., 2020). For instance, employees spend on average about 7% of their workday not working, which amounts to approximately 34 minutes per day (Burda et al., 2020), and data on internet traffic shows that 60% of online purchases are made during standard working hours, between 9am and 5pm (Mills et al., 2001). According to Verton (2000), this kind of cyberloafing may reduce productivity by 30% to 40%, while Malachowski and Simonini (2006) estimate that time wasted on non-work activities could cost US employers as much as $544 billion per year.

Shirking has been studied across multiple disciplines, including sociology, management, psychology, and economics (Antosz et al., 2020). In economics, it plays a central role in theories such as inspection games, moral hazard, and efficiency wages, where shirking may lead to job loss (Holmström, 1979; Shapiro and Stiglitz, 1984; Akerlof and Yellen, 1986; Fudenberg and Tirole, 1991). In addition, shirking is also considered an inverse measure of effort at work and job performance, therefore driving productivity in the US (Frey, 1993; Ross and Zenou, 2008). Most of the previous literature has focused on the extensive margin of shirking, i.e., workers' absence from the workplace or reduced attendance, whereas this paper centers on the intensive margin, that is, time spent on non-work activities while physically present at work. By shifting the focus to shirking within the workplace, the analysis complements existing research and provides a more detailed view of how employees allocate effort during paid working hours.

Few studies have examined how sociodemographic and economic factors shape the time workers spend on non-

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work activities at their workplace (Burda et al., 2020; Hamermesh et al., 2021). Burda et al. (2020) find that higher local unemployment in the US is linked to more time at work spent not working, particularly on leisure or cleaning. Hamermesh et al. (2021) report that Hispanic workers spend slightly more time not working than non-Hispanic counterparts in the US, and that this gap may explain up to 10% of the adjusted wage differential between the two groups.

Within this framework, this study examines worker shirking in the US using time use diaries from the American Time Use Survey (ATUS) for the period 2003–2019. The ATUS makes it possible to measure shirking as the time spent at the workplace on non-work activities during work hours. The analysis focuses on identifying the sociodemographic profiles of workers who are more likely to shirk. The main findings show that shirking is positively associated with being male (compared to female), being older, working full time, being employed in the public sector or in supervised occupations, and working on regular workdays. In contrast, higher levels of human capital and education, being white or Hispanic, living with a partner, having more children, working more regular weekly hours, and earning higher wages are negatively associated with shirking.

This study contributes to the literature by providing empirical evidence on how workers' sociodemographic characteristics are associated with different measures of shirking. Despite the importance of this topic, existing research remains limited (Burda et al., 2020; Hamermesh et al., 2021). By identifying the profiles of workers who are more or less likely to shirk, the findings offer insights that may help firms design strategies to improve productivity, strengthen employee commitment, and reduce time lost to non-work activities. In doing so, this study addresses a gap in the literature and offers useful information for researchers, employers, and policymakers.

2. Data and methods

2.1 Data and variables

We use data from the ATUS for the period 2003–2019. The ATUS, conducted by the Bureau of Labor Statistics, is considered the official time use survey of the US, and is based on diaries in which respondents report their activities over a 24-hour period, including what they were doing, where, and with whom.[1] Our sample is restricted to employees aged 16 to 65 with complete information on key variables, who reported at least 60 minutes working on the diary day (Giménez-Nadal et al., 2018). The final sample includes 45,054 individuals.

