

# Disrupting Social Media Habits

— Technical Appendix

June 2025



KONKURRENCE- OG FORBRUGERSTYRELSEN

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**Disrupting Social Media Habits – Technical Supplement**

**Danish Competition and Consumer Authority**

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Disrupting Social Media Habits – Technical Appendix  
has been prepared by Danish Competition and Consumer Authority.

June 2025

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## Reading Guide to the Technical Supplement

This technical supplement accompanies the main report, *Disrupting Social Media Habits – A Field Experiment with Young Danish Consumers*, published by the Danish Competition and Consumer Authority (2025)<sup>1</sup>. It provides additional statistical analysis supporting the findings presented in the main report.

The supplement is intended as a reference for readers seeking further insight into the analytical framework, modeling strategies, and robustness checks underlying the study's conclusions. It includes formal descriptions of the statistical models applied to behavioral and survey-based outcomes, as well as supplementary results and figures not included in the main document.

This supplement does not stand alone but should be read in direct conjunction with the main report. Section references and terminology follow the structure of the primary publication to ensure consistency and traceability.

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<sup>1</sup> The report also exist in the Danish version: *Mindre Automatik og Mere Autonomi I Unges Forbrug af Sociale Medier, Konkurrence- og Forbrugerstyrelsen* (2025). The Technical Supplement is only available in English.

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# Appendix 1

## Survey Questions and Response Frequencies in the Baseline- and Follow-Up Surveys

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### 1.1 The Surveys

The first appendix contains the questions and the distribution of answers from the baseline and follow-up surveys conducted as a part of the initiation and finalization of the field experiment among young consumers and their social media habits reported in the main report.

The questions appear as figure headlines and the figures represents the answer distributions. The red bars represent answers from the first baseline survey, and the blue bars represent answers to the follow-up survey conducted after the experiment had finished. In total 269 participants answered the baseline survey, and 208 answered the follow-up.

The surveys followed a structure with eight blocks out of which the first always appeared first and the following seven appeared in random order.

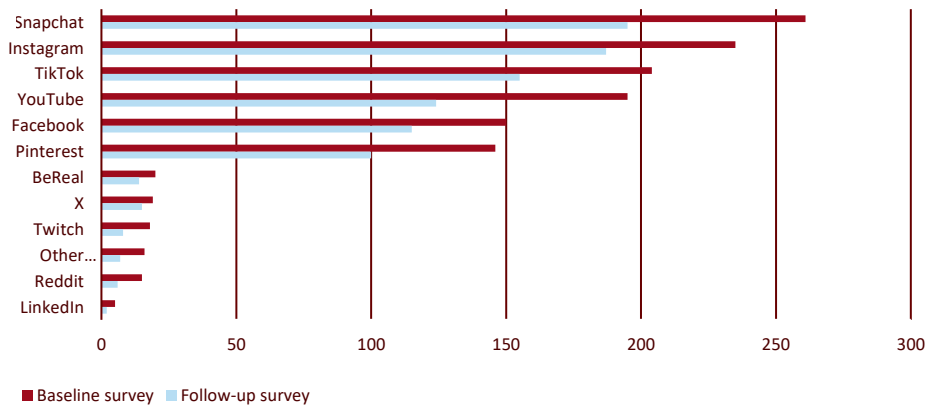
- Block 1: Social Media use Q1-Q3

- *Randomly present each block:*

- » Block 2: Social Interaction Lately Q4-Q7
  - » Block 3: Social Community in General Q8-Q10
  - » Block 4: Overuse and Retention Q11-Q17
  - » Block 5: Social Media Addiction Q18-23
  - » Block 6: Self-control Q24-Q28
  - » Block 7: Well-being Q29-Q30
  - » Block 8: Bullying Q31-Q32
-

Block 1: Social Media Use Q1-Q3

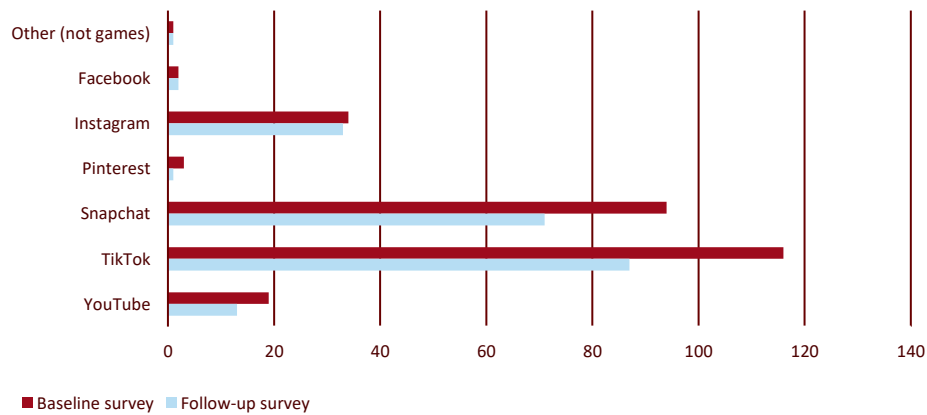
Figure 1.1 Q1. Which social media do you use on your phone? Choose all the social media apps you use.



**Note:** Baseline survey n=269; Follow-up survey n=208

Source: DCCA Field Experiment, 2024-2025-2025

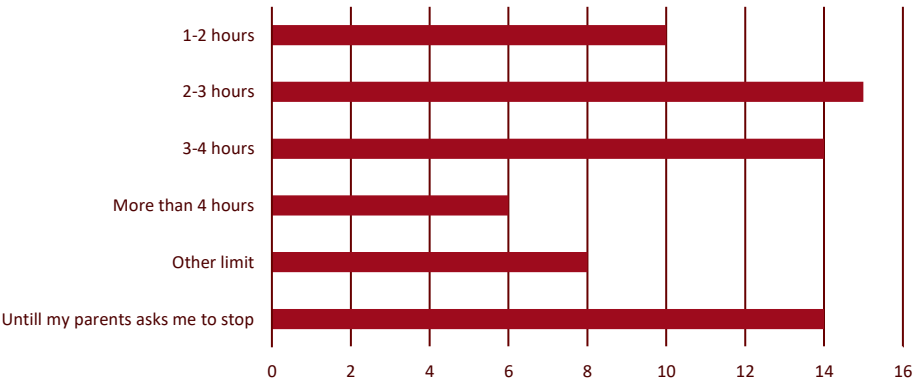
Figure 1.2 Q2: Which of your social media platforms do you use the most at the moment?



**Note:** Baseline survey n=269; Follow-up survey n=208

Source: DCCA Field Experiment, 2024-2025

Figure 1.3 Q3 (only in survey 1): How much screen time are you allowed to have on your phone each day?

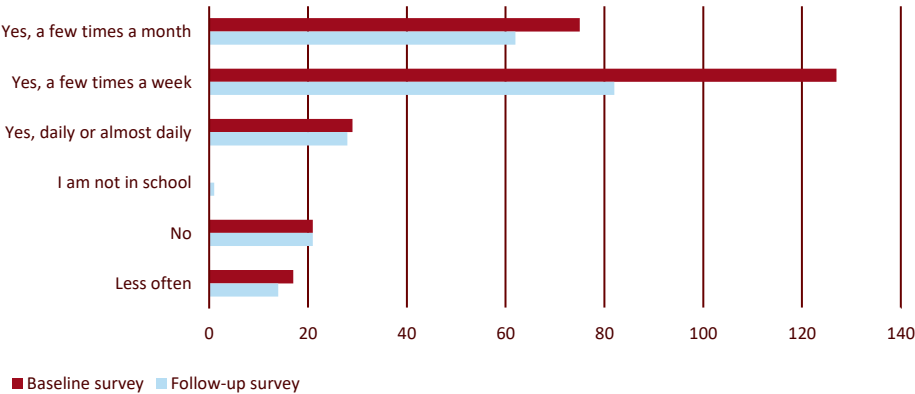


**Note:** 67 out of 247 respondents answer that they have some form of screen time limits in previous question.

Source: DCCA, Field Experiment, baseline survey, 2024-2025

**Block 2: Social Interaction Lately Q4-Q7**

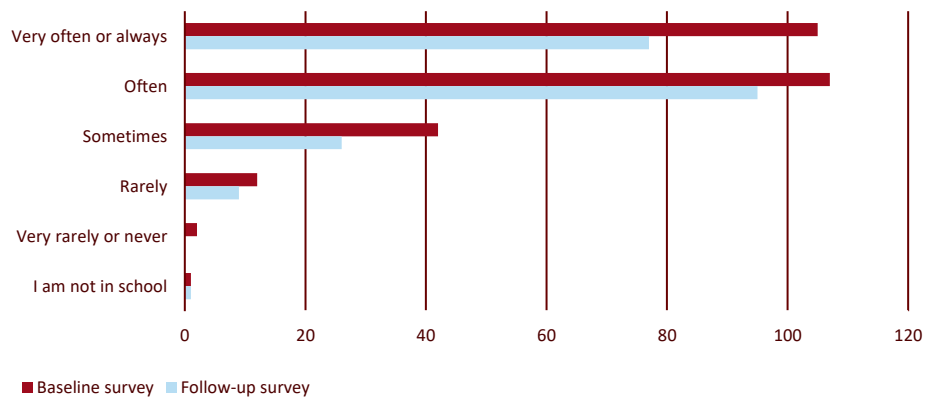
**Figure 1.4 Q4: Think back on the last 2 weeks. Have you spent time with classmates outside of school hours?**



**Note:** Baseline survey n=269; Follow-up survey n=208

Source: DCCA Field Experiment, 2024-2025

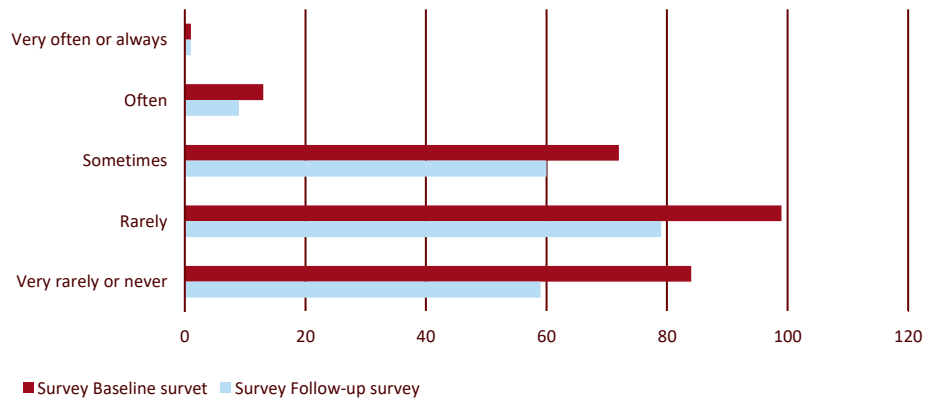
**Figure 1.5 Q5: Think back on the last 2 weeks. Have you felt included in the community at your school?**



**Note:** Baseline survey n=269; Follow-up survey n=208

Source: DCCA Field Experiment, 2024-2025-2025

Figure 1.6 Q6: Think back on the last 2 weeks. Have you felt lonely?

