

Scanning or Simply Unengaged in Reading? Opportune Moments for Pushed News Notifications and Their Relationship with Smartphone Users' Choice of News-reading Modes

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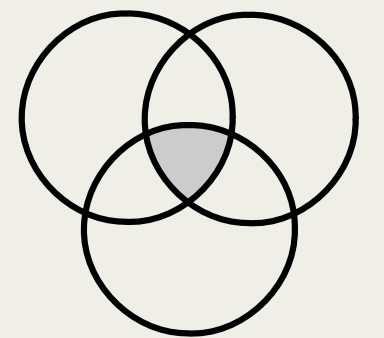
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1- WHY WE CHOSE THIS PAPER

- Relevant topic in the current age of smartphones.
- For developers, understanding how notification timing affects user interaction is important.
- The paper combines knowledge from various fields, including HCI and psychology, promoting interdisciplinary collaboration.



2.1- INTRODUCTION AND CONTEXT

Increasing access to Smartphones and Mobile Internet



News Consumption Shift from desktop to smartphones

Smartphone's feature to “push” news via notifications



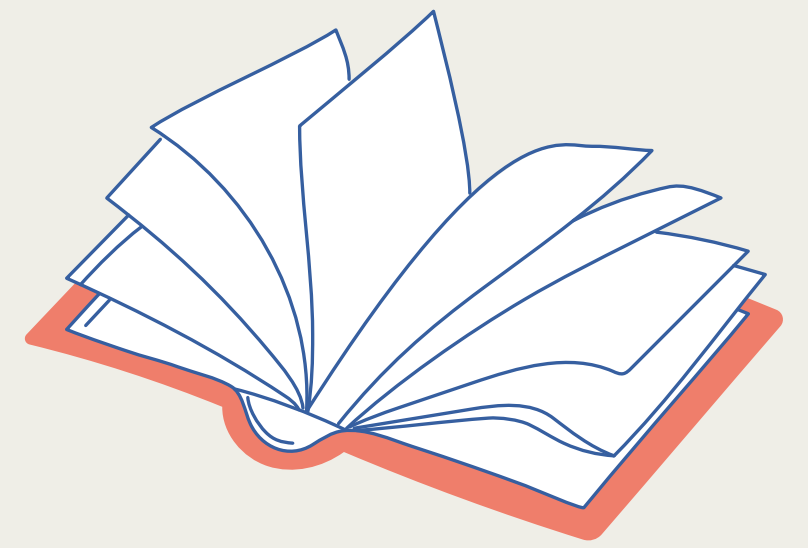
Rise in news consumption

Development of news app called NewsMoment



Analyse users and their reading modes

2.2- 4 Main Reading Modes



What are the common modes of news reading on smartphones?

Scanning: Get the main idea of what's going on.

Unengaged: Read passively without actively processing or retaining much information

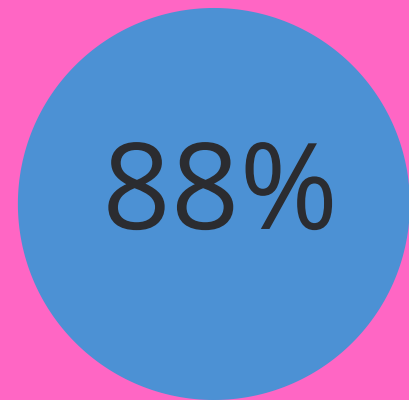
Comprehensive: Deep dive with a focus on understanding all aspects of the story

Typical: Users read the news with moderate attention and engagement

Further information -> Results

3- MOBILE NEWS CONSUMPTION

Who uses it?



**Americans consume
News from a mobile
device (2018)**

What affects it?



