

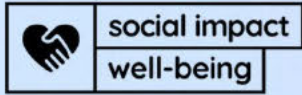
AMENDED Exhibit 109

PLAINTIFFS' OMNIBUS OPPOSITION TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT

Case No.: 4:22-md-03047-YGR

MDL No. 3047

In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation



Problematic Use On-Platform Measurement

Concentration survey results for IG

Dec 2022- Jan 2023

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X-Meta Well-being

TL;DR - IG

To advance our understanding and measurement of potential problematic use (PU) on our platforms, this workstream:

- 1) Developed and validated new survey measurement of users' perceived control of their use of Facebook and Instagram
- 2) Surveyed ~30K youth and ~30K adult users of IG in 12 countries
- 3) Identified on-platform behaviors associated with perceived low control

Findings

- 1) Users' perceived control can be validly measured across age cohorts with questions assessing **low attentiveness** around platform use (i.e., spending more time, checking, and consuming content without realizing it) and **low capability** to change platform use (i.e., low confidence in ability to reduce time, checking, or interactions)
- 2) Rates of perceived low control are similar for youth and adults, with low attentiveness (~34-40%) more common than low capability (13-20%)
- 3) ¹ Perceived low control nearly fully explains the small association between on-platform behaviors and perceiving that one's platform use prevents fulfilling other responsibilities in life ('life interference').
- 4) The ability to predict perceived control using logged platform behaviors is modest, but improved over past PU models: 0.77 AUC for attentiveness (precision/recall ~0.5/0.7) and 0.80 for capability (~0.4/0.4).
- 5) Global behaviors associated with perceived low control reflect high usage, evening + late night time spent, and specific behaviors, like no engagement repeat sessions and video chaining.
- 6) Specific product usage associated with perceived low control includes content consumption surfaces (Explore, Reels Tab, Home) and active engagement (Stories creation, Direct).

Takeaways

These survey items can be adapted for use in product evaluations (designed on a case-specific basis) to understand perceived impact of products.

While there are no objective cut-offs for defining 'low' control, we see that this is a general issue experienced by both youth and adults. Youth-first products can be explored to extend to gen pop.

Focusing on addressing areas on our platforms where users are likely to experience perceived low control is a viable strategy for making progress in this space.

We have improved predictive precision by focusing on control, but on-platform behaviors likely cannot be used to directly measure (or proxy) perceived control.

Our next step is to iterate with the team on appropriate cut-offs (e.g., p90 usage) and prioritized behaviors (e.g., evening + late night time) to use for heuristics and goaling, noting that these are *not* definitional of PU.

Existing or novel control solutions may be provided in-context within these products, such as nudges within Reels or extensions of Quiet Mode to support limits and boundaries around active engagement.

1

Approach

Context: Success for problematic use workstream

Overall success for PU is: *People have the tools that they need and are empowered to control their time and experiences on our platforms.*

Measurement will encompass: Signals of product efficacy + user value (e.g., behavior change metrics; product engagement; perceived impact) and positive perception (e.g., perceived usefulness; product awareness) *[to be aligned with measurement framework for all Youth + Well-being efforts across the company]*

Priority		Detail	Status
1)	Meet youth industry practice requirements	Ensure we are providing <u>PU-related product solutions</u> that <u>are on par with the industry</u> , based on regulatory expectations and competitor feature sets	IG feature set has largely met this bar, pending confirmation that products provide educational information in context (details TBD)
2)	Measure success of products	Ensure that the features are a) effective; b) bringing user value; c) reaching the relevant users	H1 2023 <u>priority</u> through behavior change goal, product evaluations and sizing, and product awareness research
3)	Identify and close additional gaps	Develop updated behavioral metrics to use in goaling Identify product usage and/or behaviors that are associated with perceived low control for additional investment	This report + next steps

Goal of this workstream: Identify on-platform behaviors that are associated* with user perception of low control**

