

Comparing Engagement Effects of Online and Offline Media Consumption Processes

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Agenda

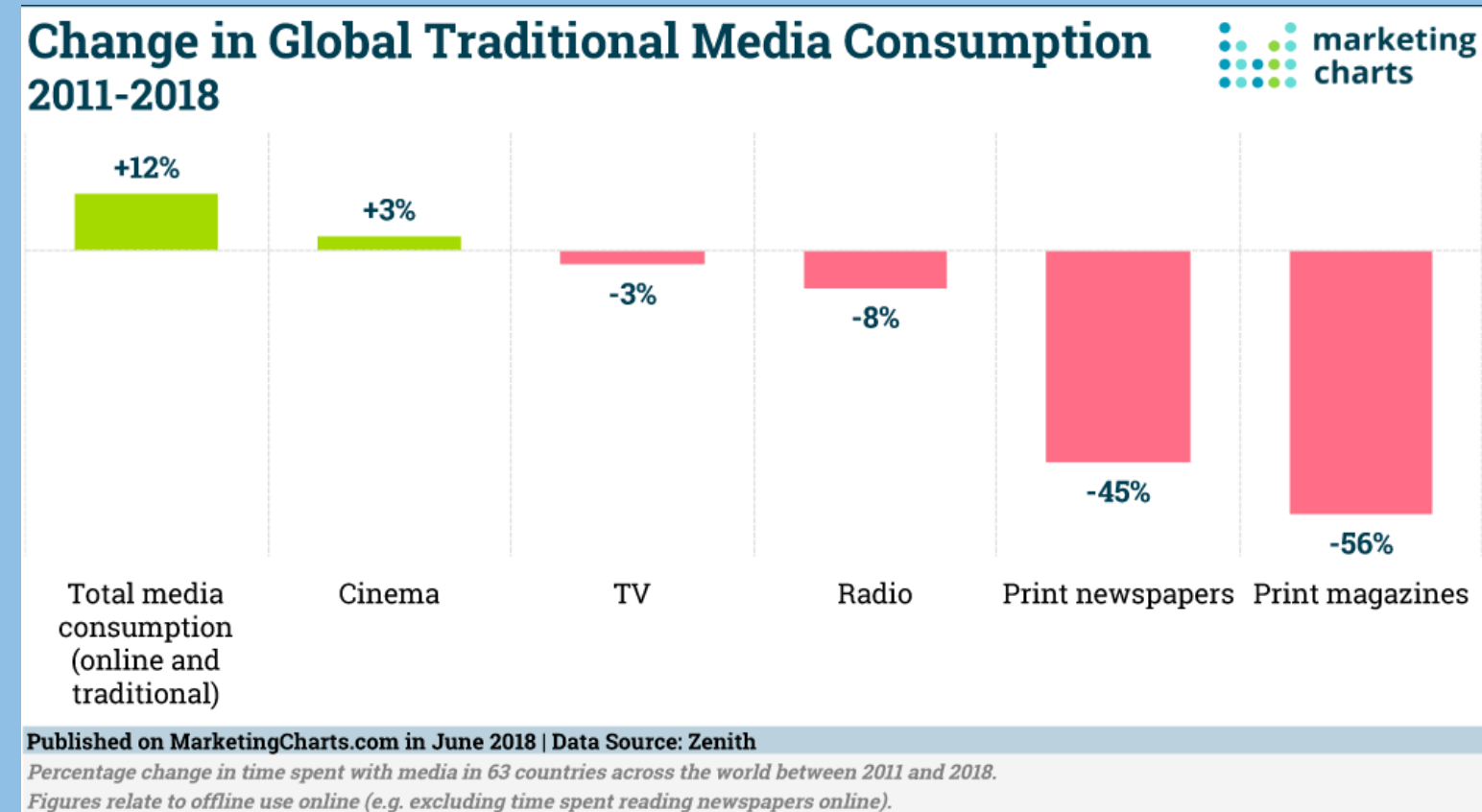
- 1. Project Background**
- 2. Framework and Study Design**
- 3. Results**
- 4. Conclusions**

1. Project Background



News Content Consumption patterns are changing dramatically

- According to Reuters Digital News Report (2018):
 - The global news consumption on mobile phones continues to rise, in most countries the usage is even doubling over the past six years.
- On the other side printed news usage numbers are falling



Changing News Content Consumption Requires Deeper User Knowledge

The changing news consumption habits create new challenges for media companies:

1. From a B2C perspective: How do we manage news platforms in a multiple platform environment?
2. From a B2B perspective: What is the composition news media consumers on different platforms for targeting purposes (with consideration of attention)

Media managers need to have deeper understanding of the news consumer engagement processes.





Collaborative Study of HMS, UF, and Quality Alliance

The Quality Alliance, which consists of the German news brands Handelsblatt, Süddeutsche Zeitung, Frankfurter Allgemeine, and DIE ZEIT, started an initiative to examine the impact of quality news content on users/consumers in the multiplatform, digital news media environment.

A team of researchers from UF and HMS conducted the design, data collection and analysis with a focus on affective engagement.