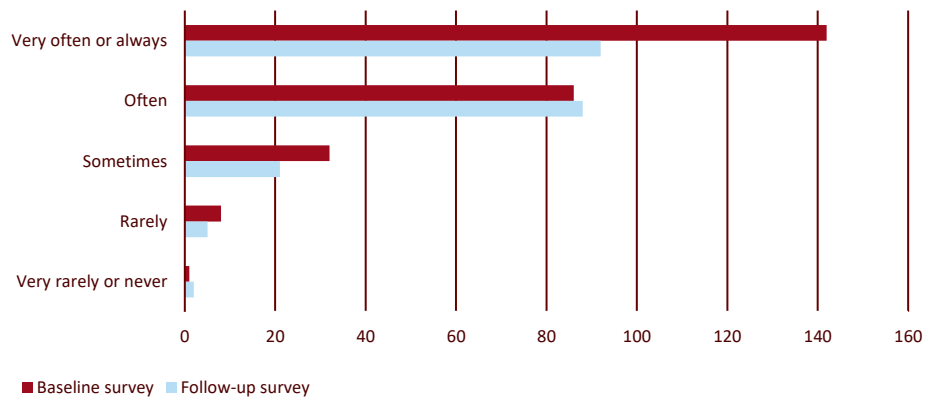


**Note:** Baseline survey n=269; Follow-up survey n=208

Source: DCCA Field Experiment, 2024-2025-2025

Figure 1.7 Q7: Think back on the last two weeks. Have you used social media to talk or chat with your friends in your free time?



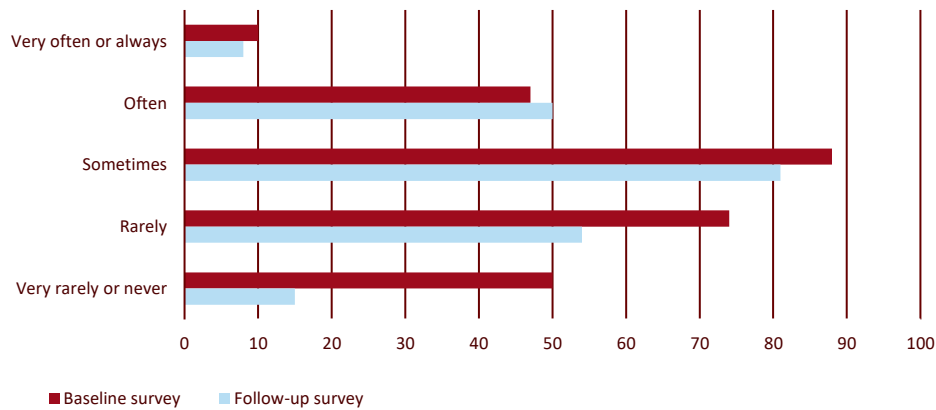


Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Block 3: Social Community in General Q8-Q10

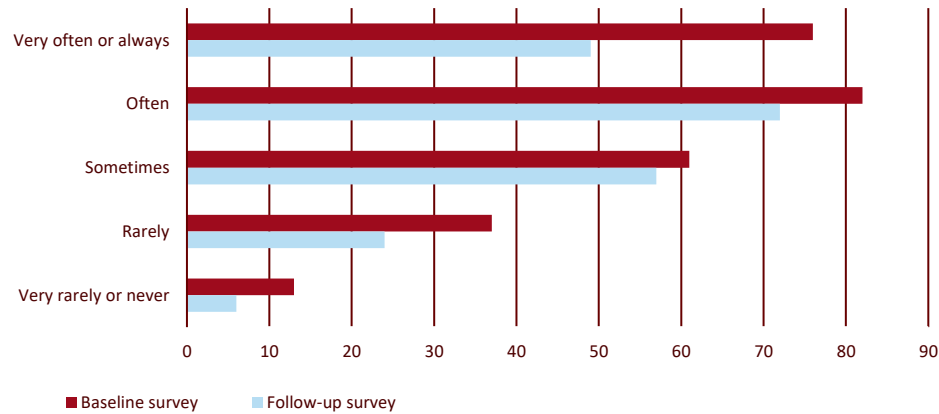
Figure 1.8 Q8: Do you experience being part of a community on social media that you are not part of elsewhere?



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

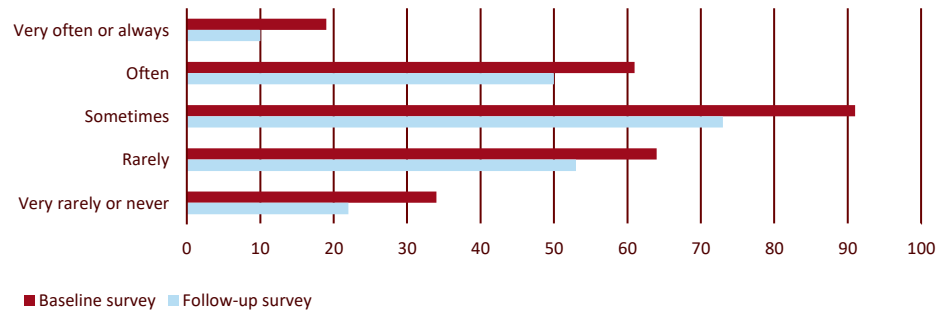
Figure 1.9 Q9: Would you feel less connected to your friends if you weren't on social media?



**Note:** Pre-survey n=247; Post-survey n=191

Source: DCCA Field Experiment, 2024-2025

Figure 1.10 Q10: Do you fear missing out when you are unable to use social media?



**Note:** Baseline survey n=269; Follow-up survey n= 208

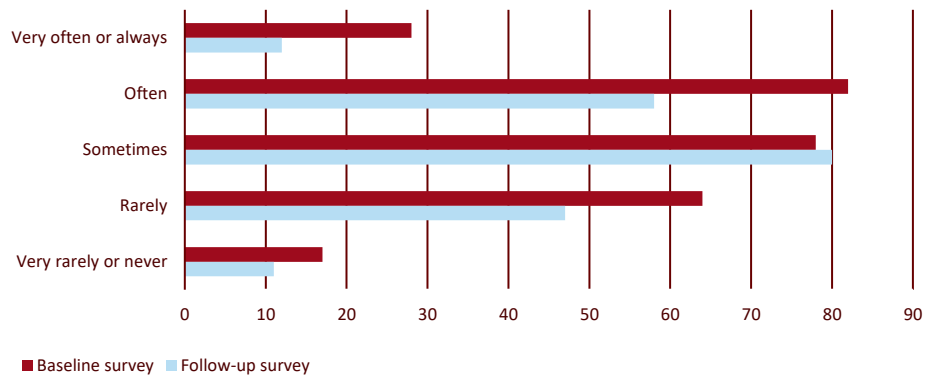
Source: DCCA Field Experiment, 2024-2025

**Block 4: Overuse and Retention Q11-Q17**

*Perceived Overuse is a construct used in the analysis based on a battery of three questions (Q11-Q13). The questions were identical to those used to measure overuse in Danish Competition and Consumer Authority (2025): Young Consumers and Social Media.<sup>2</sup>*

<sup>2</sup> Danish Competition and Consumer Authority (2025): Young Consumers and Social Media, page 22 explains the scale in detail.

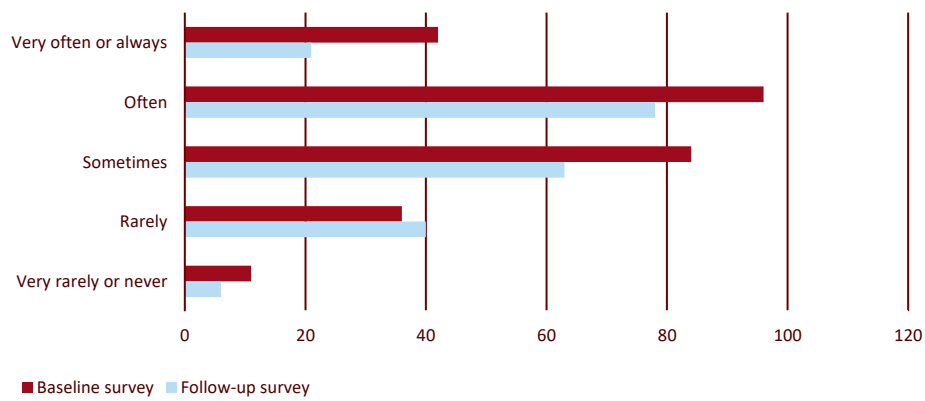
Figure 1.11 Q11: It can be difficult to stop using [favorite social media chosen in Q2] once I have started.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

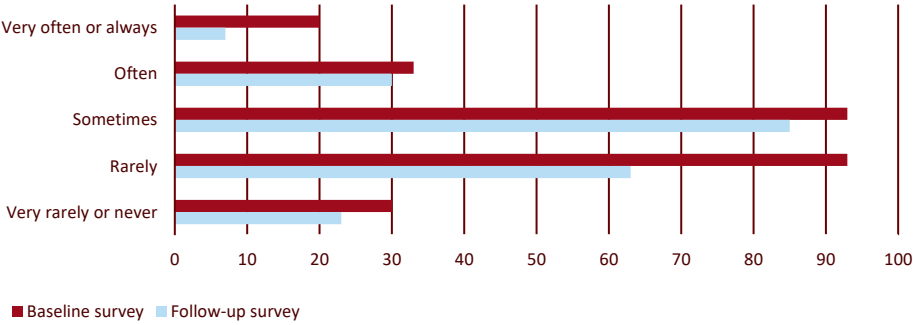
Figure 1.12 Q12: When I use [favorite social media chosen in Q2], I often spend more time than I really want to.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

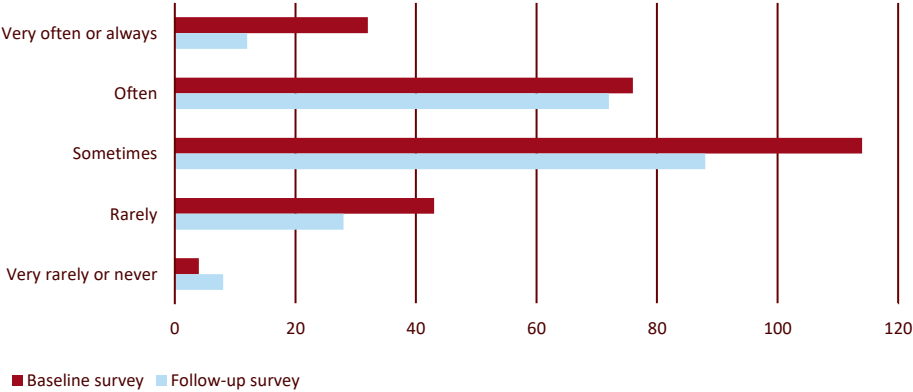
Figure 1.13 Q13: I regret the time I spent on [favorite social media chosen in Q2].



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

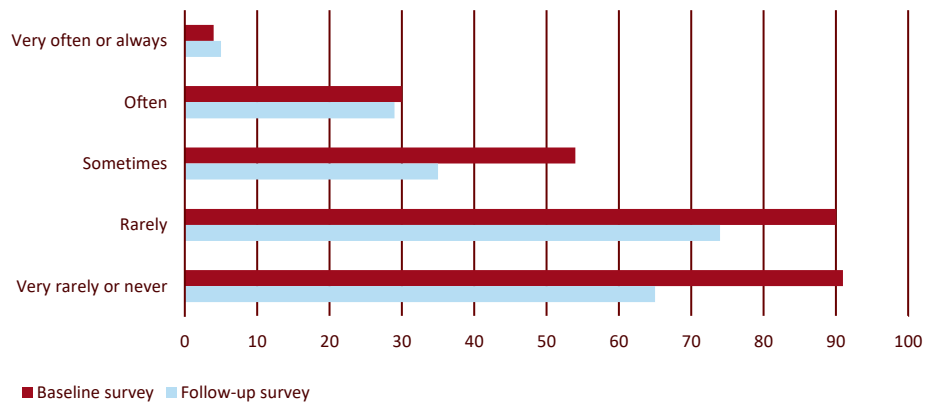
Figure 1.14 Q14: I feel in control of the time I spend on [favorite social media chosen in Q2].