Outline of results

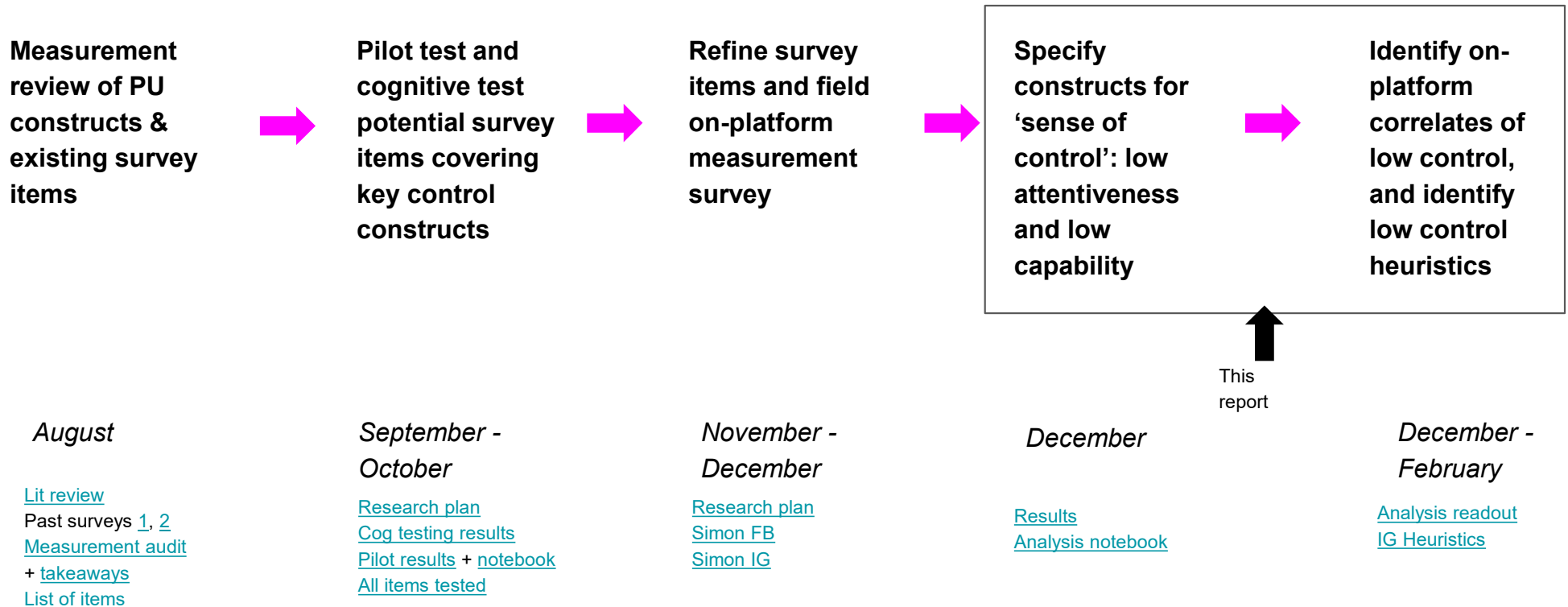
- 1) Measurement approach and rates of perceived low control
- 2) General behavior patterns (time spent, sessions, time of day) associated with perceived low control
- 3) Specific product usage associated with perceived low control

*All associations in this report are non-causal, i.e., there can be no conclusions drawn about the direction of how behavior and perception may impact each other.

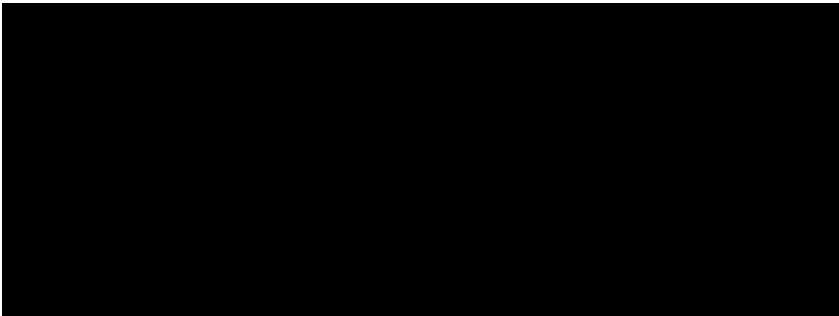
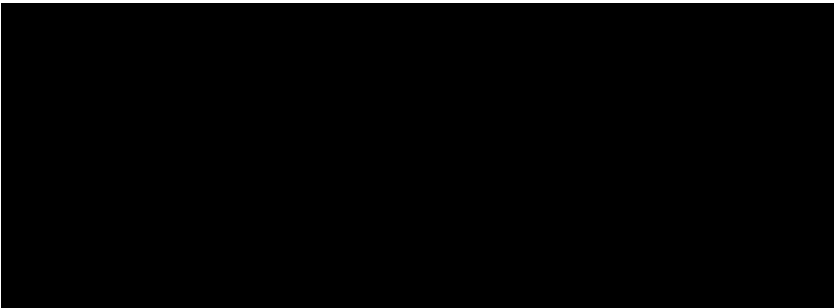
**All user perception measures come from self-report surveys on the participants' subjective self-assessment of their experiences with sense of control and their perceptions of the platform.