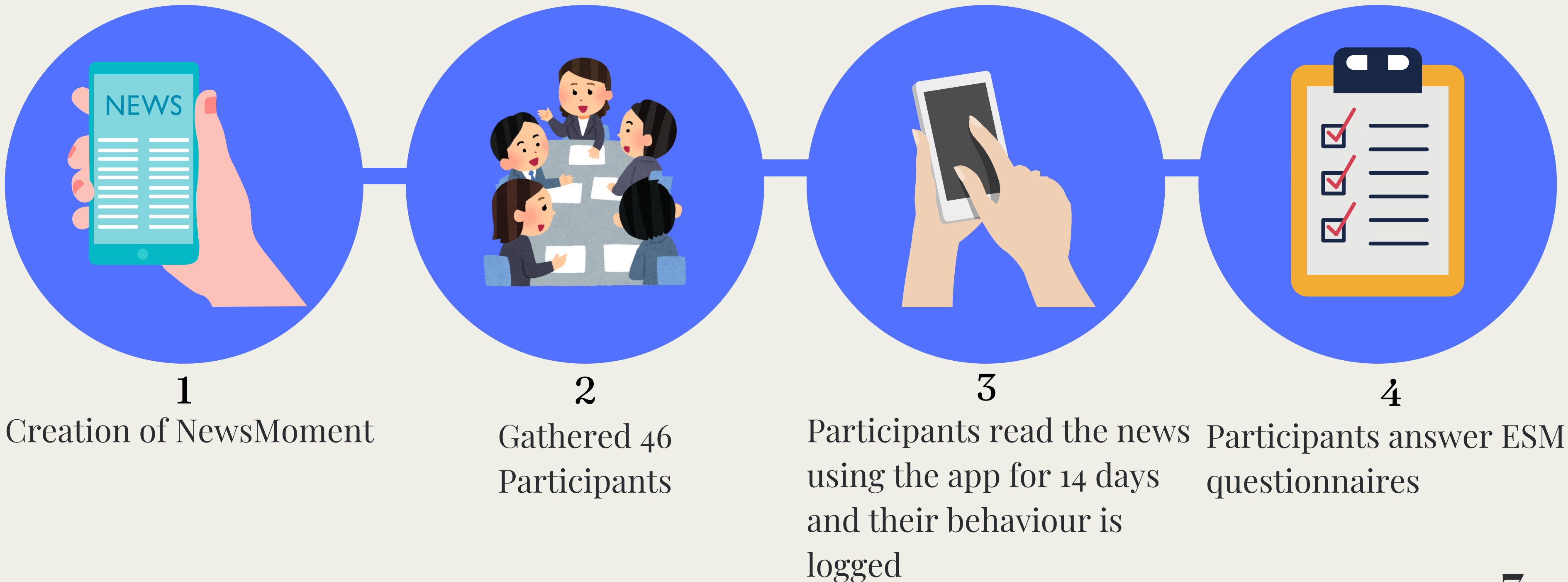
**Engagement levels and
psychological factors
influence news-reading
related behaviors**

How do people use it?