2. Framework & Study Design

Theoretical Background

Two main areas of literature:

- 1. ELM model was used as a theoretical framework**
- 2. Engagement Research (consumer/ad/message/media)**

ELM Framework:

- **Elaboration likelihood model (Petty & Cacioppo, 1986) serves as the foundational theory for the study. ELM posits that individual's attitude change in terms of central route (cognitive) and peripheral route (simple cues or inferences heuristically).**
- **While message quality is a typical example of central route, source credibility is an example of peripheral route (Rucker & Perry, 2006; Stephenson, Benoit, & Tschida, 2001; Rosen, 2000).**

Theoretical Background

ELM Framework II:

- **ELM suggests that “high elaboration likelihood states” typically lead to the central route of persuasion, while “low elaboration likelihood states” lead to the peripheral route.**
- **The proposed analytical framework subscribes to the fundamental notion of ELM to describe the persuasive environment of different news platforms and branded news (unbranded vs. branded news)**

Theoretical Background

Engagement:

- Instead of “involvement,” the construct of “engagement” is investigated in the study
- Engagement is an important and more appropriate construct today when adopting ELM to examine media platforms because it presents the interactive nature of an online environment and reflects the challenge of an attention economy than the simple “involvement” construct used in past studies.
- In addition, engagement “is a multidimensional construct, including behavioral, cognitive and affective dimensions” (e.g. Dessart, Veloutsou & Morgan-Thomas, 2015; Brodie et al., 2013)

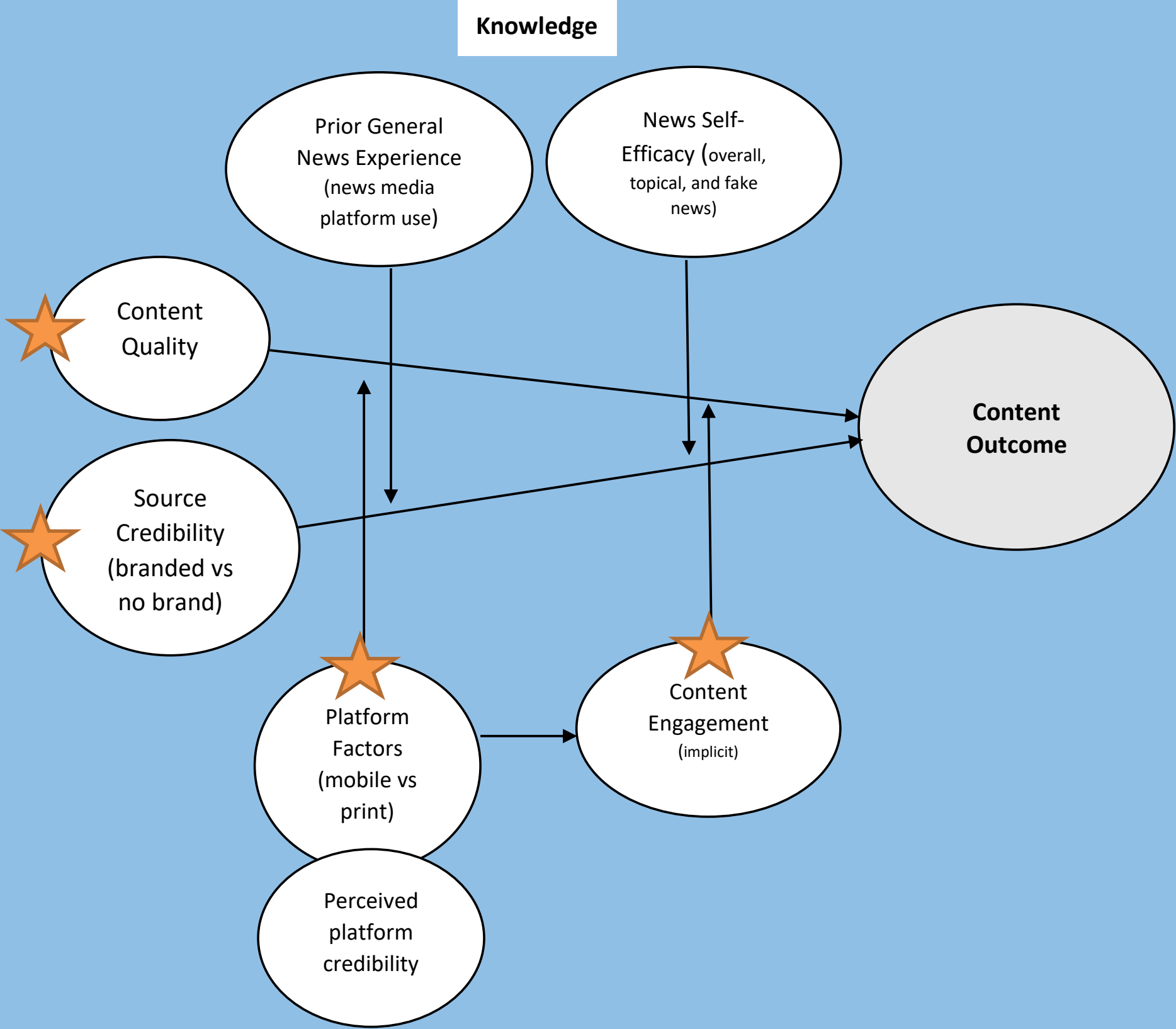
Considerations

Challenges to Measure Affective Engagement

- **Affective engagement or emotions are hard to verbalize, which is why neurophysiological data play an increasingly important role in marketing research**
- **Evidence of potential of physiological data to capture “emotion, arousal and engagement” (Kumar et al., 2013, p.336)**
- **New insights about affective engagement with neurophysiological approaches: mobile eye tracking, skin conductance, heart rate**