The pivotal variable in our analysis is shirking. We compute the total time spent shirking at work following the approach of Burda et al. (2020) and Giménez-Nadal et al. (2018, 2021). Shirking time, measured in minutes per day, is defined as the time spent at the workplace on activities not classified as market work, excluding mandatory work breaks. This includes, for example, time spent on leisure, personal care, online shopping, or social media. To account for differences in work schedules, we also compute the share of shirking, defined as the ratio of time spent in shirking to total market work time. In addition, we construct a binary indicator for shirking, being a shirker, which takes the value 1 if a worker reports any positive amount of shirking time, and 0 otherwise.[2]

The ATUS provides information on a range of sociodemographic characteristics that likely relate to worker time allocation (e.g., Hamermesh et al., 2005; Aguiar et al., 2013), including gender, age, education, race, marital status, family size, having children, full- or part-time employment, public or private sector status, weekly regular work hours, the day the diary was completed, and weekly earnings.[3] We also use occupational information to identify workers' occupation, and whether a worker's job is supervised, as supervision likely affects the opportunity to shirk (Levenson and Zoghi, 2006; Ross and Zenou, 2008). Descriptive statistics for these variables are presented in Table A1 in the Appendix.

2.2 Empirical strategy

We analyze workers' shirking behavior using multivariate regression to estimate the conditional correlations between shirking behaviors on one hand, and worker characteristics on the other hand, accounting for observed heterogeneity. Specifically, we estimate the following equation, for worker i, working on occupation o, and living in region s during year t:

$$Y_{iost} = \beta_0 + \boldsymbol{\beta}_X \boldsymbol{X}_{iost} + \alpha_o + \gamma_s + \delta_t + \varepsilon_{iost},$$

where Y denotes the dependent variable (shirking time, share of shirking, or being a shirker), $\boldsymbol{X}$ is a vector of observable worker demographics, and α, γ, and δ represent occupation, state, and year fixed effects, respectively.[4] The error term ε captures unobserved factors and measurement error. All estimates are weighted using the sampling weights provided in the ATUS, and robust standard errors are used to account for potential heteroskedasticity.

3. Results

Table 1 shows the main estimates. Column (1) analyzes shirking time as the dependent variable, Column (2) analyzes the share of shirking, and Column (3) analyzes the dummy being a shirker. Next, Columns (4) and (5) replicate the analysis of (1) and (2) but restrict the sample to workers who report positive shirking time.

Being male is associated with a statistically significant increase of 1.87 minutes in daily shirking time and a 0.2 percentage point higher share of shirking. Men are also 1.6 percentage points more likely than women to be classified as shirkers. Among those who shirk, men spend 1.60 more

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minutes per day shirking, although the difference in shirking share is small and not statistically significant, suggesting that gender differences in shirking intensity may be driven by differences in total work time. These patterns may reflect socialization processes, gender expectations, or cultural norms influencing how men experience workplace discipline (Qian and Fan, 2019). Besides, these findings relate to Martín-Román et al. (2024), who analyze the gender gap in sick leave duration as a proxy of the extensive margin of shirking in Spain. They find that the opportunistic component of sick leave is more pronounced for men at higher income levels, revealing shirking patterns that support the idea that women may face stronger pressures to avoid shirking, consistent with our finding for the US related to the intensive margin. Worker age is positively associated with shirking time, with each additional year linked to an increase of 0.06 minutes and a slight rise in the shirking share. However, the effect on the likelihood of being a shirker is not statistically significant. Among shirkers, older workers report more time shirking and higher shirking shares, indicating that age is related to the intensity, but not the probability, of shirking. Education shows clear negative associations with shirking. Workers with a university degree shirk 4.24 fewer minutes per day, devote 0.7 percentage points less of their work time to shirking, and are 3.7 percentage points less likely to be shirkers. These differences, however, are not significant when the analysis is restricted to shirkers, suggesting that education primarily affects the likelihood of shirking rather than its intensity. This may reflect that more educated workers tend to report higher job satisfaction and stronger career motivations. Workers with secondary education show no significant differences compared to those with only primary schooling.