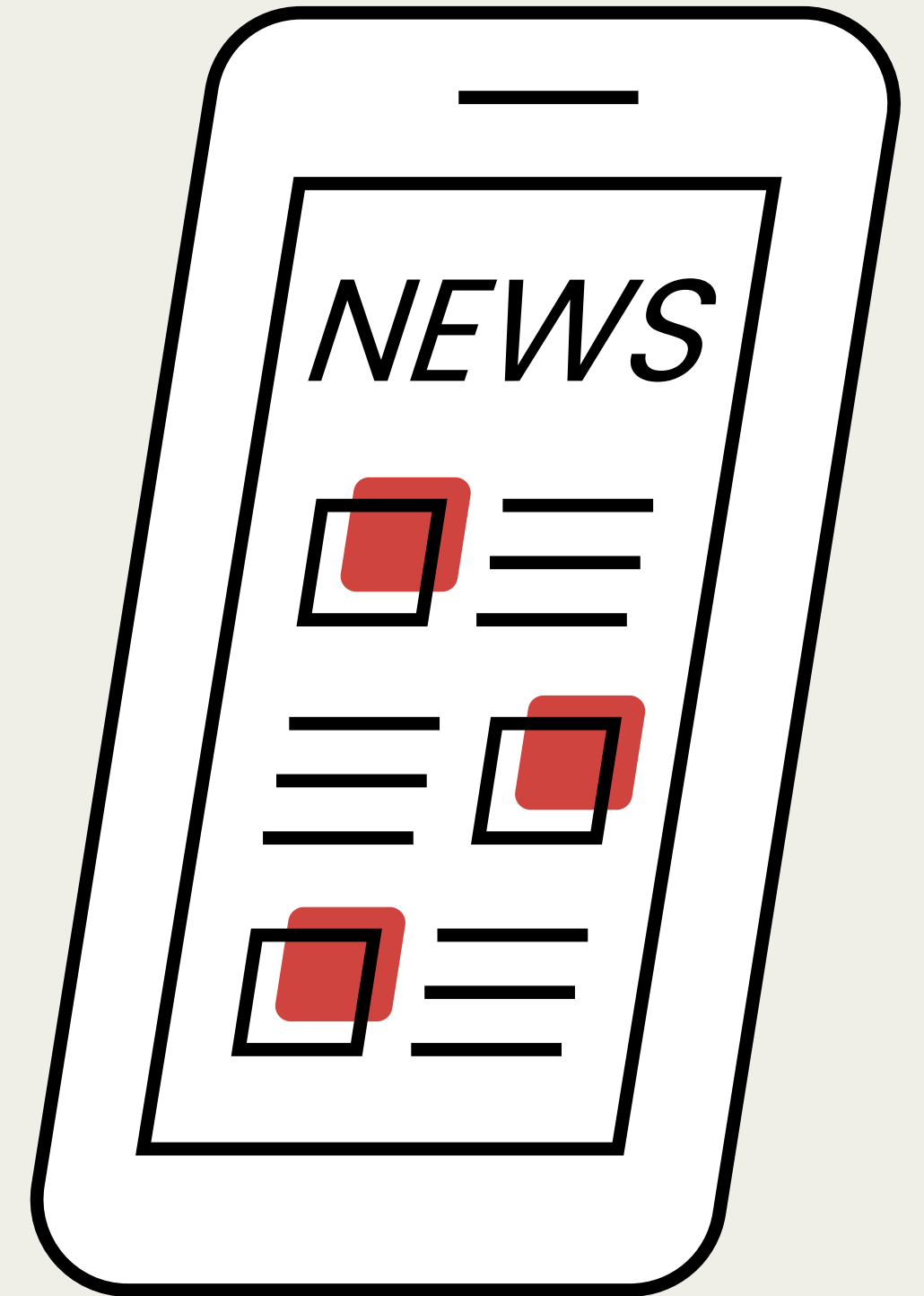
**Mobile news reading is
shorter and more frequent
throughout the day.
compared to other devices**

4.1- METHODOLOGY



4.2– NewsMoment

- Gathers news from 9 popular news apps in Taiwan
So users interact
- User Interface based on popular news apps interfaces
So its easy to use
- Suppresses notifications from other news apps,
So all the notifications are from NewsMoment.
- Tracks how people browse and read news on the platform.
So it can be analysed.



4.3- ESM STUDY

- 12h+ window configuration
- 2 Types of reading instances on Questionnaires:
Clicking notification and entering app
- Pilot Study for the Questionnaire itself
- End of day Questionnaire (not analyzed)

ESM

QUESTION 10

Please indicate how strongly you agree or disagree with the following statement: This news is authentic.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Strongly disagree Strongly agree

QUESTION 11

Please indicate how strongly you agree or disagree with the following statement: This news is accurate.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Strongly disagree Strongly agree

QUESTION 12

Please indicate how strongly you agree or disagree with the following statement: This news is believable.

1	2	3	4	5	6	7
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Strongly disagree Strongly agree

QUESTION 13-1

Please select or describe how you share this news.

☒ Screenshot

☐ Literal

☐ Verbally

☐ Others

NEXT

4.4– RECRUITMENT,PARTICIPANTS AND DATA ANALYSIS

- Video conference
- Use News–aggregating apps or receiving pushed news notifications on daily lives
- Total: 4010 questionnaires and 13 711 reading instances
- Final: 1 233 questionnaires and 12 746 reading instances

