



IKEA Self-Scheduling Intervention: Baseline Report

The IKEA-Shift Project Research Collaboration

In October 2019, Björn Sunesson, then the *People Planning Manager* at IKEA in Sweden, reached out to Daniel Schneider and Kristen Harknett, the co-directors of The Shift Project, after encountering coverage of The Shift Project research in the *New York Times*. This research resonated with Björn, who had been working to advance a vision for a self-scheduling framework that would grant IKEA hourly workers more autonomy in setting the days and times of their work shifts. This connection sparked a research collaboration between IKEA and The Shift Project that included the design, implementation, and evaluation of a Self-Scheduling Intervention in the U.S.

Over the past 4 years, The Shift Project research team and representatives from the IKEA People Planning,

Data Analytics, and Wellness teams have met weekly to discuss the design, implementation, and data collection and analysis plans for the intervention.

In this report, we begin by situating the topic of self-scheduling in the broader research context. We then document the scheduling conditions for IKEA co-workers before the launch of the intervention, and describe the new self-scheduling features. Next, we describe the research design for the planned evaluation of the intervention. We end with discussions of future directions, including the future evaluation report that will describe implementation and the effects of the Self-Scheduling Intervention.

Scheduling Control: A Key Dimension of Job Quality

Job quality is often narrowly conceived of along economic lines, with a focus on wages¹ or fringe benefits such as health insurance or retirement savings.² However, job quality also has an important temporal dimension.³ Conceptually, this temporal dimension encompasses the regularity and predictability of one's work schedule as well as the extent to which a worker has control or input into the days and times and the amount of time they work.⁴

Over the past several decades, employers in low-wage industries have implemented a set of management strategies that create barriers to employee schedule control. Namely, to keep labor costs low, service sector employers often rely on HR practices, which minimize the number of working hours and tie hours closely to store traffic. At the same time, service sector work typically relies on workers being physically present for their shifts. Many businesses then require that workers be deployable to work when needed as mandated by often changing labor demand. These factors have resulted in schedules that are highly unpredictable and schedules over which workers have little-to-no control.⁵

There is a large literature that has focused on the contours and consequences of the resulting schedule unpredictability in the service sector⁶ – one of the largest sectors in the U.S. economy. This work finds that work schedule unpredictability and instability is widespread⁷ and especially prevalent in the service sector, where few workers receive at least two weeks' notice of their schedules and workers commonly experience on-call shifts, last minute changes to schedule timing, and shift cancellations.⁸ These practices are strongly associated with diminished job satisfaction,⁹ turnover,¹⁰ economic insecurity,¹¹ and diminished worker health and wellbeing.¹²

While schedule unpredictability is an issue of significant concern for service sector workers, they also overwhelmingly report low levels of scheduling control.¹³ However, though there is also a large body of research on schedule control, it has focused primarily

on white collar workers.¹⁴ Prior research has shown that schedule control has benefits for these workers such as decreased work-family conflicts, greater job commitment,¹⁵ and positive impacts on physical health such as better sleep quality and less workplace pain.¹⁶

Similar to white collar workers, service sector workers may also benefit from increased schedule control in such domains as work-family conflict and job commitment.¹⁷ Indeed, schedule control may have even greater benefits in the service sector given that these workers are less likely to face the “always on” work/family role-blurring that can accompany increased schedule control in many white collar jobs.¹⁸ However, providing schedule control may be more challenging in the service sector than in white-collar sectors. Service sector workers are more spatially bounded (working in person, rather than remotely) than white collar workers and white-collar employers are more accustomed to using technology (phone calls, email, chat, video conferencing, etc.) to coordinate work beyond in-person interactions, and are therefore more likely to allow employees to work offsite and at varying hours.¹⁹

To increase schedule control and flexibility amongst workers, some service sector and retail firms have experimented with technology-based practices which give employees more autonomy over their schedules. Some firms include features in their scheduling software which allow employees to swap shifts with one another. This capability may allow workers to condense their weekly hours and take time off at more preferable periods. Swapping shifts may also allow employees to spend more time in roles they enjoy and/or excel at. Another common tactic to increase schedule flexibility is allowing employees to pick up unclaimed or “open” shifts. In the retail and service industries where hours often fluctuate on a weekly basis, picking up open shifts allows workers to supplement their income. A third method of increasing schedule flexibility is allowing employees to change their schedule availability. These features allow employees to change the times they indicated as being consistently open to work at the time of hiring when new personal obligations and other obstacles arise.

Finally, some scheduling softwares allow users to send direct requests to their co-workers for shift coverage. This can allow employees to take time off in the event of emergencies without using paid vacation days. Taken together, these features can give a significant amount of autonomy to workers, though research on the tangible benefits they have for workers has not been conducted up to this point.

In sum, although schedule control is highly salient for service sector workers and often lacking, less research on the topic has been conducted in this sector and the challenges of providing control are not minor. That said, the limited prior research on schedule control in low-wage jobs provides support for the intuition that service sector co-workers would benefit from more autonomy over scheduling and that providing such control is possible. The Stable Scheduling study at The Gap in 2016, for example, provided strong evidence

of the connection between schedule predictability, enhanced worker well-being, and store productivity.²⁰ Other research has shown that increased schedule control may have benefits for businesses such as reduced turnover among employees,²¹ greater job satisfaction,²² greater organizational commitment,²³ and more positive relationships with supervisors.²⁴