Table 1. Main estimation results

VARIABLES	(1) Shirking time	(2) Share of shirking	(3) Being a shirker	(4) Shirking time | shirkers	(5) Share of shirking | shirkers
Being male	1.871***	0.002**	0.016**	1.602***	0.001
	(0.508)	(0.001)	(0.007)	(0.605)	(0.001)
Age	0.060***	0.000***	0.000	0.077***	0.000***
	(0.020)	(0.000)	(0.000)	(0.024)	(0.000)
Educ.: Secondary	-1.307	-0.002	0.006	-1.602	-0.002
	(1.956)	(0.003)	(0.020)	(2.092)	(0.003)
Educ.: University	-4.240**	-0.007**	-0.037*	-3.217	-0.005
	(2.010)	(0.003)	(0.021)	(2.167)	(0.004)
Being white	-4.329***	-0.008***	-0.060***	-2.350***	-0.004***
	(0.593)	(0.001)	(0.007)	(0.677)	(0.001)
Being Hispanic	-3.948***	-0.006***	-0.057***	-1.810**	-0.002
	(0.633)	(0.001)	(0.008)	(0.717)	(0.001)
Living in couple	-1.197**	-0.002***	-0.009	-1.187**	-0.002**
	(0.489)	(0.001)	(0.006)	(0.568)	(0.001)
Family size	0.398*	0.001	0.003	0.391	0.001
	(0.225)	(0.000)	(0.003)	(0.263)	(0.000)
Having children	-2.181***	-0.003***	-0.013	-2.360***	-0.003**
	(0.625)	(0.001)	(0.008)	(0.732)	(0.001)
Full time worker	13.338***	0.021***	0.204***	6.569***	0.006***
	(0.921)	(0.002)	(0.011)	(1.195)	(0.002)
Public sector worker	1.928***	0.005***	0.026***	1.248	0.004***
	(0.650)	(0.001)	(0.008)	(0.772)	(0.001)
Supervised worker	10.017***	0.016***	0.098***	8.472***	0.013***
	(1.236)	(0.002)	(0.015)	(1.467)	(0.003)
Weekly work hours	-0.134***	-0.001***	-0.003***	-0.017	-0.001***
	(0.029)	(0.000)	(0.000)	(0.038)	(0.000)
Weekday	4.410***	0.006***	0.078***	1.075	-0.000
	(0.604)	(0.001)	(0.007)	(0.825)	(0.002)
Weekly earnings	-0.003***	-0.000***	-0.000***	-0.002***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Constant	22.753***	0.063***	0.551***	39.992***	0.111***
	(3.122)	(0.005)	(0.039)	(3.576)	(0.006)
Occupation fixed effects	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	45,054	45,054	45,054	30,059	30,059
R-squared	0.060	0.058	0.066	0.028	0.036

*Note: the sample (ATUS 2003–2019) is restricted to employed individuals who worked the diary day. Reference for education: basic/primary education. Robust standard errors in parentheses. *** significant at the 1%; ** significant at the 5%; * significant at the 10%.*

Race and ethnicity also show significant differences. White workers spend 4.33 fewer minutes shirking per day and are 6 percentage points less likely to be shirkers. Hispanic workers show similar results: 3.95 fewer minutes of shirking, a 0.6 percentage point lower shirking share, and a 5.7 percentage point lower probability of being a shirker. These differences remain statistically significant among shirkers, especially in terms of shirking time.

Regarding household characteristics, living with a partner is associated with 1.20 fewer minutes of shirking per day and a 0.2 percentage point lower shirking share. Although not significantly linked to the binary shirker indicator, among shirkers both shirking time and share remain significantly lower, suggesting that cohabitation may be associated with stronger norms of responsibility or time discipline. In contrast, family size shows a small positive association with shirking. Having children, however, is linked to less shirking time, and a lower shirking share, but not to a reduced probability of being a shirker, suggesting that childcare responsibilities may increase focus or reduce distractions at work, although it is not related to being a shirker.