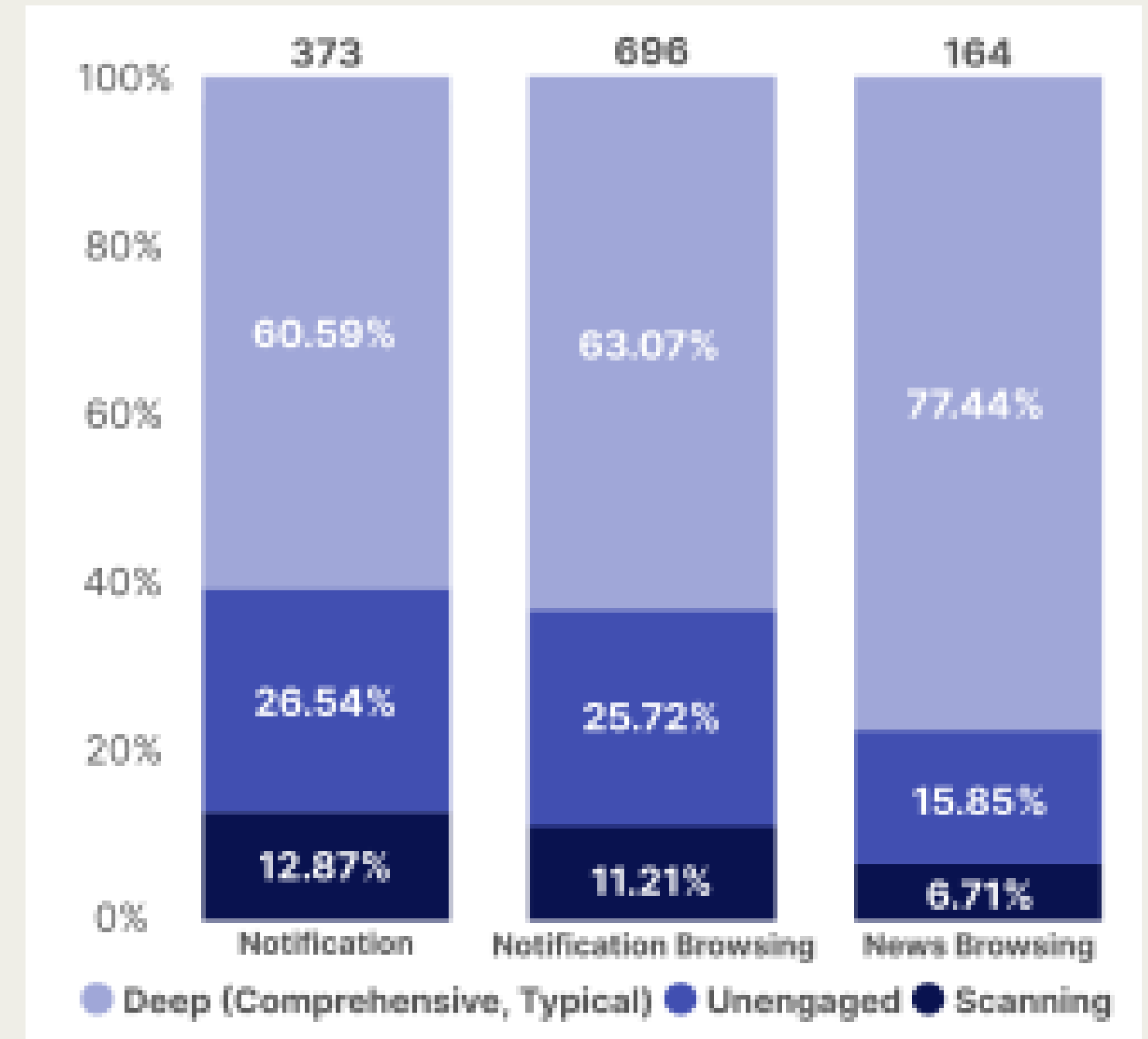
5.1 - RESULTS

- RQ₁: What are the common news reading modes on smartphones, and how pervasive is shallow/deep reading, particularly of pushed news?
- K-Means clustering algorithm