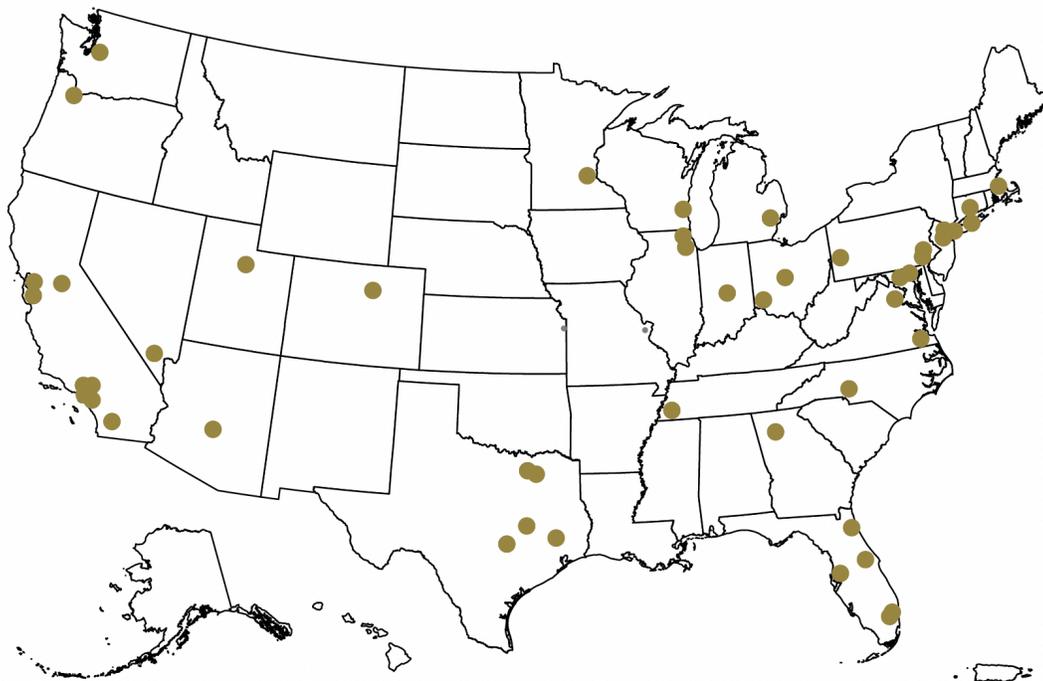
Against this backdrop of lack of schedule autonomy in retail, and in light of the research on the many benefits of granting greater schedule control to workers, the IKEA Self-Scheduling Intervention is designed to contribute to the emerging research on the potential worker and business benefits of voluntary high road employment practices.

The IKEA Setting and Enabling Schedule Control

IKEA was founded in Sweden in 1943. Currently headquartered in the Netherlands, the company employs over 170,000 co-workers across 464 retail

stores across the world. As shown in Figure 1, the United States currently has 52 IKEA locations which employ roughly 15,000 co-workers.²⁵

Figure 1. IKEA Store Locations in the U.S.



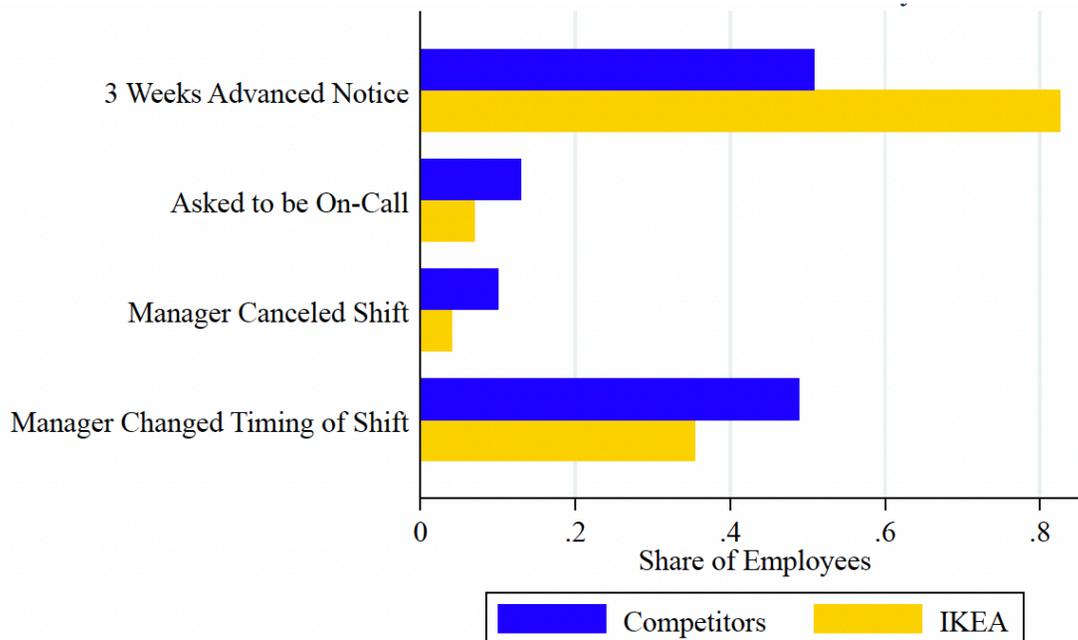
Data from The Shift Project study of working conditions in the service sector provide a comparative portrait of work scheduling conditions at IKEA and its competitors. Drawing on data from Shift Project surveys²⁶ conducted between fall 2017 and spring 2021 of 995 IKEA co-workers in the United States and 36,723 workers at Home Depot, Lowe’s, Target, and Walmart, we can compare the work scheduling conditions across IKEA and some of its brick-and-mortar competitors on the dimensions of schedule predictability and schedule control.