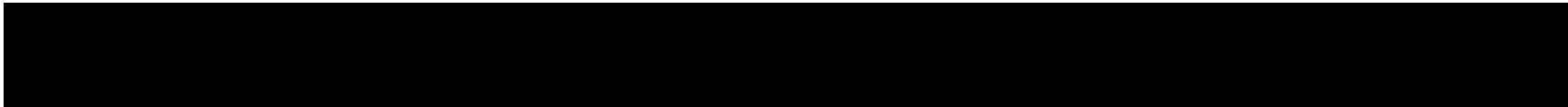
Approach: Updated survey measurement of potential problematic use

Focus is on measuring users' perception of control over their time and experiences on our platforms (see [note](#))



We identified two constructs of perceived control and measured them in an on-platform survey

Low <u>attentiveness</u> around use (possible unintended, unaware, and/or habitual use)	Perceived control <u>capability</u> (perceived self-efficacy to exert control, if desired)
	



These two areas of control are consistent with literature suggesting lack of control over social media use may come in two forms - habitual or low attention use; and lack of ability to control use (1, 2, 3). These also map to models of self-regulation of behavior that define two systems, an automatic one (akin to low attentiveness) and a conscious, goal-monitoring one (akin to exerting deliberate control) (4). See Appendix for details on survey development and item selection.

Details of survey sample, fielding, and analysis

Sample

N=30,699 adults and 30,346 youth (13-17) on Facebook
N=30,810 adults and 30,756 youth (13-17) on Instagram
Across 12 countries: AU, BR, EG, GB, KR*, ID, IN, MX, NG, PH, TR, US (*KR was IG only)

Data collection

Sampling was stratified to be 50% users who exhibited 1 or more [behaviors previously associated with PU](#) (no engagement late night sessions, late night product switching, late night long sessions, no engagement repeat sessions, high frequency notification checking, or high volume of short sessions) and 50% users who exhibited none of those behaviors L7

Data was collected late November - early December 2022 (11/18-12/14 on FB; 11/21-12/8 on IG). Configs targeting less active users took longer to reach quotas.

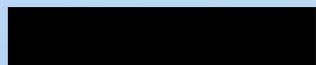
Analysis

1 We [verified](#) that survey items formed 2 factors and created composite scores by averaging across the 3 attentiveness items and the 3 capability items.

Survey responses were [weighted](#) using Graviton weights to reflect the Facebook and Instagram user population across the 12 countries during the time frame of the survey, based on [recommended indices](#) from SWAMP: gender, country, age, indices of use (IG: followers, followings, creator, business, private account; FB: L30 + mobile and web, days since confirmed, friend count, subscription count profile picture), and device.

Associations between on-platform signals and survey measures were analyzed in 3 ways to confirm converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and simple correlation

Results: Instagram



Summary of users' report of perceived low control

How common are experiences of perceived low control on Instagram?

Rates of reporting the *lowest* scores (≤ 2 on 5 pt composite scale; or 1 or more lowest responses on any item):

Low attentiveness: [REDACTED] youth, [REDACTED] adults
Low capability: [REDACTED] youth; [REDACTED] adults

How do these experiences differ across ages and markets?

Adults were slightly more likely to report low attentiveness; youth were slightly more likely to report low capability (small significant differences)

Markets differ: higher perceived control in western/high income (US, GB, AU); lower in some emerging markets (NG, EG, ID) and also relatively low in KR - possibly due to cross-cultural differences in perceptions of control and role of social media in people's lives

How does perceived low control relate to other perceptions of the app?

Users reporting low control also report higher 'life interference' from their app use (i.e., perceiving that use of Instagram prevents the fulfillment of other responsibilities). Low attentiveness: [REDACTED] higher life interference; low capability [REDACTED] higher life interference.

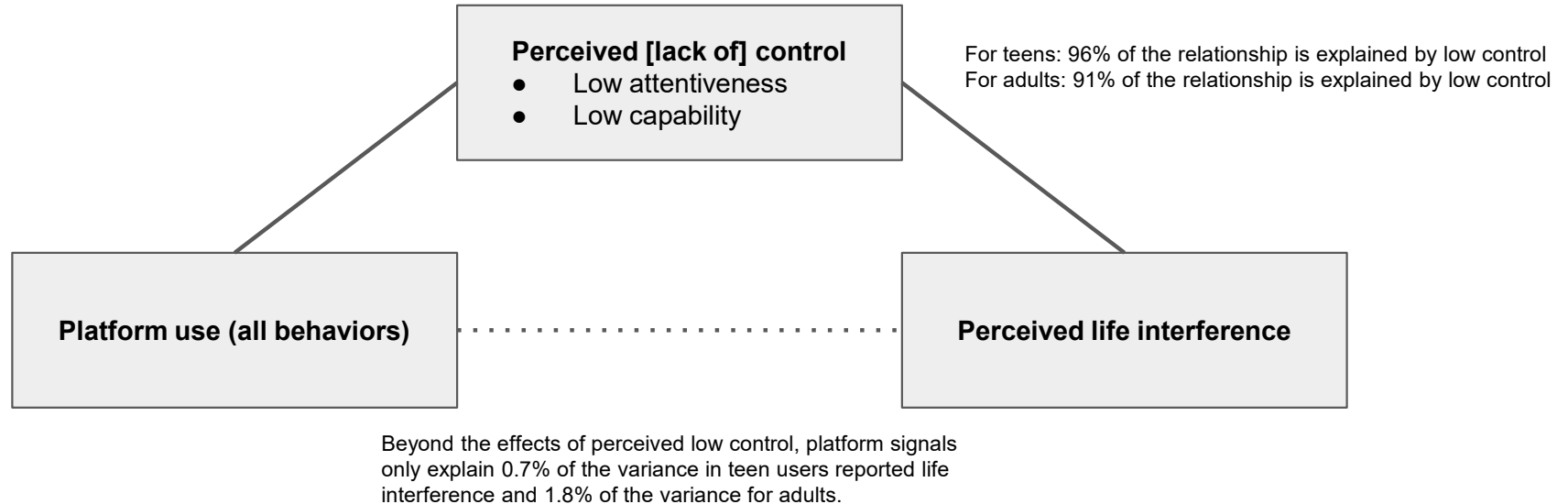
Low control is *not* strongly related to perceiving value from the app or views on whether the app is trustworthy or not (correlations $< .14$)