Working full time is strongly associated with higher levels of shirking. Full-time workers report 13.34 more minutes of shirking per day, a 2.1 percentage point higher shirking share, and are 20.4 percentage points more likely to be shirkers. Even among shirkers, they spend 6.57 more minutes shirking than part-time workers. Differences also emerge by sector: public sector employees shirk 1.93 more minutes per day than private sector counterparts, have a 0.5 percentage point higher shirking share, and are 2.6 percentage points more likely to be shirkers. The gap remains statistically significant among shirkers for the share of shirking, but not for the time spent shirking, suggesting that being a public sector worker does not relate to increased shirking time conditional on being a shirker.

Supervision appears to be positively associated with shirking. Workers in supervised occupations shirk 10.02 more minutes per day and are 9.8 percentage points more likely to be shirkers than those in unsupervised roles. Among shirkers, they report 8.47 more minutes of shirking and a 1.3 percentage point higher shirking share. This may indicate that supervision does not reduce shirking and might even correlate with environments where shirking is more easily detected or reported. In contrast, workers in non-supervised positions may face stronger internalized discipline or job expectations linked to autonomy and responsibility. Two mechanisms could explain this association. First, supervision may be more prevalent in jobs where short non-work episodes naturally arise and are recorded in diaries even under oversight. Second, closer monitoring may increase the salience and reporting of brief non-work activities. As these patterns are estimated conditional on occupation, state, and year fixed effects, results indicate that the association is not purely driven by broad occupational composition.

Longer workweeks are associated with slightly less shirking: each additional hour of paid work per week reduces shirking time by 0.13 minutes and the likelihood of being a shirker by 0.3 percentage points. This suggests that longer work schedules may limit opportunities for non-work activities. A potential interpretation is that workers with longer paid hours face tighter within day schedules and have fewer opportunities to reallocate minutes to non-work while working. Finally, higher earnings are associated with lower shirking across all outcomes, consistent with urban efficiency wage models (Ross and Zenou, 2008; Giménez-Nadal et al., 2018), although the magnitudes are small and likely not economically meaningful.

4. Conclusions

This paper uses data from the ATUS to explore the shirking behaviors of workers in the United States. By examining key sociodemographic, household, and employment characteristics, we identify clear patterns in how different groups of workers allocate time to non-work activities while at the workplace. Our results show that men shirk more than women, and that workers with higher education, those employed in the private sector, and those in unsupervised roles tend to spend less time shirking, exhibit lower shirking shares, and are less likely to be classified as shirkers. These findings point to the relevance of sociodemographic factors in shaping workplace behavior and suggest that productivity strategies should consider the composition of the workforce.

The analysis has some limitations. First, while the ATUS provides detailed time-use data, it is cross-sectional and captures only a single day per respondent, which may not reflect long-term behavior and only allows to identify conditional correlations; moreover, the analysis is not designed to identify causal effects, but rather conditional associations between shirking and worker characteristics. Second, the measure of shirking is based on reported activity categories and location, which may underestimate or misclassify some non-work behaviors. Relatedly, activities in the ATUS are self-reported, which may introduce measurement error, likely biasing the measures of shirking and the estimated associations toward zero. Future research could explore how organizational policies or labor market conditions influence shirking dynamics over time or examine how remote work arrangements have shifted these patterns in more recent years.

Despite these limitations, the analysis indicates that workplace behavior is not uniform across groups: the same work setting can lead to different levels of shirking depending on workers' profiles. This has direct implications for employers and policymakers. For example,

interventions that target high-shirking groups (e.g., enhanced performance feedback or flexible scheduling) may be more effective than one-size-fits-all approaches. Similarly, fostering autonomy and accountability in unsupervised roles could reinforce already lower levels of shirking, while increased efforts in supervised occupations seem necessary to reduce shirking behaviors. By identifying which worker profiles are more likely to engage in shirking, this study provides a foundation for targeted management strategies aimed at improving workplace efficiency.