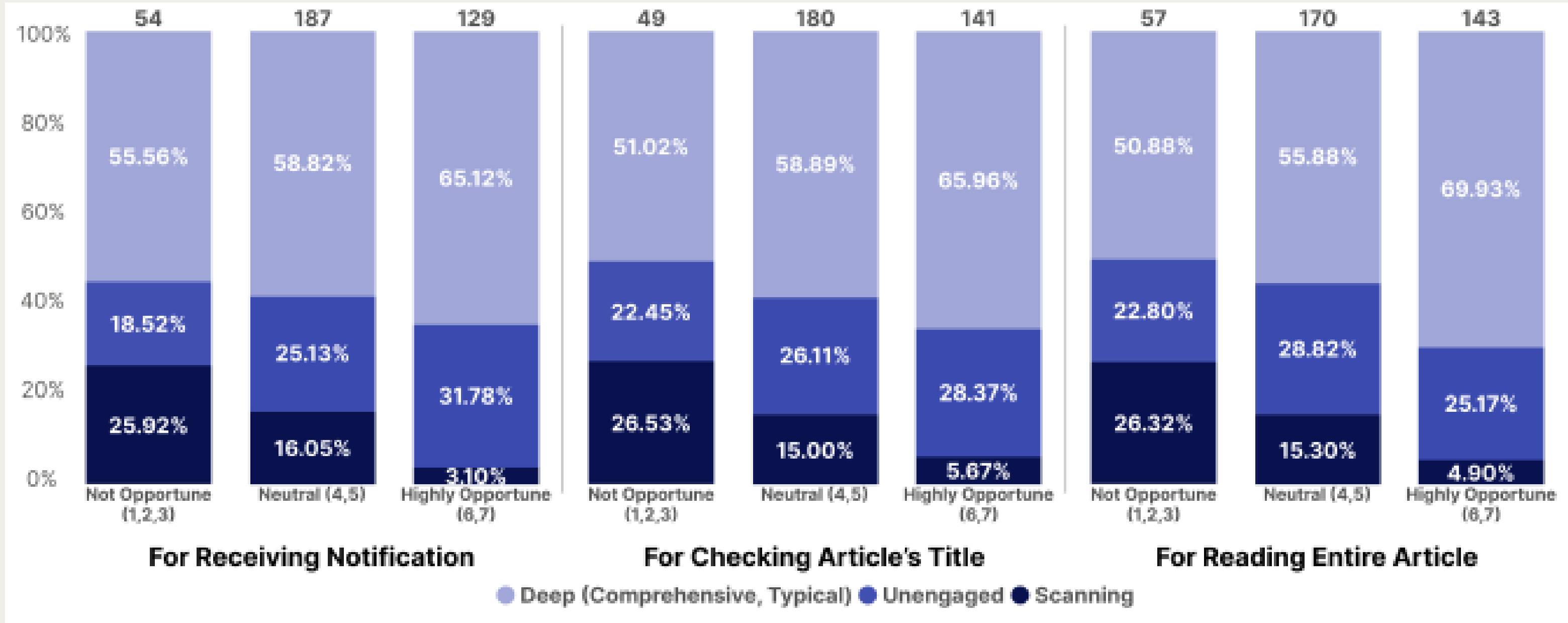
Reading Mode	# of Scroll	Speed	Speed SD	Dwell Time	Coverage	Page Depth
Typical (53.0%)	7.26 (SD = 5.47)	1.61 (SD = 1.76)	3.52 (SD = 3.09)	21.74 (SD = 19.28)	0.94 (SD = 0.12)	0.98 (SD = 0.08)
Comprehensive (7.0%)	29.10 (SD = 18.23)	0.51 (SD = 0.58)	1.99 (SD = 2.13)	134.14 (SD = 98.15)	0.93 (SD = 0.18)	0.95 (SD = 0.15)
Unengaged (29.8%)	1.37 (SD = 2.28)	0.65 (SD = 1.66)	1.07 (SD = 2.26)	11.08 (SD = 17.01)	0.29 (SD = 0.16)	0.44 (SD = 0.24)
Scanning (10.2%)	3.59 (SD = 2.90)	13.65 (SD = 9.29)	16.27 (SD = 9.37)	4.86 (SD = 4.15)	0.41 (SD = 0.24)	0.96 (SD = 0.13)