Overall Analytical Framework

★ Focus of this study

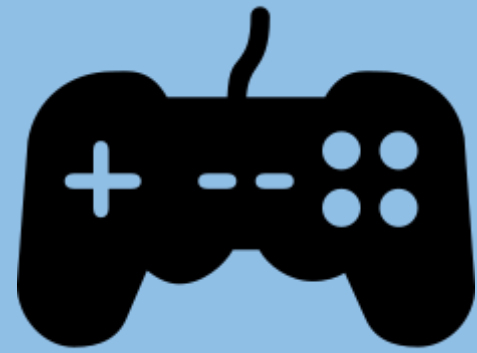




Research Questions

- **RQ1: What are the differences in news quality perception between print and mobile news platforms?**
- **RQ2: How do perceived content quality and source credibility impact print and mobile news platform usage experience?**
- **RQ3: How do perceived content quality and source credibility affect print and mobile news content consumption outcome?**
- **RQ4 (implicit based): How do print and mobile news platforms differ in terms of emotional engagement and attention?**

Comparing Mobile and Print Media Use with a Mixed Method Design



IMPLICIT -CONTROLLED CONTENT

Two content exposures:
One mobile, one printed.
One branded, one
unbranded.

IMPLICIT -FREE READING

10 minutes to freely read a
real news article on a
printed newspaper or
mobile platform

EXPLICIT -SURVEY

Computer-based regular
questionnaire.

360° Measurements in Biometric Lab + Explicit Survey



Eye-tracking
for Attention



EEG for
Approach/
Avoidance
(Direction of
Emotions)



EDA
for Arousal
(Intensity of
Emotions)



Heart Rate
for Arousal
(Intensity of
Emotions)



Explicit Rating
Including
engagement
and quality
scales

Sample Scales

News source credibility (Phase 2 only on specific brands of the last articles read)	<p>7-point bi-polar scale: In my view, (specific news brand) is:</p> <ul style="list-style-type: none"> • Not trustworthy/trustworthy • Not credible/credible • Inexperienced/experienced • Not an expert/expert • Not accurate/accurate • Unfair/fair • Biased/Unbiased 	<p><u>Bhattacharjee</u> & Sanford (2006)</p> <p><u>Gaziano</u> & McGrath (1986)</p> <p>Xu (2013)</p>
News Media Platform credibility	<p>7-point bi-polar scale:</p> <p>In my view, news articles on mobile platform in general are:</p> <ul style="list-style-type: none"> • Not trustworthy/trustworthy • Not credible/credible • Inexperienced/experienced • Not an expert/expert • Not accurate/accurate • Unfair/fair • Biased/Unbiased <p>In my view, news articles on printed newspaper in general are:</p> <ul style="list-style-type: none"> • Not trustworthy/trustworthy • Not credible/credible • Inexperienced/experienced • Not an expert/expert • Not accurate/accurate • Unfair/fair • Biased/Unbiased 	<p><u>Bhattacharjee</u> & Sanford (2006)</p> <p><u>Gaziano</u> & McGrath (1986)</p> <p>Xu (2013)</p>

Perceived quality	<p>Using semantic differential scale items:</p> <p>Overall, the news content I just read is:</p> <ul style="list-style-type: none"> • Informative • Valuable • Persuasive • High quality • Reliable • Objective • Trustworthy • Honest • Credible • Intelligent • Proficient • Profound • Inventive • <u>Superficial</u> (R)
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News article/content quality (Phase 1 and 2)	<p>7-point bi-polar scale: The ___ article(s) I just read is/are:</p> <ul style="list-style-type: none"> • Not informative/informative • Not valuable/valuable • Not persuasive/persuasive • Low quality/high quality 	<u>Bhattacharjee</u> & Sanford (2006)
<p>Content engagement (explicit/narrative engagement)</p> <p>(Phase 2 only for the last articles read)</p>	<p>Narrative engagement</p> <ul style="list-style-type: none"> • I had a hard time making sense of what was going on in the article(s) • My understanding of the article(s) is unclear • I had a hard time recognizing the thread of the article(s) • I found my mind wandering while reading the article(s) • While I read the article(s) I found myself thinking about other things • I had a hard time keeping my mind on the article(s) • The article affected me emotionally <p>Use a 7-point scale (strongly disagree-strongly agree)</p>	<u>Busselle</u> & <u>Bilandzic</u> (2009)