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

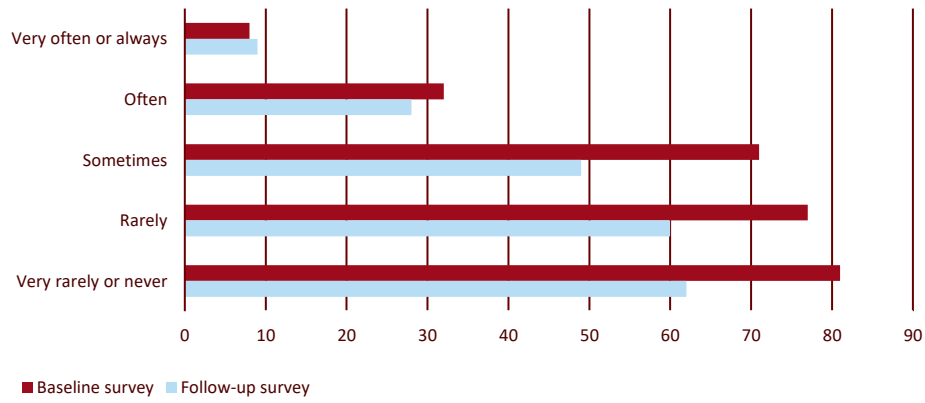
Figure 1.15 Q15: I think about whether something has happened on [favorite social media chosen in Q2], even when I'm doing something else.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

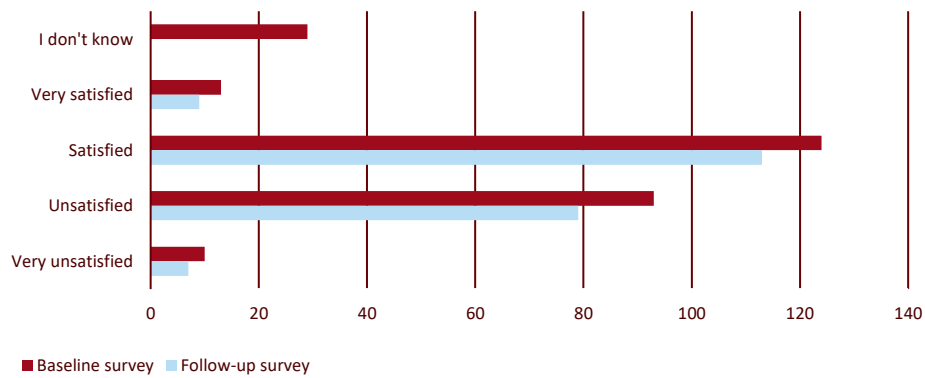
Figure 1.16 Q16: I get distracted by messages and notifications from [favorite social media chosen in Q2].



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Figure 1.17 Q17: Overall, how satisfied are you with your social media use?



Note: Baseline survey n=269; Follow-up survey n= 208

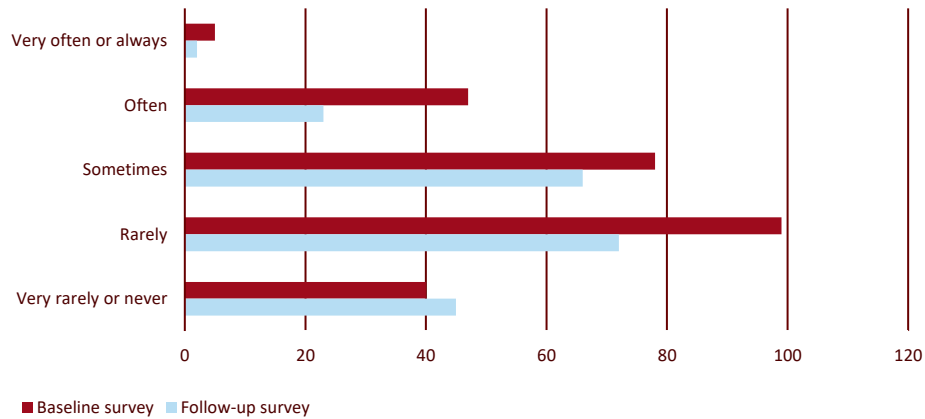
Source: DCCA Field Experiment, 2024-2025

**Block 5: Social Media Addiction Q18-23**

*Social Media Addiction is a construct based on the following six questions (Q18-22). The sum of the five questions reflect the respondent's tendency to social media addiction. The questions were identical to those used to measure social media addiction in Danish Competition and Consumer Authority (2025): Young Consumers and Social Media.<sup>3</sup>*

The following questions are about your experiences across all your social media platforms:

**Figure 1.18 Q18: Over the past few months, I have spent a lot of time thinking about social media.**

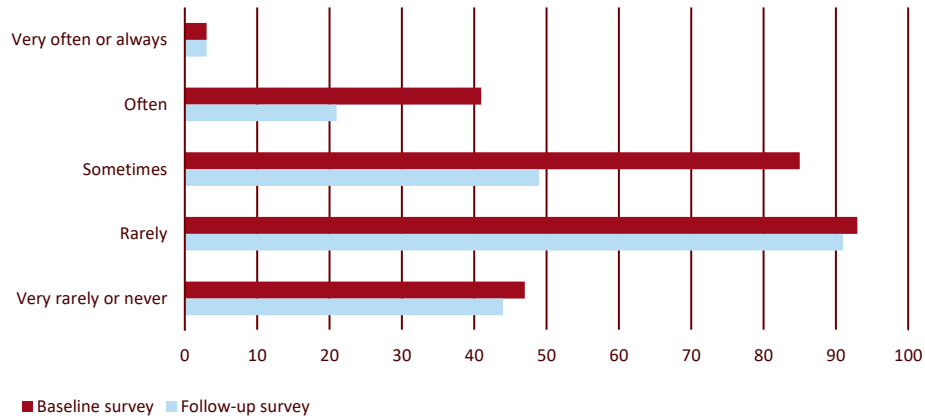


Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

<sup>3</sup> Danish Competition and Consumer Authority (2025): Young Consumers and Social Media, page 22-23 explains the scale in detail.

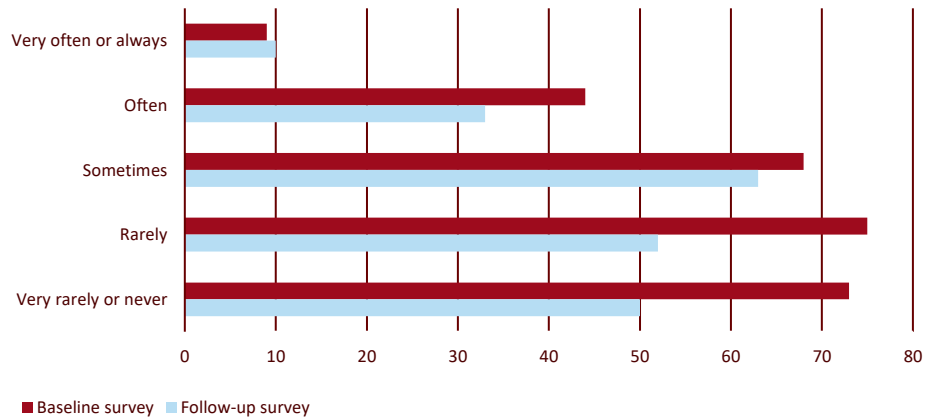
Figure 1.19 Q19: Over the past few months, I have felt a need to use social media more and more.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

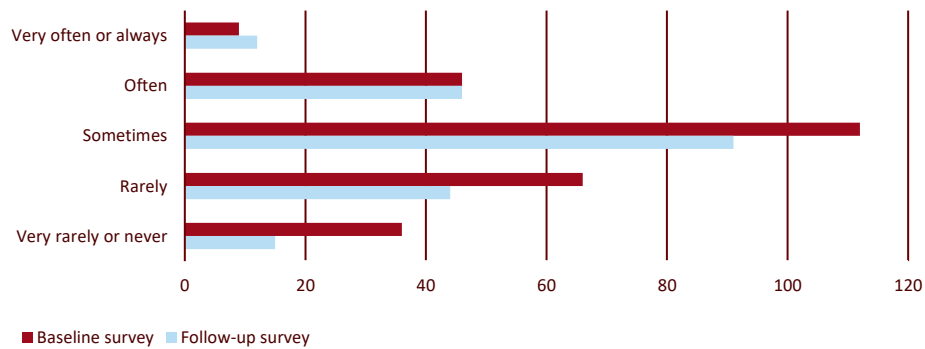
Figure 1.20 Q20: Over the past few months, I have used social media to forget personal problems.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

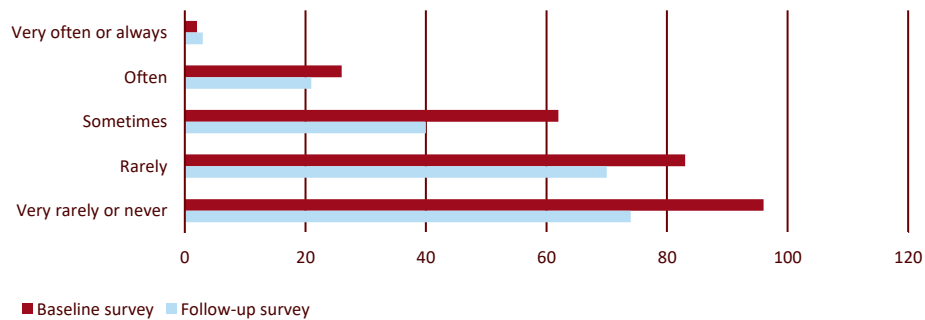
Figure 1.21 Q21: Over the past few months, I have tried to use social media less.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Figure 1.22 Q22: Over the past few months, I have felt restless or uncomfortable when unable to access social media.

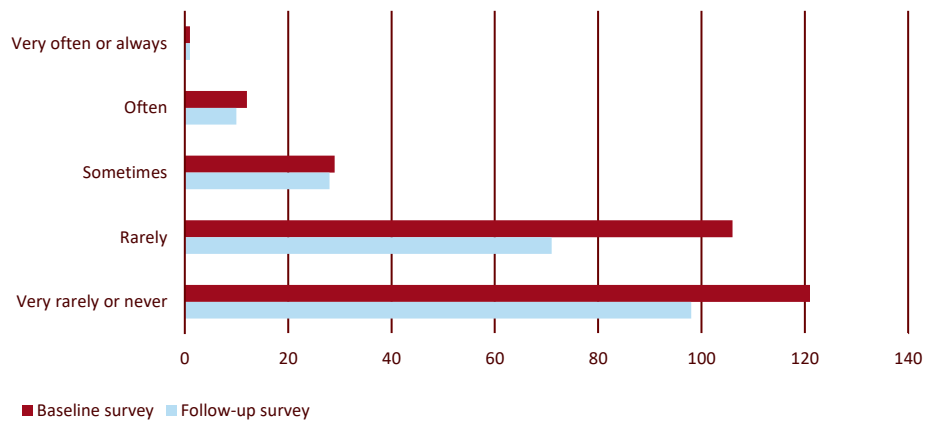


Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Figure 1.23 Q23: Over the past few months, I have used or thought about social media so much that it interfered with my schoolwork.





Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

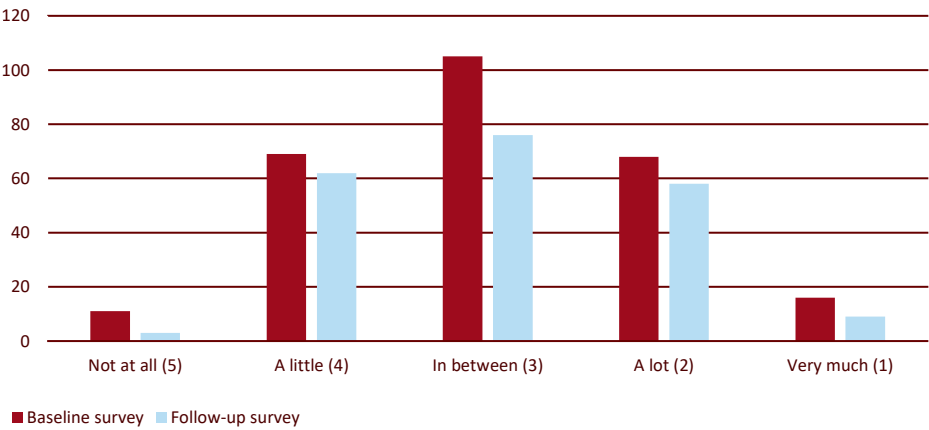
**Block 6: Self-control Q24-Q28**

Self-control is a construct based on the following five questions (Q23-Q27). Q24 is reverse coded compared to Q23, Q25-27. The sum of the five questions reflect the respondent's general level of self-control. The questions were identical to those used in Danish Competition and Consumer Authority (2025): Young Consumers and Social Media<sup>4</sup> to measure self-control levels.

For the next five questions consider how much each situation generally applies to you:

Figure 1.24 Q24: I find it hard to break bad habits

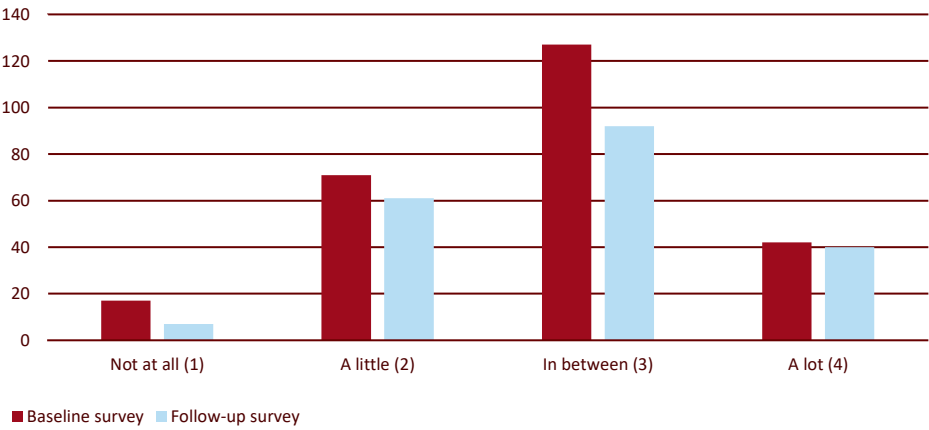
<sup>4</sup> Danish Competition and Consumer Authority (2025): Young Consumers and Social Media, page 19 explains the scale in detail.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

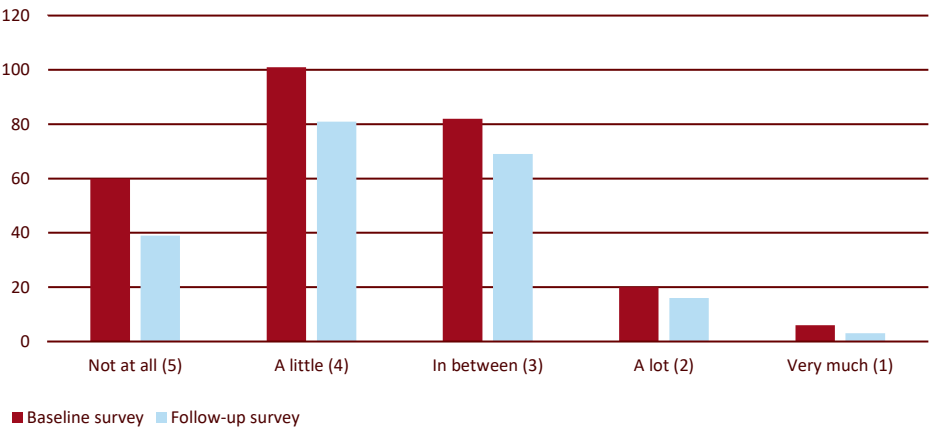
Figure 1.25 Q25: I am good at resisting temptations



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

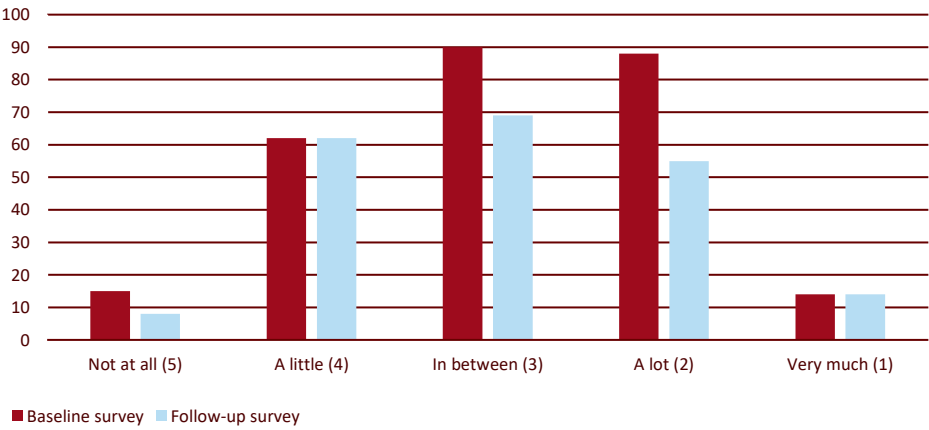
Figure 1.26 Q26: Sometimes I can't stop myself from doing something, even though I know it's wrong.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

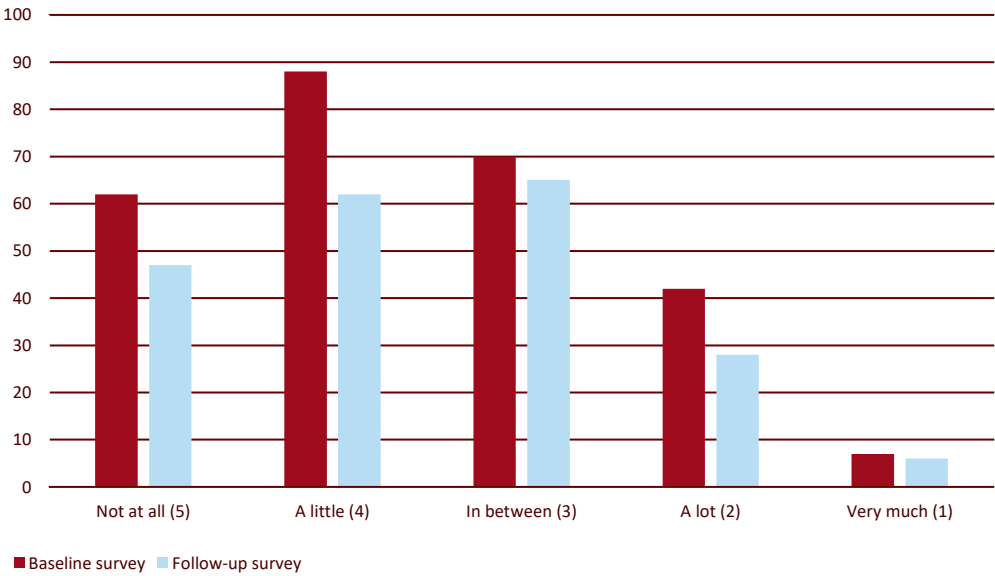
Figure 1.27 Q27: Entertaining and fun things sometimes get in the way of me completing the things I need to do.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Figure 1.28 Q28: I might do something that's bad for me if it's fun

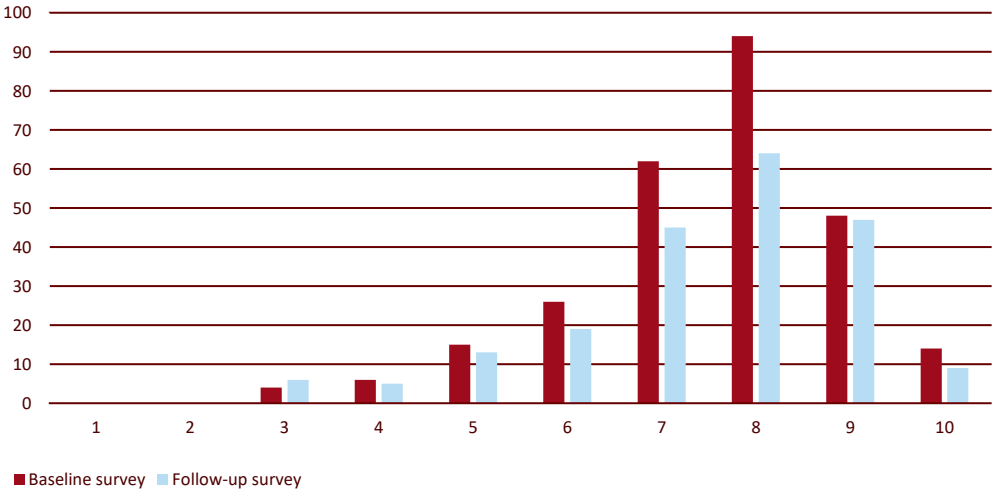


Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Block 7: Well-being Q29-Q30

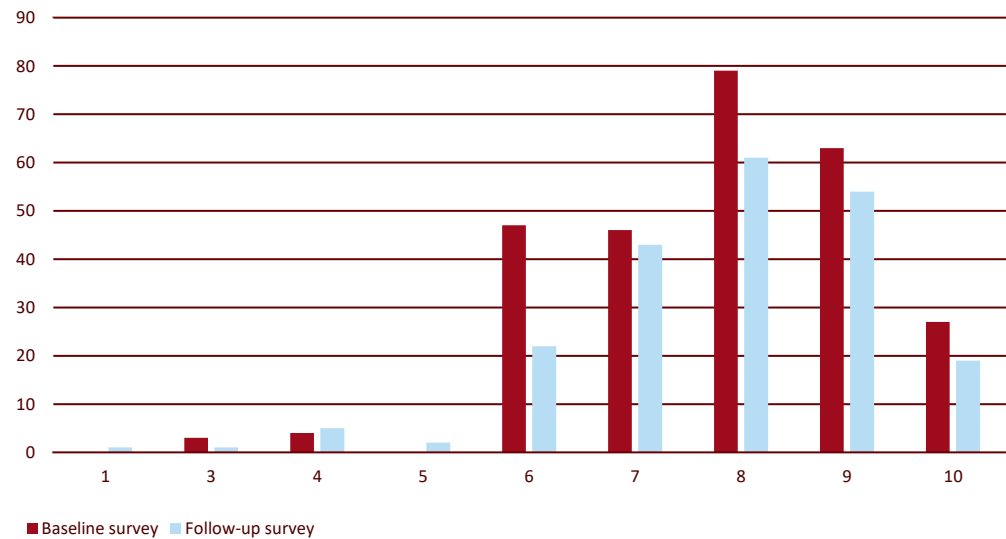
Figure 1.29 Q29: How good do you think your life is? Please answer using a ladder from 0 to 10, where 10 represents the best possible life and 0 the worst possible life.



Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Figure 1.30 Q30: How connected do you feel to your friends? Please answer using a ladder from 0 to 10, where 10 means completely connected to your friends and 0 means completely disconnected from your friends.