Figure 2 shows how IKEA USA compares to its competitors in terms of the schedule predictability it offers co-workers. The top bar indicates that a much larger share of IKEA co-workers reported getting at least 3 weeks of advance notice of their shift schedules than worker at competitor firms. The three bars below show that co-workers at IKEA USA are less likely than employees at competing firms to have worked on-call, have had a shift canceled, and to have experienced a last-minute change to work schedule timing. Taken together, these results indicate that

IKEA co-workers have a relatively high amount of schedule predictability within their industry.

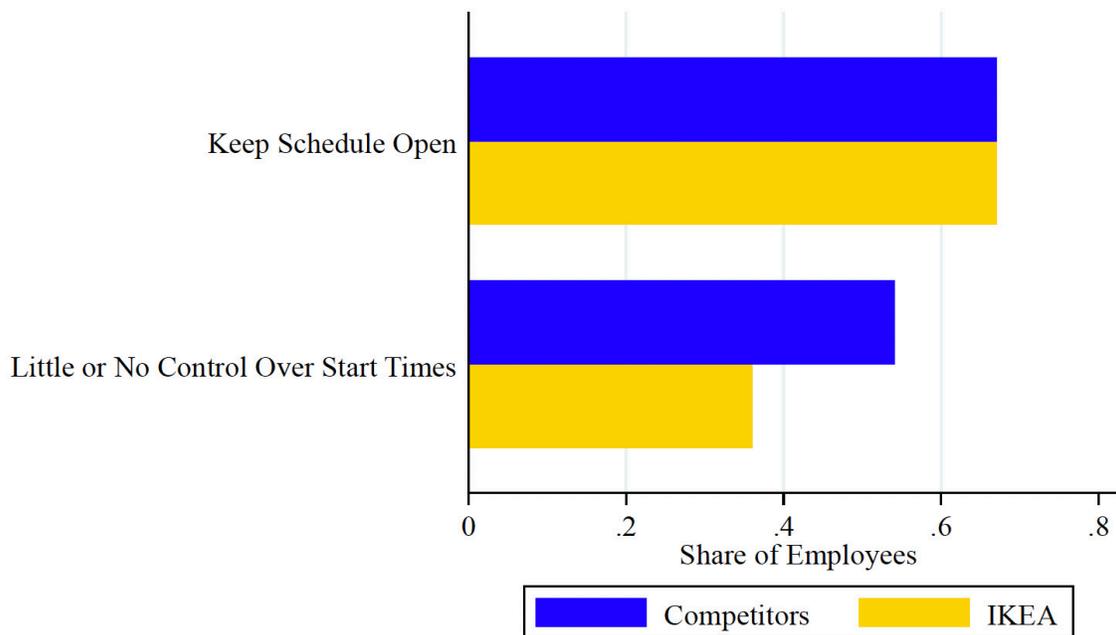
Figure 3 shows how IKEA co-workers’ schedule control compares to that of competing firms. Where IKEA stood out in terms of schedule predictability, the comparisons in Figure 3 show that IKEA falls in-line with industry practices when it comes to schedule control. The share of co-workers at IKEA and competitor firms who are required to maintain an open availability for work is nearly identical. While the share of IKEA co-workers who report having little or no control over starting and stopping times is lower than at competitor firms, this lack of schedule control is prevalent across the industry. In all, these data suggest that while IKEA is relatively high on schedule predictability, it does not stand out in the same way when it comes to schedule control. These patterns were a core part of the company’s motivation to design and implement the Self-Scheduling intervention, which aimed to increase schedule control for IKEA co-workers.

Figure 2. Comparison of IKEA and Its Competitors on Schedule Predictability



Competitors include Home Depot, Lowe's, Target, and Walmart.
Data collected by The Shift Project between Fall 2017 and Spring 2021.

Figure 3. Comparison of IKEA and Its Competitors on Schedule Control



Competitors include Home Depot, Lowe's, Target, and Walmart.
Data collected by The Shift Project between Fall 2017 and Spring 2021.

Scheduling Practices at IKEA: How Co-workers Report Availability and Request Schedule Changes

As background to the implementation of the Self-Scheduling intervention, we sought to understand the human resource management practices at IKEA that produce this relatively limited schedule control.

When co-workers join IKEA, they record the days and times when they are consistently available to work (e.g. Monday-Friday, 9AM-5PM). Managers use this availability to set co-workers' schedules, which they should receive at least 3 weeks before their shifts. Co-workers' hours are determined by a combination of their hours level, which specifies the range of hours that a co-worker will work each week, and the amount of labor hours that managers are budgeted.

Once IKEA co-workers submit their initial availability to store managers, they are rarely able to change that availability. IKEA co-workers can submit requests

to temporarily update their availability, but must do so through a paper form that is signed by a manager. It is similarly difficult for co-workers to swap shifts with other co-workers, which requires another cumbersome process. Moreover, co-workers are unable to supplement their hours by picking up shifts that have not been covered by their co-workers. The combination of all of these factors creates the relatively high predictability, low control, scheduling environment which is indicated in Figures 2 and 3.

IKEA uses the Kronos Workforce Central software to assign and manage scheduled shifts. Before the Self-Scheduling Intervention, managers held full control over setting schedules through Kronos and any changes to availability, shift swapping, or requests for coverage occurred through paper-based systems requiring manager involvement and approval. The paper form required signatures from the co-worker and manager involved in the schedule change. Shift swapping was particularly tedious as it required signatures from both co-workers involved

in the swap and both of their managers. All schedule modifications required the in-person delivery of this form to a store staff planning coordinator for documentation purposes. The Self-Scheduling Intervention leverages new tools available in Kronos to grant co-workers more schedule control and flexibility through the roll-out of four new features, described below.