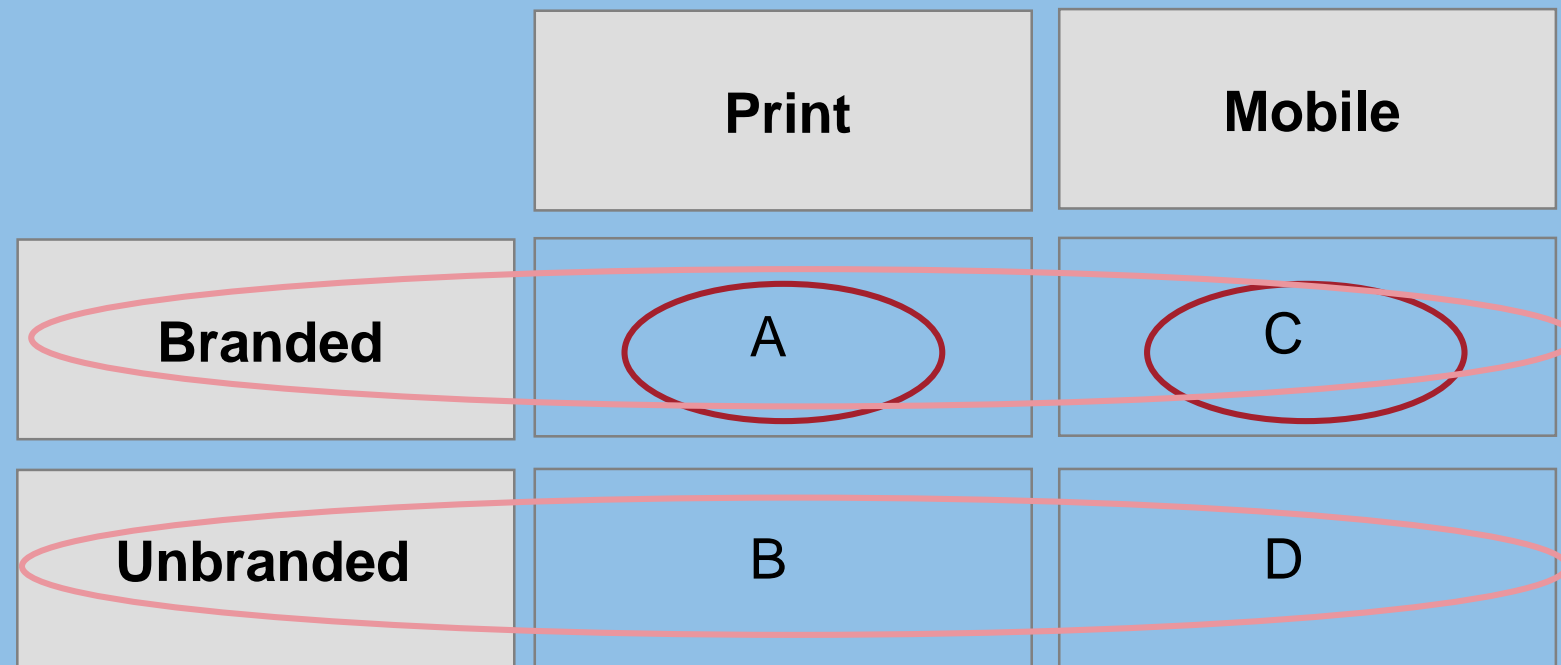
Content stimuli selection

1 **Selection** of real, previously published contents from the media brands (articles with 3.000-3.500 characters or 2:30 min reading duration)

2 Using a relatively neutral content, which means no emotional swings in either positive or negative direction aroused by the content.