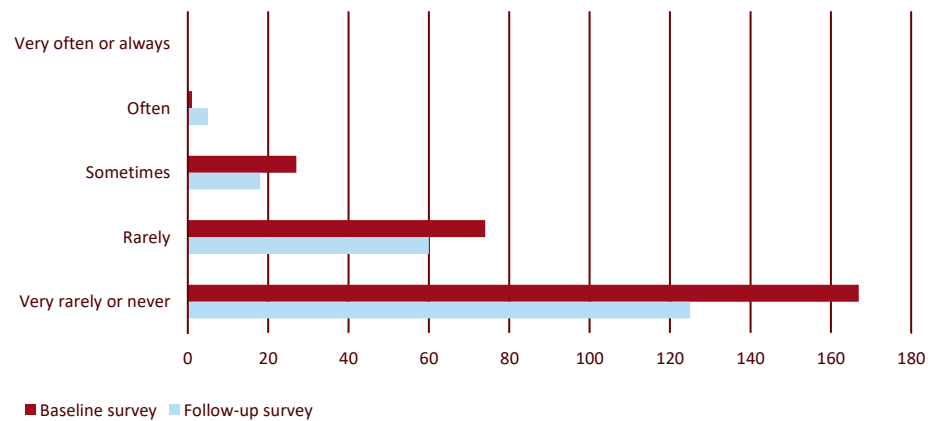


Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

Block 8: Bullying Q31-Q32

Figure 1.31 Q31: Do you experience being excluded or bullied?

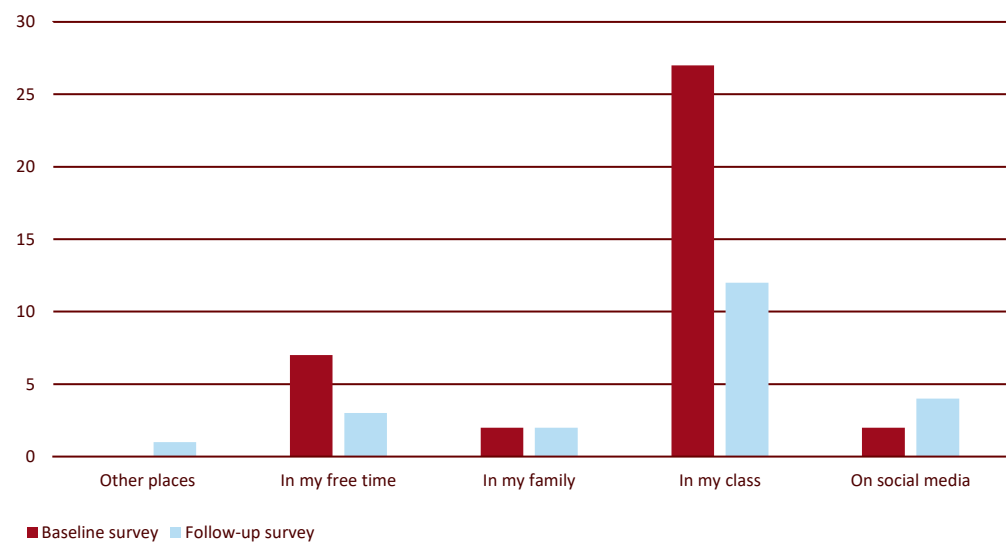


Note: Baseline survey n=269; Follow-up survey n= 208

Source: DCCA Field Experiment, 2024-2025

*Q31 was displayed if a participant answered “Very often or always”, “Often” or “Sometimes” to Q30.*

**Figure 1.32 Q32: In which situations do you experience being excluded or bullied? You may choose more than one answer.**



Note: Baseline survey n=28; Follow-up survey n= 23

Source: DCCA Field Experiment, 2024-2025

# Appendix 2

## Decision Screens and Interventions

Appendix 2 show the decision screens that participants in the three intervention groups: Reflection, Waiting and Planning met when they tried to access social media on their smartphones in the intervention period of the field experiment. Details of the three interventions and their design are explained in the main report.

### 2.1 The Reflection Group

Figure 2.1 Decision Screen with Response Options for the Reflection Question Shown to the Reflection Group

(a) Intentions Screen



**Note:** The decision screen to the intentions question. In contains 13 possible response options accompanied by an emoji. Emojis and answers were pretested on a similar sample as the experimental sample of 100 young consumers..

Source: Danish Competition and Consumer Authority's Field Experiment 2024-2025 and One sec

(b) Emotions Screen



**Note:** The decision screen to the emotions question. In contains 12 possible response options accompanied by an emoji. Emojis and answers were pretested on a similar sample as the experimental sample of 100 young consumers .

Source: Danish Competition and Consumer Authority's Field Experiment 2024-2025 and One sec

### 2.2 The Waiting Group

Figure 2.2 Decision Screen for the Waiting Group

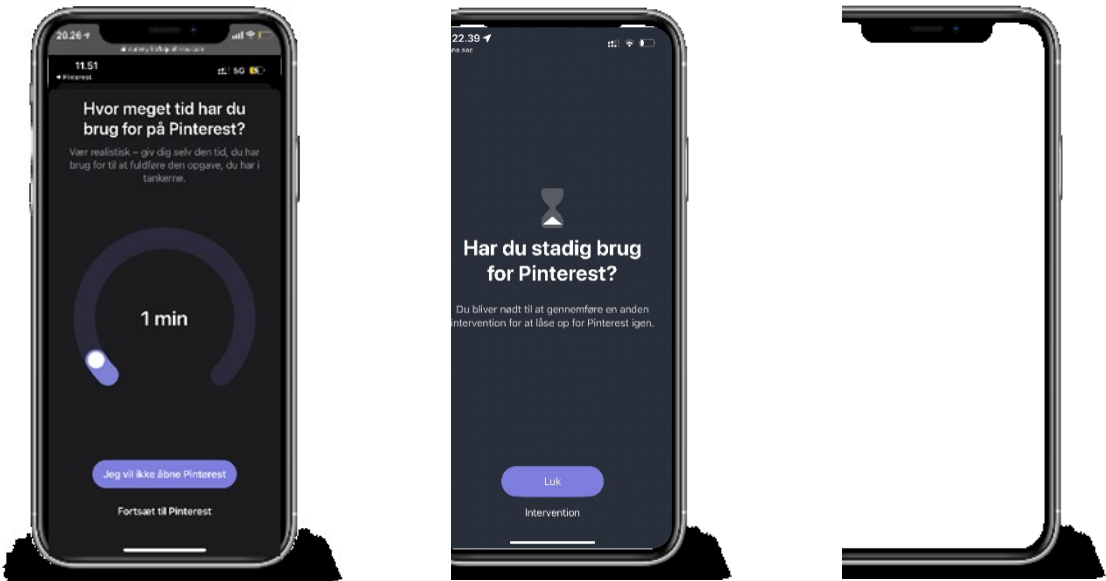


**Note:** Whenever a consumer attempts to open a social media app an animation tells the consumer that it is time to take a deep breath, while a blue screen moved up and down the screen for six seconds. Proceeding the waiting animation, the consumer is then given feedback about how many times they have accessed the given app the last 24 hours, asking them to decide whether they wish to access or dismiss their attempt to access the given app.

Source: Danish Competition and Consumer Authority's Field Experiment 2024-2025 and One sec

2.3 The Planning Group

Figure 2.3 Decision screen for the Planning Group



**Note.:** After entering the time goal for the current social media use participants could use social media participants were only met with the second decision screen if they reached their time goal. The third decision screen appeared if the participants asked for additional time on social media by pressing 'intervention'. A random effort task was activated if a participant chose to get more time, e.g. turning your phone three times to get access to the social media app again.

Source: Danish Competition and Consumer Authority's Field Experiment 2024-2025 and One sec



# Appendix 3

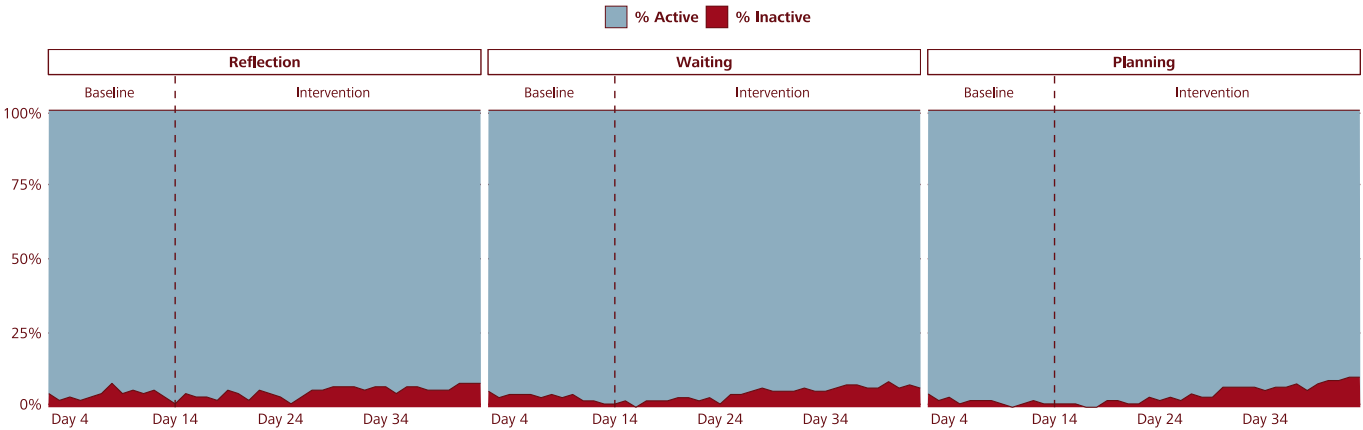
## Participant Attrition

Of the 269 participants included in the analytic sample, 247 remained behaviorally active through the final days of the intervention, yielding a quite low attrition rate of only 8.2 percent. Activity was defined as producing at least one valid app event (e.g., app open or close) during the final observation window.

Attrition patterns were similarly low across experimental conditions. In the Reflection group, 8.05 percent of participants (7 out of 87) dropped out of the study. In the Waiting group, attrition was slightly lower at 6.45 percent (6 out of 93 participants), while the Planning group showed a final op-attrition rate of 10.1 percent (9 out of 89 participants). These figures indicate strong overall engagement and minimal dropout over the course of the experiment.

Figure 3.1 visualizes participant activity over time, stratified by condition. Each panel plots the percentage of participants who remained active on each day of the 42-day study window. Daily percentages were computed as the number of participants producing any app event on that day divided by the total number of assigned participants in that condition.

Figure 3.1 Attrition rate for social media consumption throughout the study per condition



**Note:** Each panel shows the proportion of participants who remained behaviorally active on each study day, calculated as the number of participants with at least one recorded app event. Red areas represent the share of participants who were inactive on a given day, while blue areas represent those who remained active. Vertical dashed lines mark the start of the intervention phase (Day 14).

Source: *The Danish Competition and Consumer Authority's Field Experiment, 2024-2025*

# Appendix 4

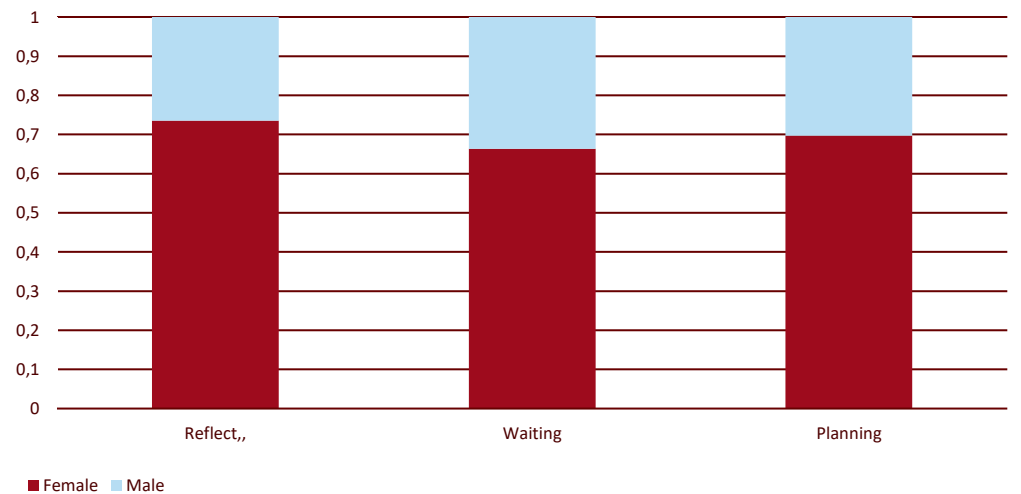
## Group Demographics

Appendix 4 display the demographic distribution of gender, age, educational grade level, region of residence for the three intervention groups: *Reflection*, *Planning* and *Waiting*.