Descriptive details starting [here](#)

Perceived control explains how platform use may be related to perceived 'life interference'

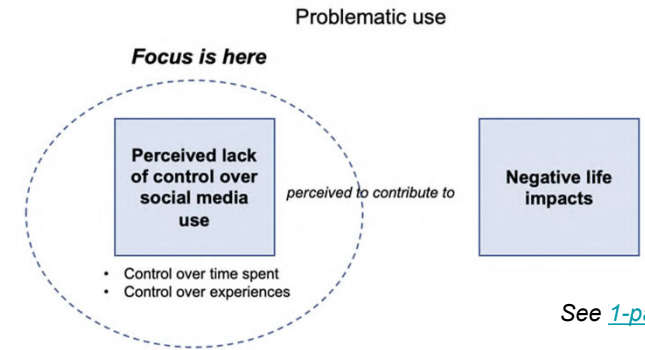
Previous measurement work has included a focus on 'life interference' as an important outcome related to problematic use; i.e., perceiving that one's platform use is preventing the fulfillment of other life responsibilities.

Here we see that perceived life interference is *almost entirely* related to actual platform use through perceived low control. We don't see an association between platform use and life interference except through perceived control.



Focusing on control increases our measurement precision

This supports our approach to focus on control: from both a conceptual and measurement standpoint, perceived control over platform use is more proximal to the actual on-platform experience, including behaviors that we can measure and potentially change.



See [1-pager here](#)

Our overall models predicting perceived control are stronger than those that include life interference or other life impact measures, likely because there is less noise. Our updated heuristics will likely be better as well.

	Precision	Recall	AUC
Former PU model on FB Outcome: low control + negative life impact	0.17 all ages	0.73 all ages	0.66 all ages
Current PU model on IG Outcome: low attentiveness	0.48 youth 0.51 adults	0.70 youth 0.69 adults	0.77 youth 0.78 adults
Current PU model on IG Outcome: low capability	0.36 youth 0.50 adults	0.45 youth 0.36 adults	0.81 youth 0.80 adults

Specific behaviors associated with low perceived control on IG

Explanatory power for low attentiveness overall is 2-3x as strong as low capability. Predictors largely consistent across youth and adults.

Stack rank	Behavior	Attentiveness	Capability	Detail
1	Total time spent	x	x	Time spent and sessions (higher overall use) are top predictors
2	Number of sessions	x	x	
3	Evening + early night time spent (7-10 pm; 10 pm-12 am)	x	x	Whereas past PU research implicated late night time spent (1 , 2), <u>this study also identifies evening time spent as a predictor of perceived low control</u> , slightly stronger than late night time spent.
4	Passive evening + early night time spent (7-10 pm; 10 pm-12 am)	x	x	Whereas past PU research found no association with sessions being more active or passive on average (2), certain no engagement sessions (repeat and late night) were found (1). <u>Here we see passive sessions in evening and early night associated with perceived low control.</u>
5	Late night time spent (12am-4am) (overall and passive)	x	x	Overall late night time spent, as well as passive time spent (slightly less strong), emerging here, consistent with past work.
6	No engagement repeat sessions	x	x	Consistent with past heuristic work (1) and possibly related to checking behavior. Relatively stronger as a predictor for adults
7	Video chaining	x		New finding, a behavior specifically associated with perceived low attentiveness. <u>Particularly related to frequency of chaining, rather than chaining depth.</u>
8	Short sessions		x	New finding, a behavior specifically associated with perceived low capability.