3 Exclusion of content with current references (e.g. „last Friday“)

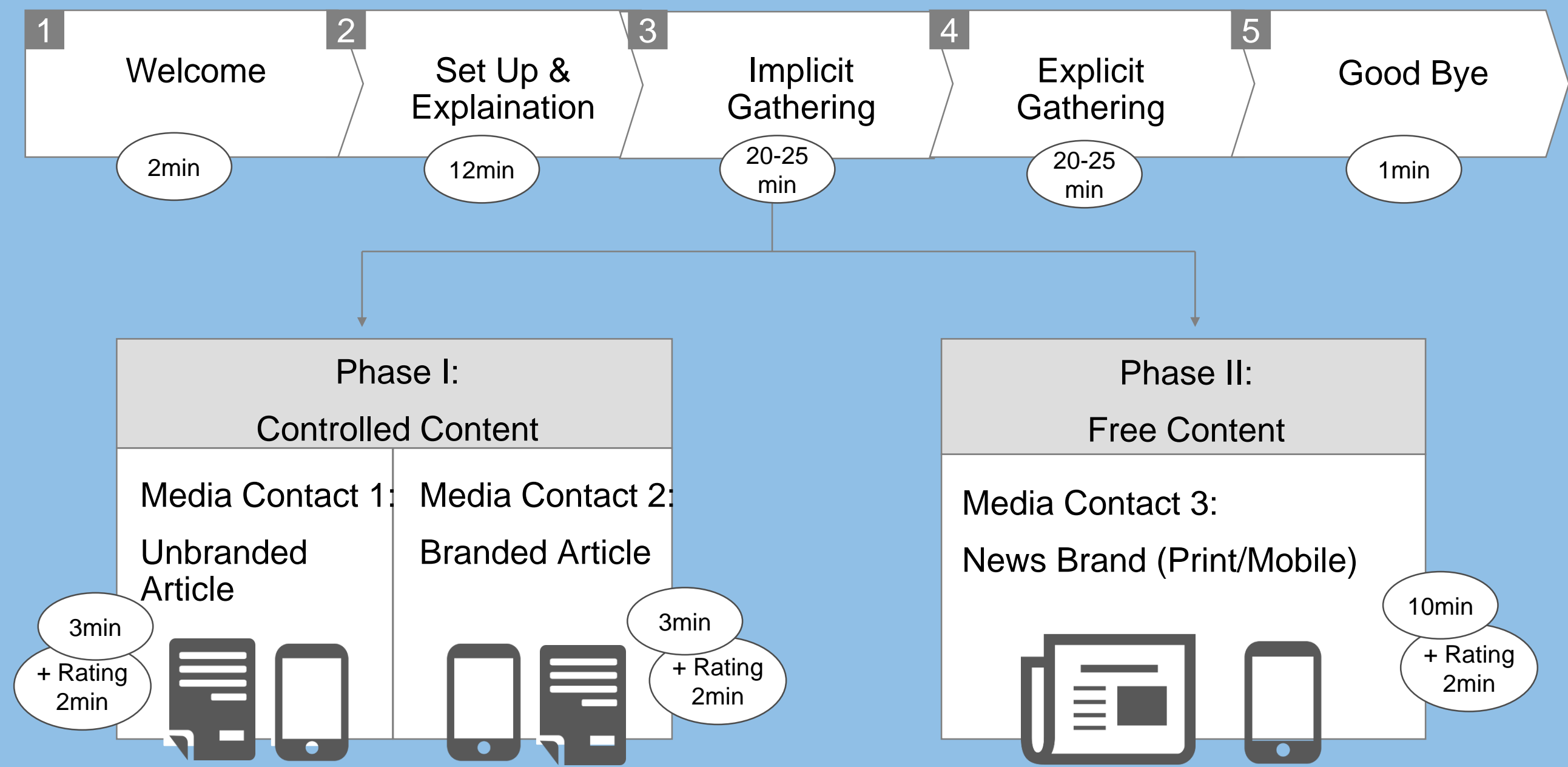
Experimental Design



- Data can be analyzed on an aggregated or single base
- Main focus: Print vs. Mobile and Branded vs. Unbranded

Data Gathering Process in the NeuroLab