References

[1] Aguiar, M., Hurst, E., & Karabarbounis, L. (2013). The life-cycle profile of time spent on job search. *American Economic Review*, 103(3), 111–116.
[2] Akerlof, G. A., & Yellen, J. L. (Eds.). (1986). *Efficiency wage models of the labor market*. Cambridge University Press.
[3] Antosz, P., Rembiasz, T., & Verhagen, H. (2020). Employee shirking and overworking: modelling the unintended consequences of work organisation. *Ergonomics*, 63(8), 997–1009.
[4] Burda, M. C., Genadek, K. R., & Hamermesh, D. S. (2020). Unemployment and effort at work. *Economica*, 87(347), 662–681.
[5] Frey, B. S. (1993). Does monitoring increase work effort? The rivalry with trust and loyalty. *Economic Inquiry*, 31(4), 663–670.
[6] Fudenberg, D., & Tirole, J. (1991). *Game theory*. MIT Press.
[7] Giménez-Nadal, J. I., Molina, J. A., & Velilla, J. (2018). Spatial distribution of US employment in an urban efficiency wage setting. *Journal of Regional Science*, 58(1), 141–158.
[8] Giménez-Nadal, J. I., Molina, J. A., & Velilla, J. (2021). Testing urban efficiency wages in France and Spain. *Empirical Economics*, 61, 2205–2236.
[9] Hamermesh, D. S., Frazis, H., & Stewart, J. (2005). Data watch the American time use survey. *Journal of Economic Perspectives*, 19(1), 221–232.
[10] Hamermesh, D. S., Genadek, K. R., & Burda, M. C. (2021). Racial/ethnic differences in non-work at work. *ILR Review*, 74(2), 272–292.
[11] Holmström, B. (1979). Moral hazard and observability. *The Bell Journal of Economics*, 74–91.
[12] Levenson, A. R., & Zoghi, C. (2006). The strength of occupational indicators as a proxy for skill. *BLS Working Paper* 404.
[13] Malachowski, D., & Simonini, J. (2006). Wasted time at work still costing companies billions in 2006. https://www.salary.com/chronicles/wasted-time-at-work-still-costing-companies-billions-in-2006/
[14] Martín-Román, Á. L., Moral, A., & Pinillos-Franco, S. (2024). Are women breaking the glass ceiling? A gendered analysis of the duration of sick leave in Spain. *International Journal of Health Economics and Management*, 24(1), 107–134.
[15] Mills, J. E., Hu, B., Beldona, S., & Clay, J. (2001). Cyberslacking! A liability issue for wired workplaces. *Cornell Hotel and Restaurant Administration Quarterly*, 42(5), 34–47.
[16] Qian, Y., & Fan, W. (2019). Men and women at work: Occupational gender composition and affective well-being in the United States. *Journal of Happiness Studies*, 20(7), 2077–2099.
[17] Ross, S. L., & Zenou, Y. (2008). Are shirking and leisure substitutable? An empirical test of efficiency wages based on urban economic theory. *Regional Science and Urban Economics*, 38(5), 498–517.
[18] Shapiro, C., & Stiglitz, J. E. (1984). Equilibrium unemployment as a worker discipline device. *American Economic Review*, 74(3), 433–444.
[19] Verton, D. (2000). Employers ok with e-surfing. *Computerworld*, 34(1), 16.

Appendix: additional tables

Table A1. Summary statistics

VARIABLES	Mean	S. Dev
Shirking time	31.477	35.985
Share of shirking	0.058	0.064
Being a shirker	0.667	0.667
Being male	0.542	0.498
Age	39.51	12.71
Educ.: Primary	0.018	0.132
Educ.: Secondary	0.639	0.480
Educ.: University	0.343	0.475
Being white	0.820	0.384
Being Hispanic	0.176	0.381
Living in couple	0.550	0.498
Family size	3.106	1.518
Having children	0.529	0.499
Full time worker	0.854	0.353
Public sector worker	0.167	0.373
Supervised worker	0.501	0.500
Weekly work hours	41.61	11.39
Weekly earnings	869.0	632.0
N. Individuals	45,054	

Note: the sample (ATUS 2003–2019) is restricted to employed individuals who worked the diary day.