The Intervention: Giving Co-workers More Control over Changing Availability and Schedules

The broad goal of the IKEA intervention is to enhance co-workers' schedule control through the introduction of four new Kronos features.

1. Updating Availability. Co-workers provide general availability at the time of hire, but this availability to work is likely to change over time, on multiple cadences including from year-to-year, season to season, and even month-to-month depending on such factors as school schedules, caregiving needs, and community obligations. The status quo system required that co-workers fill in a paper form and obtain their manager's signature to update their availability to account for these types of changes.

The intervention streamlines this process. Before schedules are posted, co-workers are now able to change their availability in Kronos. The software allows co-workers to view the hours in which they are scheduled as being available or unavailable over the following two weeks. With the updated intervention features, co-workers can select hour blocks and directly request that they become available or unavailable during those times. Co-workers can also leave an explanatory note indicating the reasons behind, and/or specifics about the timing of, their availability change. Increasing one's availability is automatically approved, whereas moving from available to unavailable can be initiated by co-workers in Kronos but still requires manager approval.

2. More Control over Shift Swapping. Updating availability provides co-workers with control over their work schedule before it is published. However, conflicts may arise between scheduled work shifts

and non-work obligations even after a work schedule is published. While co-workers may "call-out" or use PTO in such instances, the intervention offers co-workers the ability to swap shifts with other co-workers in order to better align their work schedules with other obligations. The status quo required both co-workers who wanted to swap shifts to fill out a paper form and then to get a signature of approval from both of their managers.

The intervention aims to make this process easier. In Kronos, co-workers are allowed to swap shifts after a schedule is posted but before a shift takes place, provided it does not create a rule violation (e.g. outside of availability or into a shift for which they are not qualified in terms of duties). To do this, co-workers can use the software to view the date, start time, end time, and duration of other co-workers' shifts. They can then select one of those shifts and submit a request for a swap. The other co-worker then receives that request on their Kronos portal with information including the time, duration, and date of the shift in addition to who requested it. Individuals who receive a shift swap request can choose to accept or reject it. Importantly, these changes will not require manager approval, and avoid the inefficiencies of filling in a paper form.

3. Picking up open shifts. While swapping provides a channel to obtain flexibility in the timing of hours, holding the number of scheduled hours constant, co-workers may also value the ability to obtain additional hours beyond those that they are originally scheduled for. Under the status quo, IKEA co-workers would need to contact their department leader, fill out a paper schedule change request form, ask their manager to sign that form, and finally drop off the form with a staff planning coordinator.

The intervention again aims to simplify this process. On Kronos, co-workers can view the shifts that need to be worked in their unit during a given week and which of those shifts are unfilled. Once they have identified an unfilled shift, co-workers can select that time block and request that it be added to their schedule. This request is then sent to the co-worker's manager, who typically approves the change as long as the extra shift does not create a rule violation (e.g. going over one's allotted weekly hours).

4. Requesting Shift Coverage. Finally, co-workers may face unforeseen conflicts that prevent them from working a scheduled shift. Under the status quo, IKEA had no formal procedure that co-workers could use to request shift coverage. Instead, co-workers could “call out” (an absence), use PTO, or use paid sick time in the event that they could not work their scheduled shift.

The intervention allows co-workers to send direct requests to other co-workers for shift coverage through Kronos. To do this, co-workers use the software to view their scheduled shifts for the week, and then select whichever one they hope to have covered. Individuals then submit this request for coverage to their managers, who can choose to accept or reject it. While this process still requires co-workers to receive approval for shift coverage, the new Kronos features aim to streamline the process.

Together, these four tools are designed to increase IKEA co-workers’ work schedule control and work schedule flexibility by making it administratively easier for them to update their availability prior to schedule publication and then to swap shifts, pick-up open shifts, or find coverage once a work schedule has been published.

Implementation Preview #1

Originally, the plan was for the all of the new features to be accessible through both Kronos desktop and mobile. In practice, the new features could not be made accessible in Kronos mobile because the software requires such features to be shown to co-workers in both the intervention and comparison stores. As such, in order to preserve experimental integrity, co-workers who wanted to take advantage of the new features had to do so through Kronos Desktop.

Evaluating the Impacts of The IKEA Intervention: Study Design and Data Sources

Introducing the new Kronos scheduling features represented a departure from scheduling practices usually used at IKEA. To understand the difference that the Self-Scheduling Intervention made for worker and business outcomes relative to the company’s status quo practices, IKEA worked with the Shift Project research team to identify a set of intervention store locations and a matched set of comparison stores to represent conditions in the absence of the Self-Scheduling intervention.

Below, we describe the hypothesized effects of the Self-Scheduling intervention, then the data sources and planned research design for evaluating the intervention.

Hypotheses

We develop two hypotheses about the effects that the IKEA intervention will have on co-workers and the organization.

Hypothesis 1: The addition of scheduling flexibility features at intervention stores will have positive outcomes for co-workers including improved mental health and sleep quality as well as decreased work-life and work-family conflict.

Hypothesis 2: Increased schedule flexibility in intervention stores will have positive effects on key business outcomes such as turnover, aggregated co-worker productivity, and customer-to-visitor ratio.

Data

To evaluate the Self-Scheduling Intervention at IKEA, we analyze multiple sources of data from fifteen IKEA USA store locations. The data sources are described below.