60 Minutes per participant





PARTICIPANTS

Chosen to reflect the
reality of quality
news consumers

162

in total over 32 days of
lab measurement

70

% male

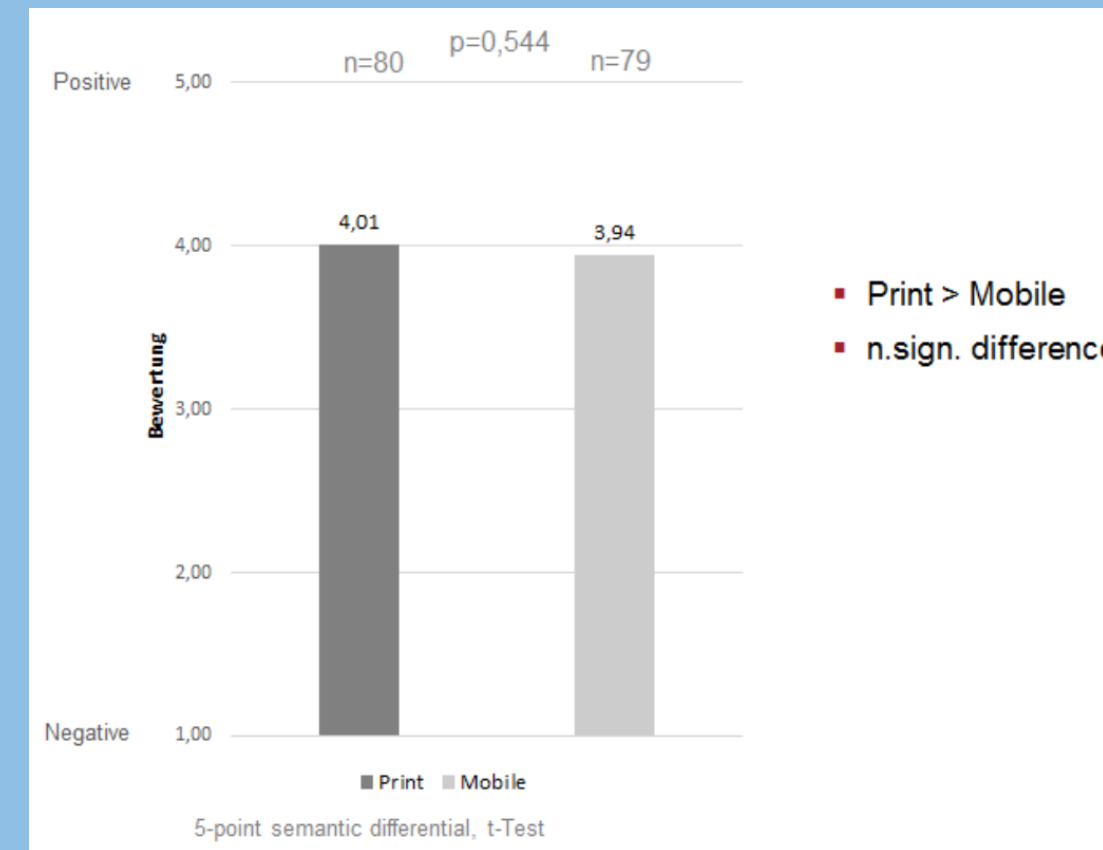
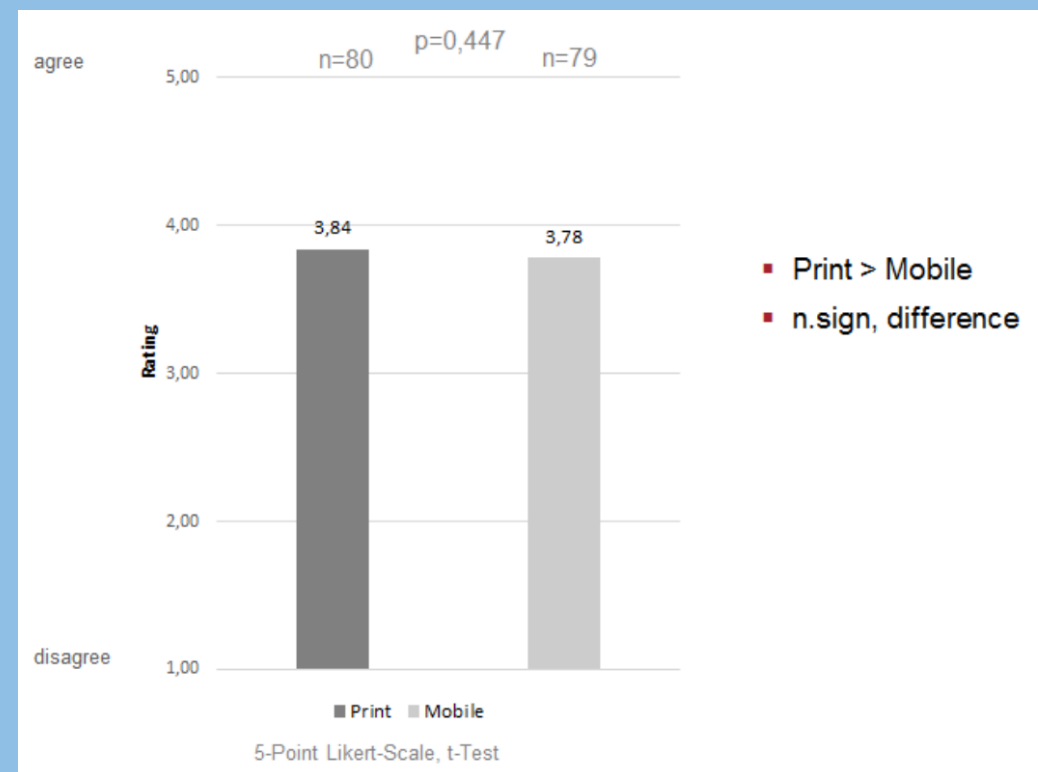
73