Associations were evaluated 3 ways to highlight converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and correlation

Specific product usage associated with low perceived control on IG

Stack rank	Product	Attentiveness (Youth and/or Adults)	Capability (Youth and/or Adults)	Detail
1		Y + A	Y + A	
2		Y	Y + A	
3		Y + A		
4		Y	Y + A	
5		Y + A	Y + A	
6		Y + A	Y	
7		A	Y	

Associations were evaluated 3 ways to highlight converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and correlation

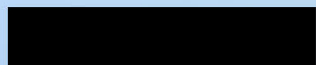
Takeaways

- 1) Many behaviors are associated with both forms of perceived low control, and predictors are largely similar for youth and adults.
- 1) Findings are consistent with the stance around focusing on late night use as important to support user control; extending to evening use may be a next step.
- 1) Expanding solutions to adult cohorts may also be beneficial.
- 1) Specific behaviors like video chaining, particularly on passive consumption surfaces like Reels, might be opportunities for attentiveness nudges or adjusting autoplay settings.
- 1) New product opportunities may exist in-context for specific surfaces or targeting specific behavior patterns - such as extending Quiet Mode to support limits and boundaries around active engagement.

Next steps

- 1) Focus this broad list to an abbreviated, non-overlapping list of 3-5 specific behaviors with relatively highest precision/recall to form updated PU heuristics
 - Leverage team priority area around late night use
 - Present alternatives and iterate on final set
 - Define thresholds
- 1) Evaluate sensitivity of heuristics: have we seen movement of these in experiments to date?
- 1) Opportunity size the potential impact of using these behaviors for additional targeting for Quiet Mode and Take a Break (e.g., expansion to evening hours)
 - Given a certain targeting threshold, what % of TAM is reached?
 - Update behavior change goals based on change in % of TAM reached and measured efficacy of the feature

IG product details



Theme: Continuous content consumption

4 Specific product usage associated with perceived **low** control

5 Product	Low Attentiveness		Low Capability	
	Teens	Adults	Teens	Adults
4				

*Explore tab also includes behaviors like tapping into full screen + chaining.

**Frequency of video chaining *at any depth* is associated with perceived low control. Frequently getting a few videos deep is twice as important in association than daily chaining depth (i.e., frequently getting a few videos deep matters more than occasionally getting 10-20+ videos deep).

3 Associations were evaluated 3 ways to highlight converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and correlation

* Tier of strength prediction is relative: Tier 1 = top 3 strongest predictor from regression and/or decision tree; Tier 2 = top 3 strongest predictor from one cohort or one form of low control; Tier 3 = top 10 predictor

Theme: Active engagement

Specific product usage associated with perceived **low** control

11 Product	Low Attentiveness		Low Capability	
	Teens	Adults	Teens	Adults
[Redacted content]				

***Direct time spent still a predictor even controlling for notifications.

*Associations were evaluated 3 ways to highlight converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and correlation

** Tier of strength prediction is relative: Tier 1 = top 3 strongest predictor from regression and/or decision tree; Tier 2 = top 3 strongest predictor from one cohort or one form of low control; Tier 3 = top 10 predictor

Theme: Other

Specific product usage associated with perceived **low** control

Product	Low Attentiveness		Low Capability	
	Teens	Adults	Teens	Adults

*Associations were evaluated 3 ways to highlight converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and correlation

** Tier of strength prediction is relative: Tier 1 = top 3 strongest predictor from regression and/or decision tree; Tier 2 = top 3 strongest predictor from one cohort or one form of low control; Tier 3 = top 10 predictor

Theme: Other

Specific product usage associated with perceived **high** control

Product	High Attentiveness <i>Greater usage of these products associated* with <u>less frequently</u> spending more time, checking more, and consuming more content than intended, without realizing it</i>		High Capability <i>Greater usage of these products associated* with <u>higher perceived ability</u> to reduce or limit time spent, checking, and interactions, if wanting to</i>	
	Teens	Adults	Teens	Adults
Home	Share of time spent			

*Associations were evaluated 3 ways to highlight converging signals: unique predictors in a multivariate regression, strongest contributors in a predictive decision trees (xgboost), and correlation

** Tier of strength prediction is relative: Tier 1 = top 3 strongest predictor from regression and/or decision tree; Tier 2 = top 3 strongest predictor from one cohort or one form of low control; Tier 3 = top 10 predictor