Administrative Data

We draw on multiple administrative datasets linked at both the store and co-worker level to capture worker turnover and schedule stability. First, we access the full set of work scheduling data, including initial schedules and schedule edits for co-workers at IKEA. Second, we draw on a timekeeping dataset at the person-shift level, which provides documentation on co-workers' actual punch times in and out of IKEA each time they went to work at the store. Third, we analyze data on the use of the four intervention scheduling tools that were deployed in the intervention stores (schedule availability updates, shift swaps, picking-up open-shifts, and requests for coverage). Fourth, we examine data on worker absences and PTO usage.

We link these fine-grained data to each other as well as to three data sources that are structured at a higher-level of aggregation. First, the “movements/actions” database records promotions, hires, and departures, including wage information, hours level, and the action's date. Linking this documentation of movements/actions with the timekeeping data allows us to analyze how greater schedule control may relate to co-worker retention at IKEA. Second, a dataset containing information on co-workers' gender, ethnicity, race, marital status, and age at the date of hiring grants us the opportunity to understand how dynamics may differ depending on demographic characteristics. Finally, in addition to these datasets, we received data from IKEA containing key performance indicators such as store-level sales, visitors, and customers.

Table 1. Descriptives for Survey Respondents v. Non-respondents

Variable	Survey Respondent Mean or %	Non-Respondent Mean or %	Difference	T-Test P-Value
Demographic Variables				
Age (Years)	41.5	38.47	0.63	0.09
<i>Gender</i>				
Male	42.5%	50.5%	8.04%	0.00
Female	57.4%	49.1%	8.29%	0.00
Non-binary	0.0%	0.4%	0.38%	0.32
<i>Race/Ethnicity</i>				
White	53.8%	38.0%	15.8%	0.00
Black	18.3%	25.7%	7.4%	0.00
Hispanic	15.5%	22.2%	6.7%	0.00
Asian	6.6%	8.1%	1.5%	0.11
Indigenous	0.8%	0.4%	0.4%	0.18
Multiracial	4.3%	5.5%	1.2%	0.23
Job Characteristics				
Hour Level 1 (12-20 Hrs)	9.8%	18.9%	2.2%	0.15
Hour Level 2 (20-34 Hrs)	31.0%	38.2%	0.7%	0.44
Hour Level 3 (34-40 Hrs)	43.1%	31.7%	2.3%	0.17
Team Lead (40+ hrs)	16.0%	11.2%	0.7%	0.29
Hourly wage (\$)	22.2	21.54	0.40	0.14
N	612	2413		

Source: IKEA Administrative records data.

Notes: Table includes data from 3,025 co-workers across 15 IKEA stores in the U.S. Respondents were surveyed between September and October 2022.

Survey Data

In addition to these administrative data sources, IKEA staff administered surveys to co-workers at the selected store locations between September 27th, 2022 and October 23rd, 2022. To collect survey responses from co-workers, IKEA staff sent emails to co-workers notifying them of the survey roughly one week before it was launched. IKEA staff additionally placed posters and advertisements to promote the survey in breakrooms and other areas that are frequented by co-workers. IKEA co-workers could access the survey by scanning a QR code using their phone, or through links that were sent to them via emails. IKEA staff sent reminders to co-workers via email each week the survey was active. Co-workers also received a reminder to take the survey on the day before it was closed.

The survey data serve as a key complement to the administrative data by capturing respondents' reports of work-life conflict, health and wellbeing, financial insecurity, as well as co-workers' own assessments of work schedule control and quality.

A total of 955 co-workers completed the survey. However, the first 227 survey responses were not use-able because the survey inadvertently failed to capture the identification variable needed to link co-workers with their store location. Another 116 respondents were in salaried manager positions, for which the intervention was not applicable. After removing these co-workers, our final sample size was 612 respondents out of a population of 3,025 hourly co-workers at the 15 store locations included in the study. The final response rate was 20.2%.

We gauge survey response bias by linking the baseline survey data with the administrative data on co-workers demographic characteristics. Table 1 shows that survey respondents were similar to non-respondents in terms of hours level (stipulating usual minimum and maximum weekly work hours), age, and hourly pay. Survey respondents and non-respondents differed in their race/ethnic identity. Survey respondents were more likely than non-respondents to identify as white (54% v 38%) and less likely to identify as Black (18% v 25%) or Hispanic

(15% v 22%). A similar share of respondents and non-respondents were Asian, Indigenous, or Multi-Racial. With regards to gender, survey respondents were more likely than non-respondents to be female (57% v 49%).

Outcome Measures

We define a set of co-worker and business outcome measures from the administrative and survey data. Baseline survey data has been collected from co-workers at intervention and comparison stores prior to the intervention, and will be collected in follow-up surveys in December 2023.

Work Schedule Control and Notice. The baseline and follow-up surveys ask IKEA co-workers to report on several measures of work schedule control: the ease of updating their availability, the ease of swapping shifts, the extent of control over the number of hours worked, and the extent of input into work start and end times. Co-workers are also asked to report on whether they would prefer to work more hours at IKEA and the amount of advanced notice they receive of their work schedule.

Work-Life Conflict. Work-life conflict is captured with four surveys items asked of all IKEA co-workers. Co-workers are asked to report how often job demands interfere with personal life, how often job demands interfere with family caregiving, whether they have schedule flexibility to handle family needs, and how difficult it is to make commitments outside of work. One additional survey item is targeted to co-workers who are enrolled in school and asks whether their work schedule makes it hard to attend class and keep up with school work. Finally, co-workers with school-aged children are asked whether their work schedule interferes with attending children's school events and activities.

Health and Well-Being. To gauge worker health and well-being before and after the intervention, surveys ask co-workers to report on their overall level of happiness, on how often they experience each of six types of psychological distress (the Kessler-6 scale), on their sleep quality, and on their overall health on a standard 5-point scale ranging from fair to excellent.