% with high level of
education

3. Results



RQ1: What are the differences in news quality perception between print and mobile news platforms?



- There is no significant difference between print and mobile platforms for either branded news or unbranded news in the news quality perception between print and mobile news platform, using either academic or industry quality scales.
- One exception - print news platform is perceived to be significantly less exaggerating than the mobile news platform in one item scale.



RQ2: How do perceived content quality and Source Credibility impact print and mobile news platform usage experience and Gratifications?

	Experience Outcomes (print)	Experience Outcomes (mobile)	Gratification Outcomes (print)	Gratification Outcomes (mobile)
Content Quality (unbranded)	.262***	.094	.306***	.241**
Content Quality (branded)	.225**	.236**	.182*	.222**
Source Credibility	.044	-.023	.071	.006

*p<.05 **p<.01 ***p<.001

- **Content quality is positively correlated with news gratification outcomes, indicating that reading a high quality news article, branded or not, is a satisfying experience to readers, on both mobile and print platforms.**
- **Content quality impacts the experience of print and the experience of mobile news both significantly when it's a branded environment. In an unbranded environment, it only matters for the print platform.**
- **Source credibility is insignificant in affecting the usage experience.**



RQ3: How do content quality perception and source credibility affect content outcome on print and mobile news platforms?

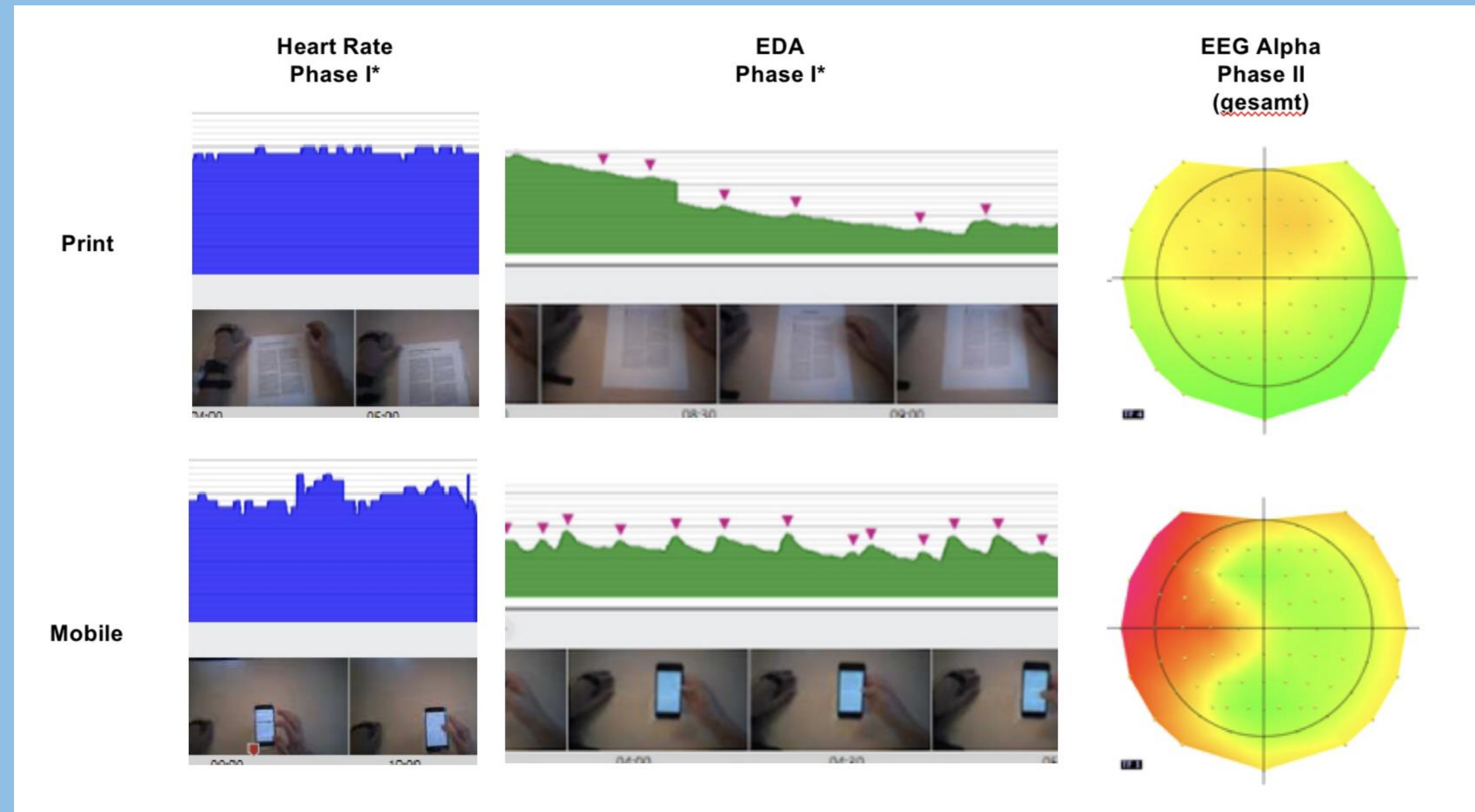
	WOM (print)	Talk More (print)	More Info (print)	WOM (mobile)	Talk More (mobile)	More Info (mobile)
Content Quality (unbranded)	.185*	.279***	.226**	.169*	.145	.047
Content Quality (branded)	-.010	.058	.075	.149	.247**	.264**
Source Credibility	.110	-.009	.018	.041	.005	.050

*p<.05 **p<.01 ***p<.001

- **Content quality is important in an unbranded environment for the print news platform and in WOM for the mobile platform.**
- **In a branded environment, talk more and more info outcomes are affected by content quality perception for the mobile platform.**
- **Source credibility is insignificant in the process.**



RQ4 (implicit based): How do print and mobile news platforms differ in terms of emotional engagement and attention?



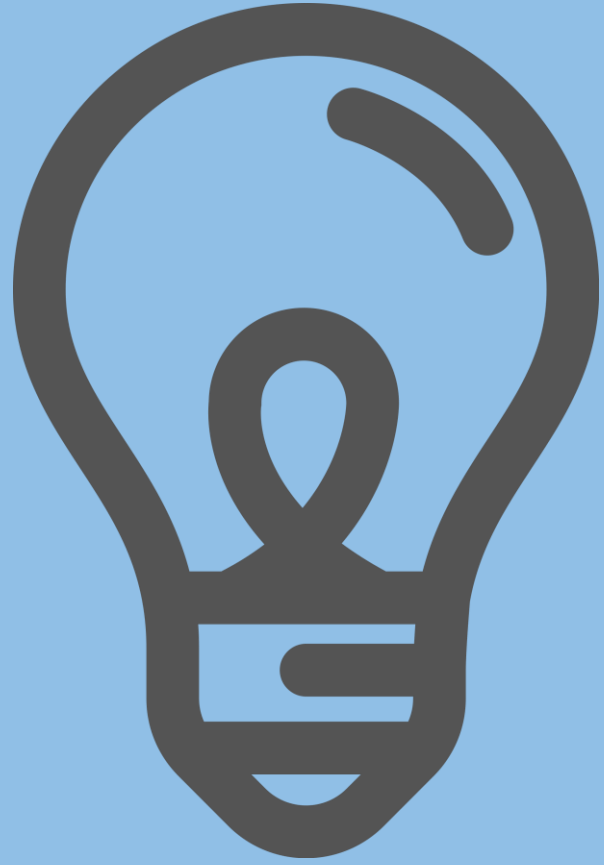


RQ4 (implicit based): How do print and mobile news platforms differ in terms of emotional engagement and attention?

- The results show a higher attention level and skin conductance based peaks in mobile news consumption compared to the print version
- A higher number of peaks has been revealed as a valid indicator for arousal (user active / passive)

	Implicit Measures			
Device	Eyetracking (Attention)	EDA (Engagement occurs)	Heart Rate (Engagement occurs)	EEG (Engagement pos./neg.)
Result	Time spent: P < M	Peaks: P < M Amplitude: P > M	Shimmer: P > M Empatica: P > M	Alpha: P > M Beta: P > M Gamma: P > M

P=Print, M=Mobile, red= signifkant



RQ4 (implicit based): How do print and mobile news platforms differ in terms of emotional engagement and attention?