First a distribution is presented as a graph after which the frequency table follows.

### Gender Distribution

Figure 4.1 Gender by Intervention Group



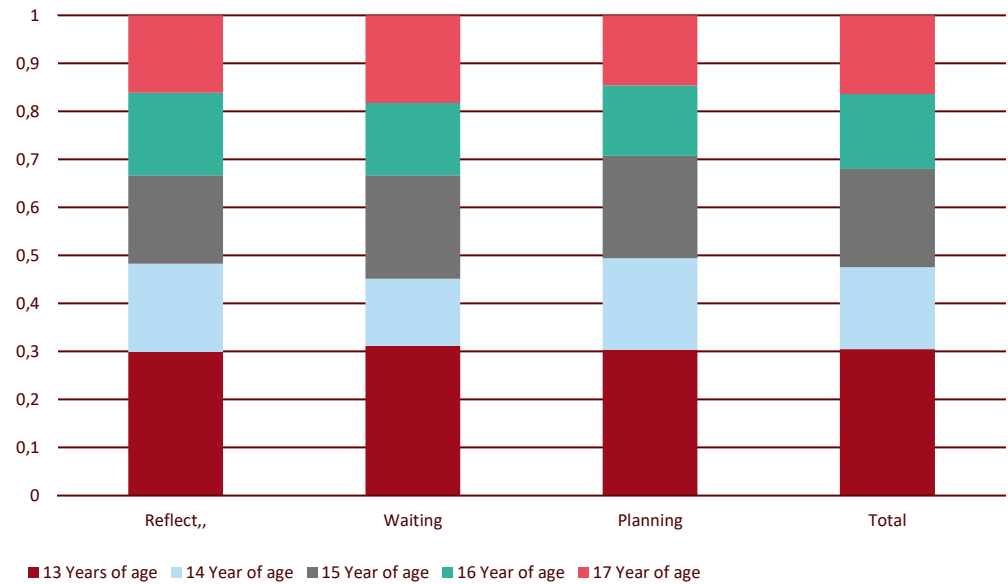
**Note:** N=269

Source: DCCA Field Experiment, 2024-2025

Gender	Reflection	Waiting	Planning	Total
Other	0	1	0	1
Percent	0.00	1.08	0.00	0.37
Female	64	61	62	187
Percent	73.56	65.59	69.66	69.52
Male	23	31	27	81
Percent	26.44	33.33	30.34	30.11
Total	87	93	89	269

Age Distribution

Figure 4.2 Age by Intervention Group



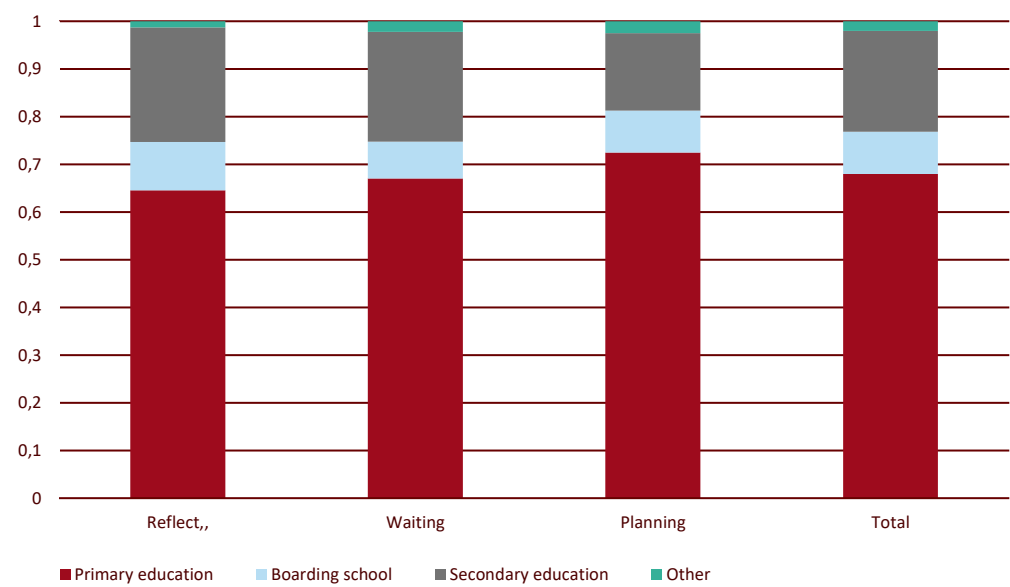
Note: N =269

Source: DCCA Field Experiment, 2024-2025

Age	Reflection	Waiting	Planning	Total
13 Years of age	26	29	27	82
Percent	29.89	31.18	30.34	30.48
14 Year of age	16	13	17	46
Percent	18.39	13.98	19.10	17.10
15 Year of age	16	20	19	55
Percent	18.39	21.51	21.35	20.45
16 Year of age	15	14	13	42
Percent	17.24	15.05	14.61	15.61
17 Year of age	14	17	13	44
Percent	16.09	18.28	14.61	16.36
Total	87	93	89	269

Grade Level Distribution

Figure 4.3 Grade Level by Intervention Group



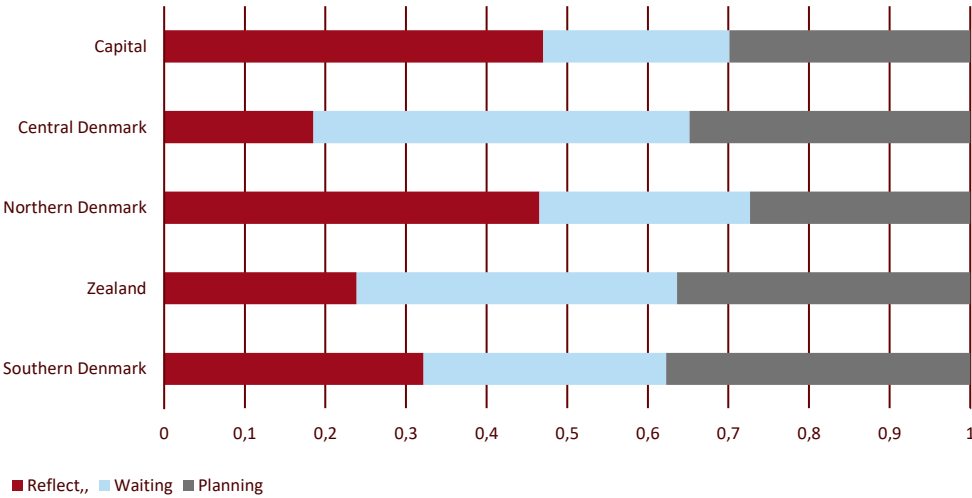
**Note:** N=250

Source: DCCA Field Experiment, 2024-2025

Grade level	Reflection	Waiting	Planning	Total
Boarding school	8	7	7	22
Percent	10.13	7.69	8.75	8.80
Other	1	2	2	5
Percent	1.27	2.20	2.50	2.00
Primary education	51	61	58	170
Percent	64.56	67.03	72.50	68.00
Secondary education	19	21	13	53
Percent	24.05	23.08	16.25	21.20
Total	79	91	80	250

Region of Residence Distribution

Figur 4.4 Regional Distribution by Intervention Group



**Note:** N=269

Source: DCCA Field Experiment, 2024-2025

Region	Reflection	Waiting	Planning	Total
Capital	40	21	26	87
Percent	45.98	22.58	29.21	32.34
Central Denmark	13	35	25	73
Percent	14.94	37.63	28.09	27.14
Northern Denmark	10	6	6	22
Percent	11.49	6.45	6.74	8.18
Zealand	9	16	14	39
Percent	10.34	17.20	15.73	14.50
Southern Denmark	15	15	18	48
Percent	17.24	16.13	20.22	17.84
Total	87	93	89	269

# Appendix 5

## App-Opening Frequency and Time Spend on Social Media per Hour by Day of the Week (Baseline)

App-opening frequency during the baseline period also revealed consistent daily and weekly rhythms, based on total counts of app opens aggregated across all individuals and days. On weekdays, the number of opens began to rise sharply around 07:00, fell slightly during school hours, and peaked between 15:00 and 22:00. This pattern likely reflects the rhythm of school and leisure time, with students beginning to use their phones before classes, returning during breaks or after school, and re-engaging heavily in the evening, as reported in chapter 3 in the main report.

There was more overall interaction with social media during the weekends. Saturday in particular stood out as the day with the highest total number of app opens. The number of opens began rising earlier in the day and remained elevated well into the evening. Between 15:00 and 22:00 on Saturdays, total app opens consistently exceeded 2,000 per hour. The single highest activity point was Saturday at 21:00, when users collectively logged 2,635 app opens—making it the busiest hour of the entire baseline period. Sunday followed a similar, though slightly muted, pattern, with high engagement particularly in the evening, cf. Figure 5.1.

Nighttime use remained consistently low throughout the week. After 22:00, activity declined rapidly, and between midnight and 06:00, app opens dropped to minimal levels.

Figure 5.1 Number of social media app opens per hour by day of the week (baseline period)

**Note:** Each tile represents the total number of app opens recorded across all participants during a specific hour and day across the two-week baseline period. Shading intensity reflects the volume of opens, ranging from lower (light blue) to higher (dark blue) frequencies. The grid illustrates aggregate patterns of engagement throughout the day and across the week, highlighting periods of concentrated app-opening activity.

Source: The Danish Competition and Consumer Authority's Field Experiment, 2024

This overall rhythm is further confirmed by the total time spent on social media during each hour of the day, shown in Figure 5.2. Here, cumulative active minutes across all participants and both weeks of the baseline period are summed into hourly blocks. The resulting pattern mirrors the one observed for app-opening frequency: clear afternoon and evening peaks, a pronounced Saturday surge, and near-complete disengagement during late-night and early morning hours. The alignment between frequency and time-based metrics reinforces the finding that social media use is tightly coupled to daily routines, with usage intensifying during hours of discretionary time.

Figure 5.2 Total Time Spent on Social Media by Day of The Week and Hour (Baseline Period)

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**Note:** Each tile represents the cumulative number of minutes spent across all participants during a given hour on each day, aggregated over the two-week baseline period. Darker shades indicate higher total time spent. The heatmap reveals clear temporal usage patterns: activity begins in the early morning, peaks during late afternoon and evening hours, and drops off sharply at night. Saturday displays the most sustained and intense use, particularly between 2 PM and 10 PM. These trends confirm that social media activity is closely aligned with participants' daily rhythms and is most intense during hours of leisure and availability.

*Source: The Danish Competition and Consumer Authority's Field Experiment, 2024-2025*

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# Appendix 6

## Chapter 4 Regression Models and Tables

The Following appendix contains all model specifications and regression tables for detailed overview of models presented in chapter 4 in the min report.

### Baseline Equivalence in App Use Behavior

We examined pre-intervention differences in social media use across experimental conditions to assess the comparability of groups at baseline. These analyses focused on three key behavioral indicators: total daily time spent, daily session frequency, and average session duration.

For daily time spent, there was no statistically significant difference between the Planning and Reflection groups (Coefficient = 0.005, SE = 0.141, z = 0.036, p = 0.972), nor between the Waiting and Reflection groups (Coefficient = -0.022, SE = 0.141, z = -0.159, p = 0.874). While these null results do not establish statistical equivalence, they indicate no detectable differences in average time use at baseline.