Financial Well-Being: The survey asks co-workers to report on how difficult it is to pay their bills in a typical month, and about how often they know the exact amount of their next paycheck.

Business Outcomes. Using administrative records from IKEA, we will measure business outcomes related to absenteeism, co-worker turnover, and business performance. We will gauge absenteeism from the

company’s scheduling and time-clock data. The primary turnover outcome is the month individual co-workers left their job at IKEA, which is documented in the firm’s movements/actions administrative dataset. We plan to evaluate store productivity using metrics such as the ratios of store customers to store visitors, total sales to transactions, and store sales to labor hours. All of these business outcomes are measured at the store-day level.

Table 2. Schedule Quality and Well-being at Baseline

	Mean or %
Schedule Quality Variables	
Workers Can Easily Update Availability (agree/strongly agree)	54.7%
Workers Can Easily Swap Shifts (agree/strongly agree)	31.2%
Workers Know Their Schedule in Advance (agree/strongly agree)	88.1%
Have Worked At Least Two Unpreferred Shifts	52.3%
Some/A Lot of Control Over Number of Hours Worked	41.6%
Employee Has Some Input in How Shift Start Times Are Decided	15.1%
Would Like to Work More Hours (agree/strongly agree)	40.2%
Have Called Out on At Least Two Shifts	31.5%
Work-Life Conflict Variables	
Demands of Job Have Interfered With Personal or Family Life At Least	63.5%
Work Conflicts With Family Caregiving Responsibilities (often/always)	18.1%
Enough Schedule Flexibility to Handle Family Needs (often/always)	48.7%
Difficult to Make Commitments Outside of Work (often/always)	28.9%
Among Students, Job Makes it Difficult to Meet School Responsibilities	39.7%
Among Parents, Job Makes it Easy to Attend Children's School Events	51.8%
Health and Well-Being Variables	
General Health (good/very good/excellent)	65.3%
How Are You Doing (pretty happy/very happy)	63.2%
Psychological Distress Scale (0 = None, 24 = Extremely Distressed)	8.17
Good/Very Good Sleep Quality	27.0%
Financial Well-Being Variables	
Very Difficult to Pay Bills	21.9%
Workers Know How Much Money Will be In Their Paycheck (often/always)	21.7%
N	612

Source: IKEA co-worker survey, September to October 2022.

Table 2 presents descriptive statistics for the pooled sample of survey respondents. Demographic statistics are pulled from administrative data while all other outcomes are based on survey responses. The IKEA survey respondents are majority female (57%) and white (54%), with smaller shares of Black (18%), Hispanic (16%), Asian (7%), and other co-workers of color (5%). Co-workers have mean hourly wages of \$22.19 and nearly 75% of co-workers surveyed usually work between 20 and 40 hours while much smaller shares usually work less than 20 hours or greater than 40 hours.

Schedule quality outcomes from the survey confirm the premise that the IKEA scheduling environment is relatively high on predictability but low on control. We find that nearly 90% of survey participants agree that they get at least two weeks' advanced notice of their schedules. However, large shares of respondents report real limitations on their schedule control. Just 15% of co-workers report that they have at least some control over shift starting and stopping times and a bit more than half of co-workers report that it is easy to update their availability. Shift swapping is more challenging, with just 31% reporting that they can easily swap shifts. IKEA respondents also report a desire for more work hours, with only 42% reporting at least some control over the number of hours worked and 40% reporting that they would like to work more hours.

These scheduling experiences may then manifest in the work-life challenges. Two thirds of respondents report that the demands of their job interfered with personal or family life and fewer than half of respondents reported enough schedule flexibility to handle family needs. About a fifth of respondents reported that their work conflicts with family caregiving responsibilities and 29% found it difficult to make commitments outside of work. Finally, the survey suggests heterogeneity in co-workers' wellbeing and economic security, with two-thirds reporting being pretty or very happy, a mean of 8.2 on a psychological distress scale (ranging from 0=not at all distressed to 24=severely distressed), and just 27% reporting good or very good sleep quality. About a fifth of co-workers reported that it was very difficult to pay their bills.

Analysis

Evaluation Design: Intervention and Comparison Store selection

From the fifteen stores that were surveyed, five were chosen to receive the scheduling intervention while the other ten stores continued the use of status quo scheduling practices. These stores were selected through a collaborative decision-making process that involved discussions between the research team and IKEA representatives. Those discussions centered around choosing stores that would minimize confounding factors and obstacles that might taint the experiment. For example, IKEA representatives helped to identify stores in which they anticipated cooperation from store managers in collecting necessary data for the study. They also helped to single out stores with atypical business models (such as so-called "VAPS" stores which follow a quasi-franchise model) and ensured that these locations were excluded from consideration.

Implementation Preview #2

Two stores that were originally chosen to be in the intervention group were moved to the comparison group, because of pushback from management and technical difficulties in implementing the intervention at these locations. One store that was originally assigned to the comparison group was moved to the intervention group after another intervention location suddenly closed.

Pre-Intervention Comparisons and Trends

To evaluate the Self-Scheduling Intervention, we plan to use a difference-in-difference or event-study research design in which we compare outcomes for intervention and comparison store co-workers and stores before and after IKEA introduced its Self-Scheduling intervention. This research design assumes that IKEA Intervention and Comparison stores were following a similar trajectory (parallel

trends) on key outcomes prior to introducing the intervention. Below, we test this assumption by comparing trends in co-worker turnover at intervention and comparison stores. We also compare the balance between intervention and comparison stores on a wider set of outcome measures prior to the intervention.