5.2 - RESULTS

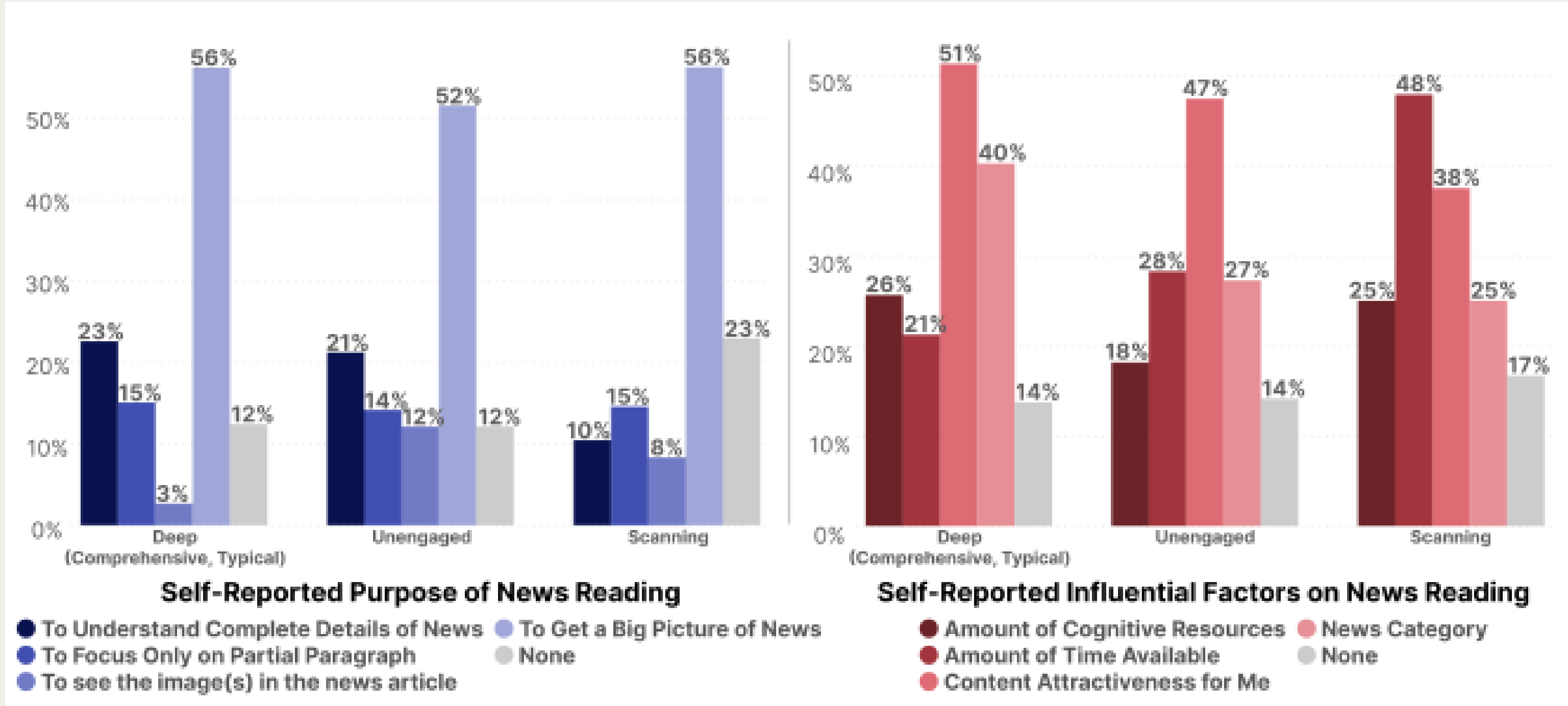
- RQ2: How does the perceived opportuneness of the moment for pushed-news notification delivery affect the likelihood that shallow/deep reading will ensue?



5.3 - RESULTS



5.4 - RESULTS



5.5 - RESULTS

- RQ3: How would smartphone users perceive themselves' news reading when they adopt a shallow or deep news-reading mode, including: a) the extent of their own news-reading coverage, engagement, and b) the credibility of the news they are reading?
- Self-Report – High Coverage
- Phone Logs – less than 50% coverage 32.7% of the time
- Authenticity, accuracy and believability

6- RESEARCH LIMITATIONS

- All Taiwanese young people
- Small sample size for “Scanning”
- No fact-checking
- No other types of reading material, such as blog articles or social media posts
- Behaviours like no. of scrolls may vary due to factors like screen length, not taken into account
- Oversampling of receptive moments



7- DISCUSSION


- Opportune moments for notifications result in more deep reading, but doesn't affect unengaged reading modes
- No Direct link between opportune moments and identifying misinformation (no fact-checking)
- Opportuneness reduces likelihood of Scanning reading mode, but not unengaged



8- CONCLUSION

- Timing for pushed News matters
- Opportune moments are associated with Deep Reading
- Unengaged reading method unaffected by opportune/inopportune moments
- Scanning method increases at inopportune moments and is associated with lack of time
- Identifying opportune moments is important to reduce Scanning reading, but doesn't affect Unengaged reading, further exploration is needed to explore the latter

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