App opening frequency showed similar patterns. The Planning group did not differ significantly from the Reflection group (Coefficient = -0.002, SE = 0.119, z = -0.015, p = 0.988), nor did the Waiting group (Coefficient = 0.015, SE = 0.121, z = 0.121, p = 0.904). Session frequency at baseline thus appeared balanced across groups.

For average session duration, no statistically significant differences were found between Planning and Reflection (Coefficient = 0.114, SE = 0.131, z = 0.869, p = 0.384), or between Waiting and Reflection (Coefficient = 0.025, SE = 0.132, z = 0.192, p = 0.848). These results suggest that session length was also distributed similarly prior to intervention onset.

It is important to note that these baseline comparisons stem from the interaction models used to estimate intervention effects. Specifically, the baseline-period group contrasts correspond to the condition coefficients in the full models summarized below.

Taken together, the absence of statistically significant baseline differences supports the conclusion that the experimental groups were reasonably balanced with respect to key behavioral metrics prior to intervention. This strengthens the internal validity of the analyses, though formal tests of equivalence were not conducted.

### Daily Time Model Summary

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	4.974	0.148	33.703	0.000
Reflection Group	Reference Group			
Planning Group	0.005	0.141	0.036	0.972
Waiting Group	-0.022	0.141	-0.159	0.874
Males	Reference Group			
Gender: Female	0.155	0.116	1.336	0.181
Not Fall Break	Reference Group			
Fall Break	0.058	0.017	3.361	0.001
Region: Capital	Reference Group			



Region: Central Denmark	-0.144	0.146	-0.989	0.323
Region: Northern Denmark	-0.057	0.206	-0.276	0.782
Region: Zealand	-0.278	0.172	-1.620	0.105
Region: Southern Denmark	-0.345	0.164	-2.099	0.036
Education Stage: Primary Education	Reference Group			
Education Stage: Secondary Education	0.442	0.138	3.193	0.001
Education Stage: Boarding School	0.086	0.216	0.397	0.692
Education Stage: Others	0.146	0.177	0.826	0.409
Spline time term 1: Reflection Group	-0.091	0.111	-0.819	0.413
Spline time term 2: Reflection Group	-0.076	0.035	-2.151	0.031
Spline time term 1: Planning Group	-0.341	0.110	-3.098	0.002
Spline time term 2: Planning Group	-0.098	0.036	-2.735	0.006
Spline time term 1: Waiting Group	-0.256	0.105	-2.424	0.015
Spline time term 2: Waiting Group	-0.152	0.034	-4.498	0.000
Intervention period: Reflection Group	-0.073	0.041	-1.758	0.079
Intervention Period: Planning Group	-0.295	0.058	-5.050	0.000
Intervention Period: Waiting Group	-0.376	0.057	-6.603	0.000

Daily Time Moderation by Baseline Activity

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	5.054	0.099	50.916	0.000
Baseline Period: Reflection Group	Reference Group			
Baseline Period: Planning Group	0.121	0.097	1.249	0.212
Baseline Period: Waiting Group	0.005	0.097	0.050	0.960
Baseline Period: Reflection Group : Baseline Time Use	0.756	0.064	11.805	0.000
Baseline Period: Planning Group : Baseline Time Use	0.648	0.069	9.384	0.000
Baseline Period: Waiting Group : Baseline Time Use	0.673	0.060	11.299	0.000
Males	Reference Group			
Gender: Female	0.007	0.077	0.095	0.924
Not Fall Break	Reference Group			
Fall Break	0.055	0.017	3.192	0.001
Region: Capital	Reference Group			
Region: Central Denmark	-0.096	0.096	-0.999	0.318
Region: Northern Denmark	0.080	0.138	0.576	0.565
Region: Zealand	-0.143	0.115	-1.241	0.215
Region: Southern Denmark	-0.090	0.109	-0.819	0.413
Education Stage: Primary Education	Reference Group			
Education Stage: Secondary Education	0.044	0.095	0.459	0.646
Education Stage: Boarding School	0.043	0.146	0.292	0.770
Education Stage: Others	0.019	0.117	0.164	0.869
Spline time term 1: Reflection Group	-0.104	0.111	-0.935	0.350
Spline time term 2: Reflection Group	-0.077	0.036	-2.172	0.030
Spline time term 1: Planning Group	-0.347	0.110	-3.156	0.002

Spline time term 2: Planning Group	-0.102	0.036	-2.843	0.004
Spline time term 1: Waiting Group	-0.247	0.105	-2.344	0.019
Spline time term 2: Waiting Group	-0.151	0.034	-4.491	0.000
Intervention period: Reflection Group	-0.056	0.041	-1.361	0.174
Intervention Period: Planning Group	-0.317	0.059	-5.404	0.000
Intervention Period: Waiting Group	-0.390	0.057	-6.851	0.000
Intervention period: Reflection Group: Baseline Time Use	-0.079	0.019	-4.261	0.000
Intervention Period: Planning Group: Baseline Time Use	-0.087	0.020	-4.344	0.000
Intervention Period: Waiting Group: Baseline Time Use	-0.092	0.017	-5.428	0.000

Daily Time Moderation by Social Media Addiction

Variable	Esti- mate	Std.error	Statistic	p-value
(Intercept)	4.988	0.150	33.170	0.000
Reference Group				
Baseline Period: Reflection Group				
Baseline Period: Planning Group	-0.009	0.141	-0.062	0.951
Baseline Period: Waiting Group	-0.027	0.142	-0.191	0.849
Baseline Period: Reflection Group : Social media addiction	-0.060	0.094	-0.641	0.522
Baseline Period: Planning Group : Social media addiction	0.149	0.100	1.486	0.137
Baseline Period: Waiting Group : Social media addiction	0.063	0.093	0.675	0.500
Reference Group				
Males				
Gender: Female	0.144	0.123	1.168	0.243
Reference Group				
Not Fall Break				
Fall Break	0.056	0.017	3.249	0.001
Reference Group				
Region: Capital				
Region: Central Denmark	-0.141	0.146	-0.962	0.336
Region: Northern Denmark	-0.052	0.211	-0.245	0.807
Region: Zealand	-0.268	0.172	-1.558	0.119
Region: Southern Denmark	-0.320	0.166	-1.936	0.053
Reference Group				
Education Stage: Primary Education				
Education Stage: Secondary Education	0.421	0.139	3.026	0.002
Education Stage: Boarding School	0.083	0.224	0.368	0.713
Education Stage: Others	0.127	0.178	0.714	0.475
Spline time term 1: Reflection Group	-0.094	0.111	-0.845	0.398
Spline time term 2: Reflection Group	-0.076	0.036	-2.134	0.033
Spline time term 1: Planning Group	-0.326	0.110	-2.958	0.003
Spline time term 2: Planning Group	-0.096	0.036	-2.677	0.007
Spline time term 1: Waiting Group	-0.256	0.105	-2.433	0.015

Spline time term 2: Waiting Group	-0.152	0.034	-4.505	0.000
Intervention period: Reflection Group	-0.072	0.041	-1.743	0.081
Intervention Period: Planning Group	-0.297	0.058	-5.083	0.000
Intervention Period: Waiting Group	-0.375	0.057	-6.599	0.000
Intervention period: Reflection Group : Social media addiction	-0.009	0.018	-0.481	0.630
Intervention Period: Planning Group : Social media addiction	-0.110	0.019	-5.848	0.000
Intervention Period: Waiting Group : Social media addiction	0.024	0.018	1.388	0.165

### Daily Time Moderation by Self-control

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	4.971	0.148	33.608	0.000
Baseline Period: Reflection Group	Reference Group			
Baseline Period: Planning Group	-0.007	0.142	-0.048	0.962
Baseline Period: Waiting Group	-0.032	0.142	-0.223	0.824
Baseline Period: Reflection Group: Self-control	-0.021	0.086	-0.240	0.811
Baseline Period: Planning Group: Self-control	-0.119	0.111	-1.073	0.283
Baseline Period: Waiting Group: Self-control	0.099	0.092	1.079	0.281
Males	Reference Group			
Gender: Female	0.164	0.117	1.398	0.162
Not Fall Break	Reference Group			
Fall Break	0.057	0.017	3.255	0.001
Region: Capital	Reference Group			
Region: Central Denmark	-0.143	0.146	-0.975	0.329
Region: Northern Denmark	-0.046	0.210	-0.219	0.827
Region: Zealand	-0.282	0.172	-1.634	0.102
Region: Southern Denmark	-0.338	0.165	-2.046	0.041
Education Stage: Primary Education	Reference Group			
Education Stage: Secondary Education	0.427	0.140	3.059	0.002
Education Stage: Boarding School	0.092	0.223	0.412	0.681
Education Stage: Others	0.143	0.177	0.808	0.419
Spline time term 1: Reflection Group	-0.094	0.111	-0.843	0.399
Spline time term 2: Reflection Group	-0.076	0.036	-2.133	0.033
Spline time term 1: Planning Group	-0.335	0.110	-3.048	0.002
Spline time term 2: Planning Group	-0.099	0.036	-2.764	0.006
Spline time term 1: Waiting Group	-0.258	0.105	-2.448	0.014
Spline time term 2: Waiting Group	-0.153	0.034	-4.536	0.000
Intervention period: Reflection Group	-0.072	0.041	-1.734	0.083
Intervention Period: Planning Group	-0.293	0.058	-5.008	0.000
Intervention Period: Waiting Group	-0.371	0.057	-6.526	0.000
Intervention period: Reflection Group : Self-control	0.008	0.016	0.530	0.596
Intervention Period: Planning Group : Self-control	0.084	0.021	4.025	0.000
Intervention Period: Waiting Group : Self-control	-0.053	0.018	-2.975	0.003

Daily Session Model Summary

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	3.475	0.127	27.427	0.000
Baseline Period: Reflection Group	Reference Group			
Baseline Period: Planning Group	-0.002	0.119	-0.015	0.988
Baseline Period: Waiting Group	0.015	0.121	0.121	0.904
Males	Reference Group			
Gender: Female	0.251	0.102	2.467	0.014
Not Fall Break	Reference Group			
Fall Break	0.029	0.012	2.444	0.015
Region: Capital	Reference Group			
Region: Central Denmark	-0.066	0.126	-0.526	0.599
Region: Northern Denmark	0.012	0.184	0.064	0.949
Region: Zealand	-0.109	0.149	-0.729	0.466
Region: Southern Denmark	-0.157	0.139	-1.127	0.260
Education Stage: Primary Education	Reference Group			
Education Stage: Secondary Education	0.556	0.120	4.620	0.000
Education Stage: Boarding School	0.469	0.181	2.592	0.010
Education Stage: Others	0.144	0.158	0.909	0.363
Spline time term 1: Reflection Group	0.086	0.073	1.183	0.237
Spline time term 2: Reflection Group	0.016	0.024	0.685	0.494
Spline time term 1: Planning Group	-0.005	0.075	-0.072	0.943
Spline time term 2: Planning Group	-0.060	0.025	-2.365	0.018
Spline time term 1: Waiting Group	0.032	0.074	0.431	0.667
Spline time term 2: Waiting Group	-0.117	0.026	-4.487	0.000
Intervention period: Reflection Group	-0.120	0.027	-4.398	0.000
Intervention Period: Planning Group	-0.355	0.039	-9.027	0.000
Intervention Period: Waiting Group	-0.767	0.039	-19.613	0.000

Session Length Model Summary

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	1.697	0.139	12.237	0.000
Baseline Period: Reflection Group	Reference Group			
Baseline Period: Planning Group	0.114	0.131	0.869	0.385
Baseline Period: Waiting Group	0.025	0.132	0.192	0.848
Males	Reference Group			