Figure 4 shows turnover rates at stores assigned to intervention and to comparison. These rates are

nearly identical across both groups of stores. Both intervention and comparison locations see about half of co-workers terminating their employment at IKEA a little over a year after their hire date. Only approximately 40% of IKEA co-workers in both intervention and comparison locations stay in their jobs for more than two years. This rate is actually relatively low for the retail sector where many companies see turnover rates greater than 60% each year.

Figure 4. Turnover at Comparison and Intervention Stores

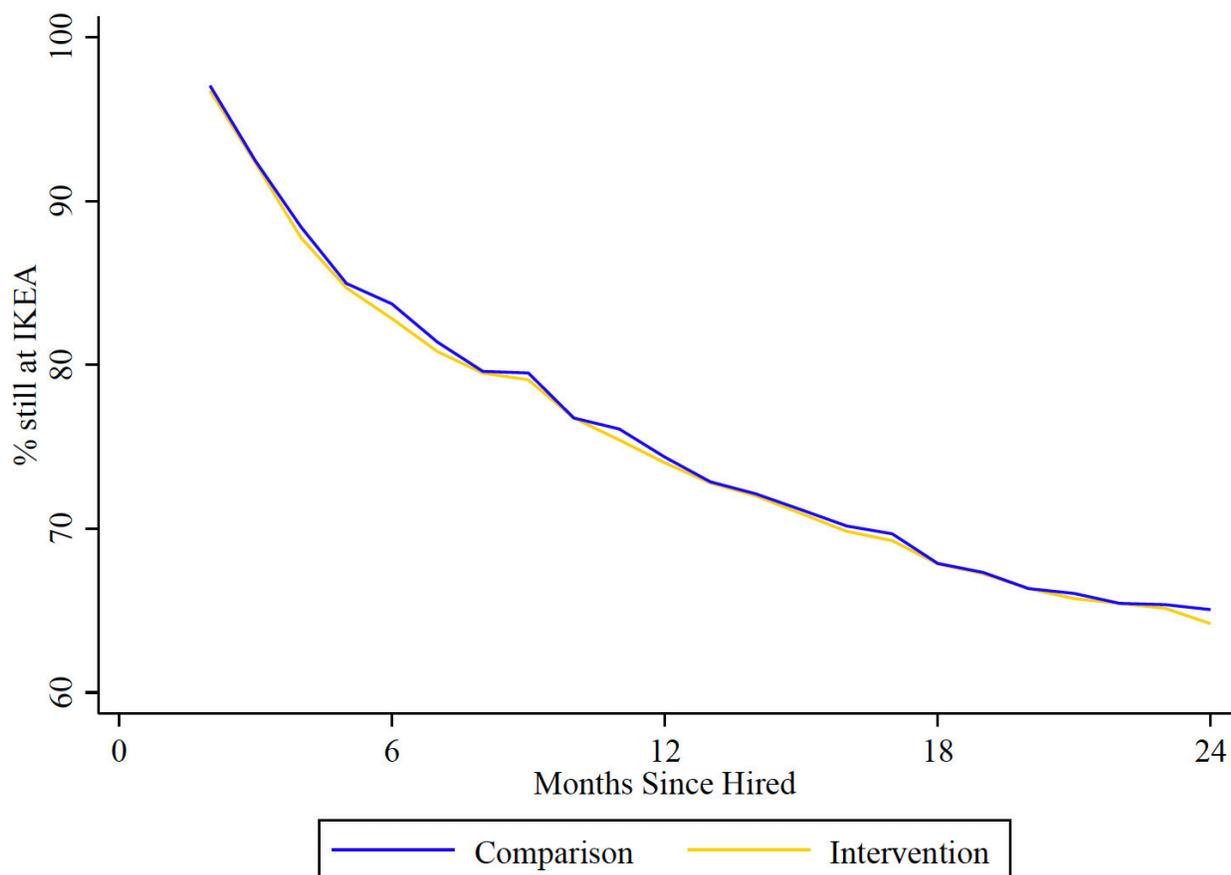


Table 3. Characteristics of IKEA workers at Intervention v. Comparison Stores

	Comparison Mean or %	Intervention Mean or %	Difference	T-Test P-Value
Demographic Variables				
Age (Years)	41.2	42.0	0.8	0.51
<i>Gender</i>				
Male	47.5%	37.2%	10.3%	0.01
Female	52.5%	62.2%	9.6%	0.02
Non-Binary	0.0%	0.7%	0.7%	0.16
<i>Race/Ethnicity</i>				
White	47.1%	62.5%	15.4%	0.00
Black	21.1%	15.4%	5.7%	0.08
Hispanic	21.8%	8.9%	12.9%	0.00
Asian	7.5%	4.1%	3.4%	0.08
Indigenous	0.7%	1.0%	0.3%	0.65
Multiracial	1.4%	7.2%	5.8%	0.00
Job Characteristics				
Hour Level 1 (12-20 Hrs)	11.4%	8.1%	3.3%	0.17
Hour Level 2 (20-34 Hrs)	32.3%	31.1%	1.2%	0.75
Hour Level 3 (34-40 Hrs)	43.4%	42.6%	0.9%	0.83
Team Lead (40 Hrs+)	12.8%	18.2%	5.4%	0.07
Hourly wage (\$)	38.9%	43.8%	4.8%	0.24
Schedule Quality Variables				
Can Easily Update Availability (agree)	57.0%	53.4%	3.7%	0.38
Can Easily Swap Shifts (agree)	29.3%	33.0%	3.6%	0.36
Know Schedule 2 Weeks in Advance (agree)	87.8%	88.6%	0.8%	0.77
Have Worked 2+ Unpreferred Shifts	49.4%	55.4%	5.9%	0.17
Some/A Lot of Control Over Number of Hours	38.9%	43.8%	4.8%	0.24
Has Some Input into Shift Start/End Times	16.8%	12.8%	4.0%	0.18
Would Like to Work More Hours (agree)	41.7%	38.5%	3.3%	0.43
Have Called Out 2+ Shifts	36.3%	27.2%	9.1%	0.02
Work-Life Conflict Variables				
Job Interfered with Personal/Family Life At Least Twice	65.8%	62.6%	3.2%	0.43
Work Conflicts With Caregiving Responsibilities (often/always)	18.9%	18.1%	0.8%	0.83
Enough Flexibility to Handle Family Needs (often/always)	48.5%	47.5%	1.1%	0.80
Difficult to Make Commitments Outside of Work (often/always)	28.6%	29.2%	0.6%	0.88
Among students, experience school/work conflicts	48.4%	32.4%	16.0%	0.19
Among parents, experience work/parenting conflicts	54.7%	46.5%	8.2%	0.41
Health and Well-Being Variables				
General Health (good/very good/excellent)	63.4%	68.2%	4.8%	0.76
How Are You Doing (pretty happy/very happy)	65.3%	61.4%	3.9%	0.35
Psychological Distress Scale (0 = None, 24 = Severely Distressed)	8.04	8.20	16.0%	0.74
Good/Very Good Sleep Quality	26.0%	27.4%	1.4%	0.71
Financial Well-Being Variables				
Very Difficult to Pay Bills	22.8%	21.8%	1.0%	0.78
Workers Know Their Paycheck Amount in Advance (often/always)	23.9%	18.5%	5.4%	0.12
N	316	296		

Source: Demographics and Job Characteristics from IKEA Administrative Records. Other measures from IKEA co-worker survey, September to October 2022.

Table 3 shows how intervention and comparison locations compare in terms of demographic composition and health and well-being outcomes. In general, we detect few significant differences across the two samples in terms of respondent characteristics and values on outcome variables as of baseline. However, at baseline, there are some notable differences in the demographic compositions of the two samples. There is a higher proportion of women in the respondents from intervention stores and a higher proportion of men amongst comparison store respondents. Comparison store respondents are additionally more racially diverse than those from intervention stores, where greater than 60% of respondents were white. Beyond gender and race/ethnicity, the two samples are well matched in terms of age, hourly wage, and hours level. In the survey data, the intervention and comparison stores are well balanced in terms of schedule quality, work-life conflict, and health and well-being outcomes.

Analytic Plan for the Evaluation