Usage of products associated with perceived low control

7 52 3 6 Continuous content consumption Explore tab Reels tab Video chaining Home esp long passive	Content consumption in Explore, Reels, and Home - especially passive - is an experience within which we can offer control features. For example, Take a Break with more nuanced time spent targeting. Frequently viewing chained content, regardless of which surface, is associated particularly with low attentiveness. This makes sense as a product affordance that may contribute to people spending time or consuming content without realizing it (expert report). Importantly, <i>depth</i> of chaining is less associated. This would support enacting more limits on autoplay of next videos that occurs across surfaces, and/or adding pauses or friction. Occasional longer immersive viewing sessions may be more intentional especially if they are paired with features that support awareness and limits around that experience.
Active engagement Stories creation Direct Notifications	Stories creation is the strongest predictor of perceived low capability to reduce use, and also associated with low attentiveness - though has been found to be a high intent behavior (1). Content creation was also identified in previous PU research (2), as highly active users are also more likely to create content. Creation likely leads to more responses and thus likelihood of returning to use the app, all in a time-bound ephemeral way. Direct messages have been previously found associated with PU heuristics and related survey outcomes, but also are related to high session satisfaction (3). Control opportunities here will have to find a balance. Notifications have been specifically pointed out as a possible trigger of or contributor to low control usage (4, 5, 6, 7); this may not only be due to initiating new sessions, but diversion within a session.
Other Profile Home share of time	Profile time spent was also identified in previous PU research (1), but unclear why. Past work found no differences in browsing own vs. other profiles (2). Profile use may be related to revisiting own past content; social curation, editing/updates (3; 4; 5). Low control experiences especially with passive profile time spent could be a particular form of content consumption. Share of time spent on Home associated with <i>higher</i> control might be due to trading off with time spent on other surfaces associated with low control.

How well can we predict user self-reported perceived control using on-platform signals?

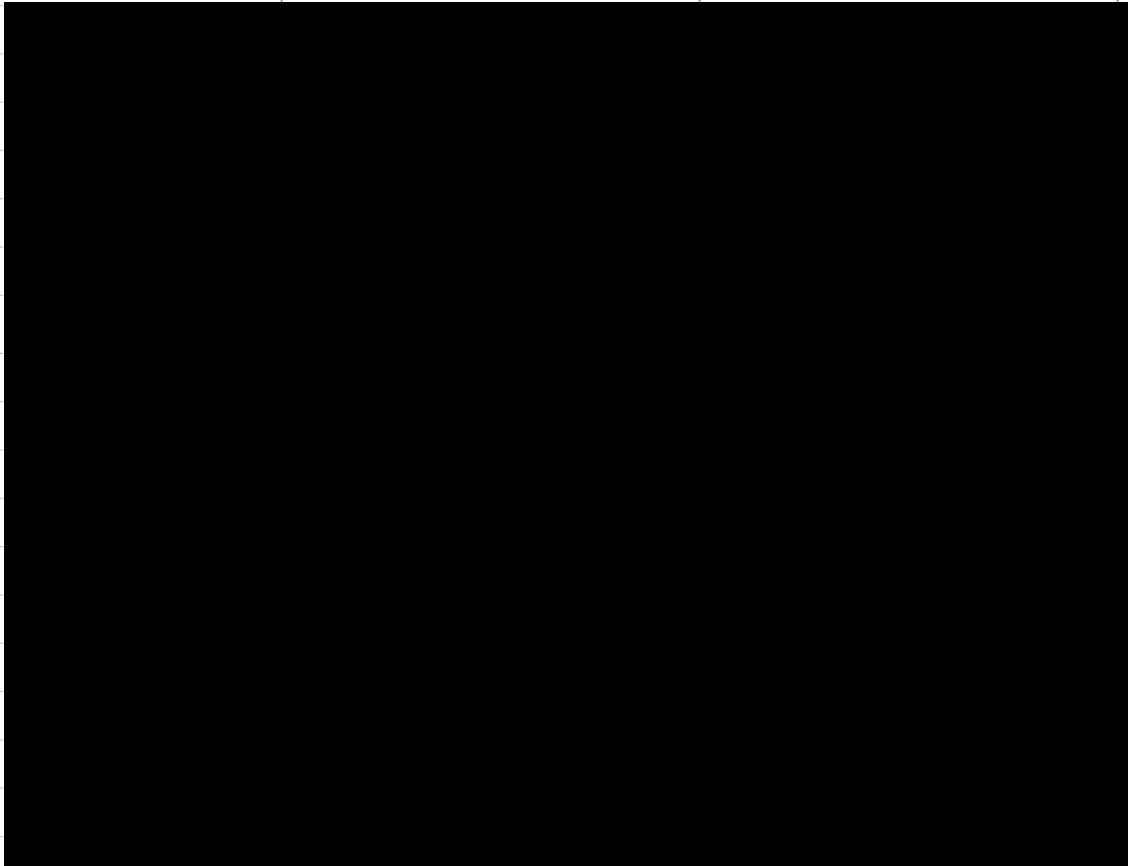
Overall our predictive power for perceived low control is modest: precision of ~0.5 and recall of ~0.7 for attentiveness and ~0.4 on both precision and recall for capability. We can predict ~30% of the variance in capability and 37% of the variance in attention.