Gender: Female	0.010	0.109	0.096	0.923
Not Fall Break	Reference Group			
Fall Break	0.028	0.016	1.809	0.070
Region: Capital	Reference Group			
Region: Central Denmark	-0.130	0.137	-0.949	0.342
Region: Northern Denmark	-0.034	0.193	-0.174	0.862
Region: Zealand	-0.206	0.161	-1.276	0.202
Region: Southern Denmark	-0.194	0.154	-1.263	0.207
Education Stage: Primary Education	Reference Group			
Education Stage: Secondary Education	-0.179	0.129	-1.383	0.167
Education Stage: Boarding School	-0.441	0.202	-2.190	0.029
Education Stage: Others	-0.274	0.164	-1.668	0.095
Spline time term 1: Reflection Group	-0.218	0.100	-2.169	0.030
Spline time term 2: Reflection Group	-0.101	0.032	-3.165	0.002
Spline time term 1: Planning Group	-0.465	0.099	-4.703	0.000
Spline time term 2: Planning Group	-0.093	0.032	-2.889	0.004
Spline time term 1: Waiting Group	-0.185	0.096	-1.924	0.054
Spline time term 2: Waiting Group	-0.039	0.031	-1.274	0.203
Intervention period: Reflection Group	0.036	0.037	0.956	0.339
Intervention Period: Planning Group	0.206	0.053	3.908	0.000
Intervention Period: Waiting Group	0.304	0.052	5.874	0.000

Survey Changes

Variable (follow-up survey relative to baslien survey measures)	Condition	Estimate	Std.error	Statistic	Df	p-value	Lower confidence interval level	Higher confidence Interval level
Well-being	control	-0.17	0.145	-1.2065	72.79	0.23	-0.46	0.11
Well-being	intervention	0.05	0.143	0.3159	71.24	0.75	-0.24	0.33
Well-being	default	0.13	0.121	1.0468	74.28	0.30	-0.11	0.37
Social connection	control	0.07	0.155	0.4469	73.95	0.66	-0.24	0.38
Social connection	intervention	-0.01	0.154	-0.0915	71.99	0.93	-0.32	0.29
Social connection	default	0.11	0.185	0.5760	82.41	0.57	-0.26	0.48
FOMO	control	0.04	0.125	0.2944	72.00	0.77	-0.21	0.29
FOMO	intervention	0.01	0.126	0.0466	74.54	0.96	-0.25	0.26
FOMO	default	-0.09	0.120	-0.7532	74.72	0.45	-0.33	0.15
Feeling of overuse	control	-0.04	0.109	-0.3683	74.37	0.71	-0.26	0.18
Feeling of overuse	intervention	0.07	0.107	0.6745	77.23	0.50	-0.14	0.28
Feeling of overuse	default	-0.24	0.103	-2.3113	76.51	0.02	-0.45	-0.03
Satisfaction with SoMe	control	-0.18	0.107	-1.7108	76.35	0.09	-0.40	0.03
Satisfaction with SoMe	intervention	-0.03	0.081	-0.4148	79.07	0.68	-0.20	0.13
Satisfaction with SoMe	default	0.01	0.082	0.0720	80.91	0.94	-0.16	0.17
Perceived control	control	0.16	0.135	1.2239	72.55	0.22	-0.10	0.43

Perceived control	intervention	0.17	0.113	1.5358	76.32	0.13	-0.05	0.40
Perceived control	default	-0.08	0.112	0.7528	74.34	0.45	-0.31	0.14

### Model for Dismissal Behaviour

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	-1.745	0.112		-15.623 0.000
Planning	0.754	0.120		6.267 0.000
Waiting	1.000	0.122		8.182 0.000
Time 1	-0.641	0.036		-17.647 0.000
Time 2	-0.179	0.020		-9.133 0.000
Secondary Education	-0.064	0.123	-0.515	0.606
Boarding School	-0.046	0.181	-0.256	0.798
Others	0.009	0.165	0.052	0.958
Weekend	-0.061	0.012		-4.917 0.000
Fall Break	-0.145	0.028		-5.212 0.000
App: napchat	0.040	0.015		2.669 0.008
App: Instagram	0.159	0.019		8.377 0.000
App: Facebook	0.280	0.036		7.721 0.000
App: YouTube	-0.074	0.041		-1.805 0.071
App: Other	-0.131	0.054		-2.450 0.014
Central Denmark	-0.158	0.128		-1.233 0.218
Northern Denmark	-0.244	0.190		-1.280 0.201
Zealand	-0.225	0.153		-1.470 0.142
Southern Denmark	-0.229	0.145		-1.575 0.115

### Planning Behavior and Adherence to Self-Imposed Time Limits

#### Time Limit Preferences across Platforms

Participants showed a range of preferences when selecting session time limits in the Planning condition. The most frequently chosen duration was the 60-second default, accounting for 13.4 percent of all planning prompts. This was followed by the 45-minute maximum (7.9 percent), 10 minutes (600 seconds), and 5 minutes (300 seconds), with additional clustering around short session ranges (e.g., 6–9 minutes). This pattern reflects both the anchoring effect of defaults and a substantial subset of users who intentionally maximized their planned usage time.

Time limit distributions varied across platforms. On TikTok, the 45-minute maximum was most common (9.0 percent), while the 60-second default accounted for 7.3 percent of sessions. Snapchat users showed a strong preference for shorter limits, with 16.2 percent selecting the default and only 6.6 percent choosing the maximum. Instagram followed a similar pattern (14.7 percent default, 6.9 percent maximum). In contrast, YouTube stood out with 24.1 percent of sessions planned at the 45-minute maximum, compared to 11.7 percent using the 60-second default. Facebook and the "Other" app category reflected a mix of short and long planned durations, indicating heterogeneous usage expectations.

#### Adherence to Planned Time: Percent of Limit Used

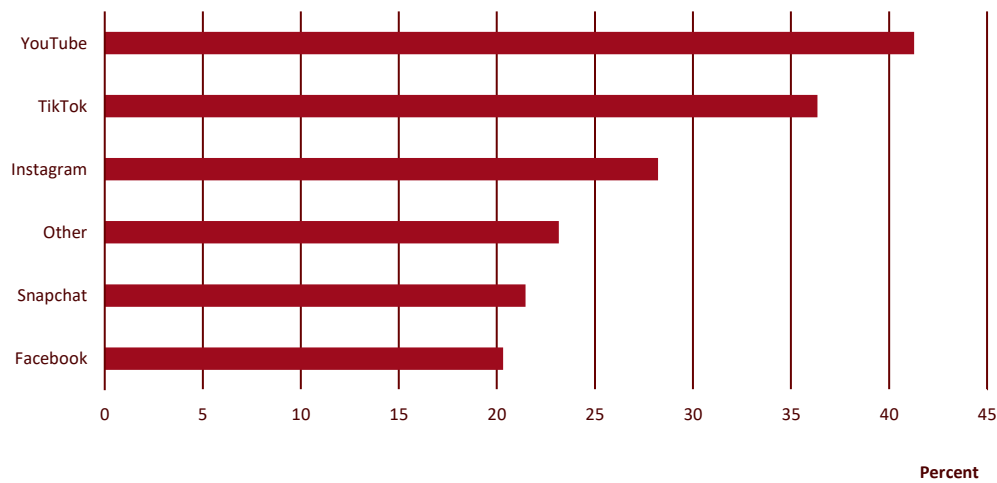
To assess how closely participants adhered to their planned limits, we computed the percentage of the set duration that was actually used per session<sup>5</sup>. Across all Planning sessions, users engaged for an average of 27.2 percent of their self-imposed limits. This suggests that users typically disengaged well before reaching their predefined maximum, and that the act of planning itself may have heightened awareness of time spent in the app.

Adherence varied by intervention stage. For initial Planning sessions (those not reaching the limit), average use was 26.3 percent of the planned duration. In contrast, sessions that triggered a reintervention—i.e., when the initial time limit was met and users actively chose to continue—resulted in 47.2 percent usage of the new time allocation. This indicates that when users crossed their original boundary and made an explicit decision to continue, they treated the session as a more deliberate and extended engagement.

Platform-Specific Adherence Patterns

Figure 6.1 illustrates how adherence differed across platforms. On average, YouTube users reached 41.3 percent of their planned duration, followed by TikTok at 36.4 percent. These platforms, known for immersive or long-form content, showed the highest congruence between planned and actual session time. Instagram followed at 28.2 percent, with lower adherence rates observed for Snapchat (21.5 percent), Facebook (20.3 percent), and other apps (23.2 percent). These differences likely reflect variations in content format and user expectations: platforms optimized for brief, fragmented interactions (e.g., Snapchat) appear less compatible with goal-directed session planning than those offering continuous or structured content streams.

Figure 6.1 Share of Sessions Where the Planned Time Limit was Used by App



Note: This figure displays the mean percentage of planned time used across valid sessions for each app in the Planning condition. Session time use was capped at 100%, with a 10-second grace period allowed. N = 89 (Individuals in the planning condition).

Source: Danish Competition and Consumer Authority's Field Experiment, 2024-2025

<sup>5</sup> Only sessions with valid time tracking were included. For each session, time use was capped at 100 percentpercent, with a 10-second buffer allowed to account for slight overshoots without penalizing adherence.

Potential Sleep Patterns in the Baseline Period

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	9.241	0.172	53.622	0.000
Baseline Period: Reflection Group	Reference Group			
Baseline Period: Planning Group	0.042	0.160	0.265	0.792
Baseline Period: Waiting Group	0.157	0.162	0.966	0.335
Males	Reference Group			
Gender: Female	-0.011	0.133	-0.083	0.934
Weekday	Reference Group			
Weekend	0.131	0.031	4.215	0.000
Not Fall Break	Reference Group			
Fall Break	0.607	0.050	12.119	0.000
Region: Capital	Reference Group			
Region: Central Denmark	-0.173	0.164	-1.059	0.291
Region: Northern Denmark	-0.140	0.240	-0.582	0.561
Region: Zealand	-0.335	0.195	-1.720	0.087
Region: Southern Denmark	0.049	0.182	0.269	0.788
Education Stage: Primary Education	Reference Group			
Education Stage: Secondary Education	-0.801	0.157	-5.106	0.000
Education Stage: Boarding School	-0.017	0.236	-0.071	0.943
Education Stage: Others	-0.185	0.209	-0.883	0.378
Spline time term 1	-0.309	0.180	-1.711	0.087
Spline time term 2	-0.029	0.064	-0.458	0.647
Intervention period: Reflection Group	0.044	0.079	0.561	0.575
Intervention Period: Planning Group	0.230	0.072	3.218	0.001
Intervention Period: Waiting Group	0.203	0.072	2.821	0.005

Changes in Sleep Between Baseline and Intervention Period

Variable	Estimate	Std.error	Statistic	p-value
(Intercept)	-0.193	0.115	-1.675	0.095
Reflection Group	Reference Group			



Planning Group	0.275	0.109	2.528	0.012
Waiting Group	0.164	0.111	1.480	0.140
Change in time spent (Reverse Hour)	0.096	0.035	2.779	0.006
Males	Reference Group			
Gender: Female	-0.007	0.090	-0.072	0.943
Region: Capital	Reference Group			
Region: Central Den- mark	0.140	0.114	1.231	0.220
Region: Northern Denmark	0.282	0.166	1.705	0.090
Region: Zealand	0.345	0.134	2.568	0.011
Region: Southern Denmark	0.055	0.130	0.421	0.674
Education Stage: Pri- mary Education	Reference Group			
Education Stage: Se- condary Education	-0.068	0.108	-0.631	0.529
Education Stage: Boarding School	-0.411	0.172	-2.388	0.018
Education Stage: Others	-0.002	0.141	-0.012	0.991