Our analysis will begin by assessing the degree to which the IKEA co-workers employed at the intervention store locations used the newly implemented schedule flexibility features. We plan to assess use of the new features first by drawing on a follow-up survey to be administered to co-workers that will include questions about individuals' experiences with the new scheduling features and how often they used them. Moreover, we will also draw on a combination of administrative datasets to augment the survey information on whether co-workers swapped shifts, requested coverage for shifts, and picked up open shifts using the new scheduling features.

After determining the degree of take-up of the intervention, we will evaluate its impact using a difference-in-differences estimation strategy. Difference-in-differences is a standard technique for analyzing whether two sets of group means are statistically significantly different when one group is exposed to an event and the other is not. In this case, the event will be the receipt of the bundle of features associated with the intervention and the outcomes will be the turnover, business productivity, and worker schedule quality/health and well-being variables discussed previously.

The models will control for individual, labor market, and store-level characteristics. We anticipate estimating models of worker outcomes drawn from the survey data as well as business outcomes drawn from administrative data.

Intervention Timeline

The new Self-Scheduling Intervention Kronos features were pilot tested in the one intervention store location beginning in late 2022. The pilot testing period was designed to ensure that the necessary training materials (including instructional videos) were accessible to co-workers, and that the new Kronos features worked as intended. Following the pilot period, the training was introduced in the four other intervention store locations in the Spring of 2023. By June of 2023 the Self-Scheduling Intervention features were available in 4 of 5 intervention locations, and the fifth intervention store introduced the new features in September of 2023.

Future Directions

From white-collar to warehouse, co-workers often struggle with limited schedule control and flexibility. The same software that has often been used to implement HR practices that result in schedule instability and unpredictability now offers a set of tools that might increase worker schedule control and flexibility. But, these tools, including availability updates, shift swapping, picking up open shifts, and requests for coverage and have not been rigorously evaluated. If these tools can effectively increase control and flexibility, then such gains may translate to significantly improve co-workers' mental and physical health and their risk of running into work/life and work/family conflict. For employers, greater schedule control and flexibility could influence important business outcomes such as turnover rates, worker productivity, customer satisfaction, and store sales.

This baseline report lays out the scheduling conditions at IKEA before the staggered adoption of this set of new work scheduling tools. The set of features were available in five IKEA US stores locations by June of 2023 and will eventually be extended to all US IKEA locations in 2024.

We will gauge the effects of the Self-Scheduling Intervention by drawing on follow-up surveys of IKEA co-workers in 5 Intervention and 10 Comparison store locations, planned for December of 2023, along with multiple sources of linked administrative data. These results and lessons from the implementation of the Self-Scheduling Intervention will be shared in a future report. This analysis will offer new evidence and insight on the question: Can the same platforms that appeared to promote schedule unpredictability and instability for many co-workers be re-deployed and re-imagined to foster work schedule control and flexibility to benefit co-workers and firms?

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