15 10	Attentiveness			Capability		
	Precision	Recall	AUC	Precision	Recall	AUC
All data - Youth	.48	.70	0.766	.36	.45	0.807
All data - Adults	.51	.69	0.775	.50	.36	0.801
Top 10 - Youth	.40	.71	0.696	.23	.33	0.693
Top 10 - Adults	.42	.71	0.695	.20	.29	0.674

Global behavior correlations - FB youth

Correlations	Attentiveness	Capability
surface_visits	-0.12	-0.05
engagements	-0.06	-0.04
time_spent	-0.14	-0.06
push_notif_session	-0.14	-0.07
time_to_sess_from_push	0.06	0.05
late_night_ts	-0.10	-0.02
ts_4_7	-0.12	-0.05
ts_7_10	-0.12	-0.05
ts_10_12	-0.11	-0.04
late_night_sessions	-0.12	-0.04
no_eng_sessions	-0.11	-0.04
late_night_high_surface_switching_sessions	-0.09	-0.03
notif_checks	-0.10	-0.02
short_sessions	-0.09	-0.03
repeat_no_eng_session	-0.12	-0.06
late_night_no_eng_sessions	-0.09	-0.03
no_engagement_4_7	-0.10	-0.04
no_engagement_7_10	-0.10	-0.04
no_engagement_10_12	-0.10	-0.03

Boosted Decision Tree for Attentiveness - FB youth

Feature (Top 10)	Gain (marginal effect of predictive accuracy)	Frequency (of behavior)	Correlation
photo_ts			
notif_ts_share			
nf_ts_share			
story_ts_share			
feedback_ts_share			
notif_checks			
photo_ts_share			
feedback_ts			
ts_7_10			
nf_ts			
reels_ts_share			
engagements			
ts_4_7			
push_notif_session			
ts_10_12			
feedback_engagement_per_min			
no_engagement_4_7			

20 Overall behavior patterns - Facebook

Behavioral signal	Low attention Strength of associations		Low capability Strength of associations		
	Teens	Adults	Teens	Adults	
					Overall predictor strength for linking on-platform signals with low control are 5x stronger for predicting low attention than low capability; prediction for low capability overall low with push sessions + no engagement repeat sessions on top
Total time spent	~6%	~6%	~1%	N/A (not top 10 predictor)	
Sessions originating from push notification	~5.5%	~5.75%	~1%	~1%	Push notifications more salient as a predictor for FB compared to IG Interesting that this is right up there with number of sessions- could sessions originating from a push be overall less intentional sessions?
Sessions (number)	~5%	~6%	~.75%	~.5%	
Evening time spent (4-7 pm; 7-10 pm; 10 pm-12 am)	~5% 4-7, 7-10 ~4.75% 10-12	~5.75% 4-7, 7-10	~1% 4-7, 7-10	N/A (not top 10 predictor)	Evening time spent in the top 10; late night use relatively less important
Passive sessions (overall, and evening 4-7 pm; 7-10 pm)	~5% overall ~4.5% evening	~5.5%	~.6%	~.5-.6%	

Global behavior correlations - FB adults

Correlations	Attentiveness	Capability
surface_visits	-0.15	-0.04
engagements	-0.07	-0.02
time_spent	-0.15	-0.03
push_notif_session	-0.15	-0.06
time_to_sess_from_push	0.00	0.00
late_night_ts	-0.09	-0.02
ts_4_7	-0.13	-0.01
ts_7_10	-0.13	-0.03
ts_10_12	-0.11	-0.03
late_night_sessions	-0.13	-0.04
no_eng_sessions	-0.14	-0.04
late_night_high_surface_switching_sessions	-0.10	-0.03
notif_checks	-0.10	-0.02
short_sessions	-0.12	-0.04
repeat_no_eng_session	-0.14	-0.06
late_night_no_eng_sessions	-0.09	-0.03
no_engagement_4_7	-0.13	-0.04
no_engagement_7_10	-0.13	-0.04
no_engagement_10_12	-0.11	-0.04

Global behavior correlations - IG youth

Correlations	Attentiveness	Capability
ts	-0.23	-0.11
ts_4_7	-0.10	-0.06
ts_4_7_passive	-0.07	-0.05
ts_7_10	-0.19	-0.10
ts_7_10_passive	-0.14	-0.09
ts_10_12	-0.18	-0.09
ts_10_12_passive	-0.14	-0.08
ts_late_night	-0.14	-0.07
ts_late_night_passive	-0.11	-0.07
no_eng_repeat_sessions	-0.14	-0.10
short_sessions_count	-0.11	-0.08
late_night_no_engagement_sessions	-0.09	-0.07
sessions	-0.18	-0.11
sessions_exceed_2hr	-0.07	-0.03
avg_max_chaining_depth	-0.04	0.01
sum_chaining_depth_max	-0.07	0.00
post_impressions_chaining	-0.08	-0.01
media_impressions_chaining	-0.09	-0.02

Global behavior correlations - IG adults

Correlations	Attentiveness	Capability
ts	-0.22	-0.11
ts_4_7	-0.10	-0.05
ts_4_7_passive	-0.08	-0.04
ts_7_10	-0.18	-0.10
ts_7_10_passive	-0.15	-0.08
ts_10_12	-0.18	-0.08
ts_10_12_passive	-0.14	-0.07
ts_late_night	-0.13	-0.08
ts_late_night_passive	-0.11	-0.07
no_eng_repeat_sessions	-0.17	-0.10
short_sessions_count	-0.15	-0.09
late_night_no_engagement_sessions	-0.10	-0.08
sessions	-0.22	-0.10
sessions_exceed_2hr	-0.04	-0.02
avg_max_chaining_depth	-0.05	-0.02
sum_chaining_depth_max	-0.04	-0.02
post_impressions_chaining	-0.06	-0.04
media_impressions_chaining	-0.07	-0.05

Overall behavior patterns - Instagram

21 Behavioral signal	Low attention Strength of associations		Low capability Strength of associations		
	Teens	Adults	Teens	Adults	
					Overall predictor strength for linking on-platform signals with low control are 2-3x stronger for predicting low attention than low capability Predictors are largely similar across adults and teens
Total time spent	~9%	~9%	~3.5%	~3.5%	Time spent and sessions (as indices of higher overall use) consistently a top predictor
Sessions (number)	~8%	~9%	~3.5%	~3%	
Evening time spent (7-10 pm; 10 pm-12 am)	~7% each	~7% each	~3% each	~3% 7-10 ~2.5% 10-12	Evening time spent, both overall and passive time, as a stronger predictor than late night use (particularly stronger than passive late night use)
Passive evening time spent (7-10 pm; 10 pm-12 am)	~6% each	~6% each	~3% each	~2.75% 7-10 ~2% 10-12	
Late night time spent (12 am - 4 am) (overall and passive)	~6% overall ~4.5% passive	~5.5% overall ~4.75% passive	~2.5% each	~2.5% each	
No engagement	~5.5%	~7%	~3%	~3%	No engagement repeat sessions relatively stronger as a

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Next steps

Measurement next steps to get to updated heuristics/metric goals

24 These global behaviors can be used for targeting/triggering thresholds (?already in Feed Pause)

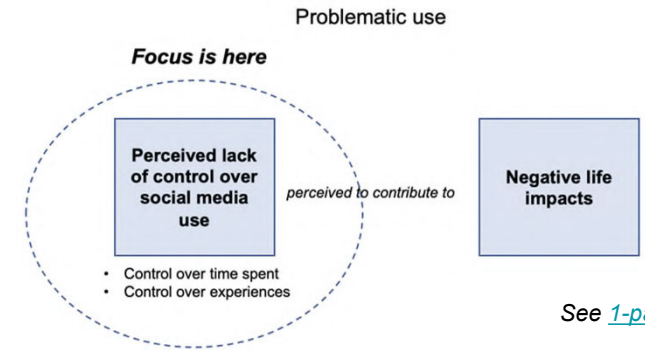
25
26 Next steps involve iterating on different versions of combined signals + thresholds to optimize precision/recall of perceived low control:

?—also include team priorities - eg., late night use

- 1) [Here are the heuristic identification] Stacking of individual behaviors –
 - a) Alternative decision tree models that are abbreviated: simplify the metrics included (e.g., between 3-5 predictors); ensure that each are independently meaningful
 - b) Can use those decision tree branching to determine thresholds
 - c) This will give a smaller set of behaviors that are all together the best predictors
- 1) Then redo thresholding based on what specific control product would be; e.g., if we were *only* targeting video chaining, what would the right threshold be? (e.g., behavior thresholds conditional on other targeting factors)
 - a) This would inform product strategy for the contexts in which features are offered
- 1) Opportunity size the potential impact of improved targeting for QM and TaB would be, on behavior change outcomes (even beyond only late night use); e.g., given a certain targeting threshold, what % of TAM is reached? e.g., refine what a reasonable behavior change goal would be (...leveraging efficacy of products to date;) –
 - a) E.g., extending Quiet mode to earlier hours
 - b) E.g., Take a Break triggering

Focusing on control increases our measurement precision

This supports our approach to focus on control: from both a conceptual and measurement standpoint, perceived control over platform use is more proximal to the actual on-platform experience, including behaviors that we can measure and potentially change.



See [1-pager here](#)

Alternative model

	Baseline	Precision	Recall	AUC
Former PU model on FB				
Outcome: low control + negative life impact	~0.11	0.17 all ages	0.73 all ages	0.66 all ages
Current PU model on FB				
Outcome: low attentiveness	~0.3-0.35	0.67 youth 0.57 adults	0.37 youth 0.44 adults	0.74 youth 0.69 adults
Current PU model on FB				
Outcome: low capability	~0.15-0.2	0.64 youth 0.46 adults	0.25 youth 0.24 adults	0.76 youth 0.73 adults