Further findings:

- **GSR amplitude seems to correlate with both branded print and mobile news reading experience. The larger the variation of skin conductance amplitude, the more likely a person is drawn into reading the news especially those high-quality ones. This suggests that good news influence one's mood greatly in the experiment.**



RQ4 (implicit based): How do print and mobile news platforms differ in terms of emotional engagement and attention?

Further findings:

- **EEG alpha, beta, and gamma are all moderators of the correlations between news quality and branded mobile news experience. This suggest that when the news is in low quality, people are less aroused and more relaxed indicated by high level of EEG alpha value, whereas high quality news arouses people and induces higher levels of EEG beta value. The EEG Gamma value indicating that a right amount of arousal elicited by reading quality news is important as extremely high or low value of gamma value indicating anxiety or depression. The exact effect needs further research to corroborate.**

4. Conclusions



SUMMARY I

News Media Quality Ratings Results show that there are **no significant differences** in the perceived quality of news content in a printed newspaper vs. on a smartphone – based on the **academic and industry based quality rating** scales.

Content quality is important in driving gratification outcomes – both for mobile and print, and for unbranded and branded environments.

Content quality only affects news experience on the print platforms in an unbranded news environment, but it impacts both mobile and print news experience when in a branded environment. It is especially important for the mobile platform regarding additional engagement outcomes when the news is branded.

SUMMARY II

Implicit Data: Based on **implicit** data, mobile and print seem to activate users in **different ways**:

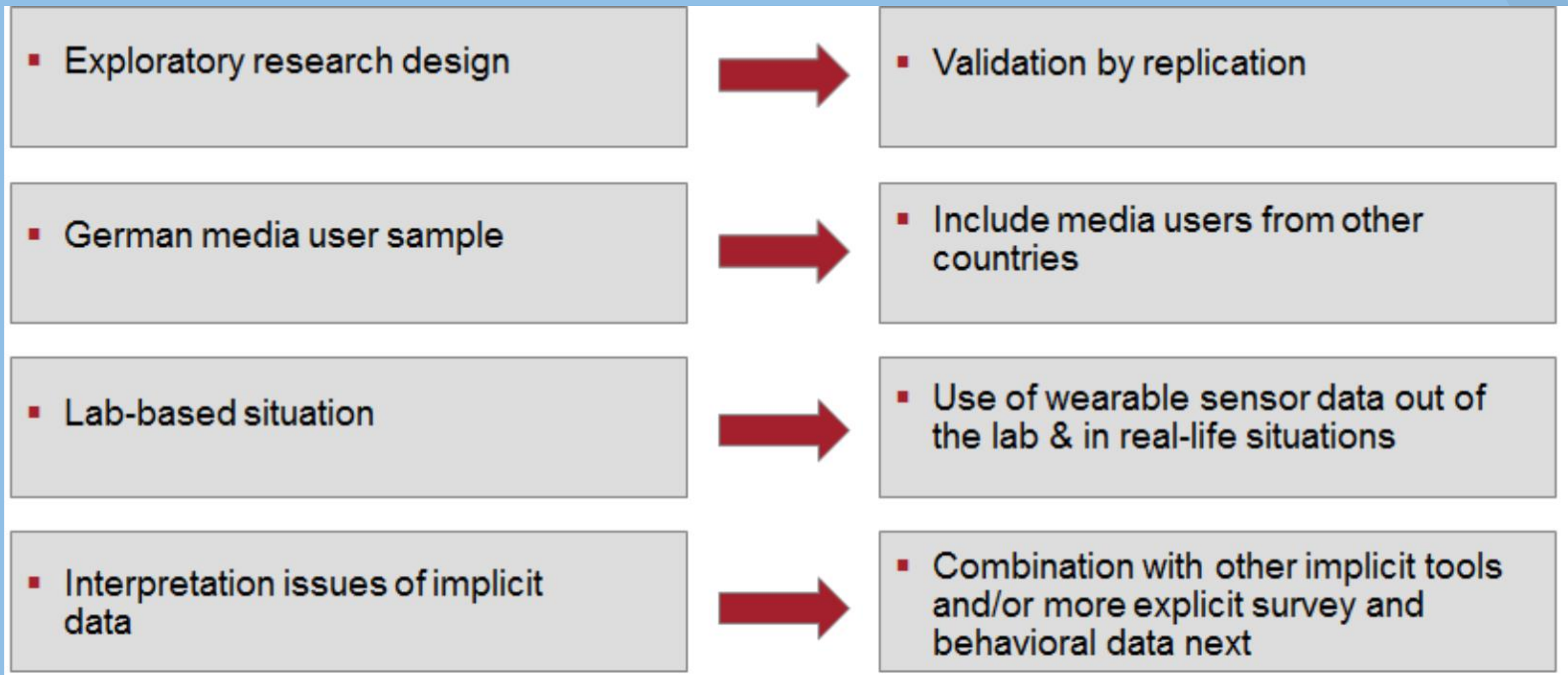
- Participants invested significantly longer time with mobile than with print content,
- EDA engagement is significantly higher for mobile compared to print content,
- Higher EDA measures points to a more intense perception of mobile content.

Discussion

Implicit Data: Although the data gathering process of implicit data is time consuming, it can be useful to add in a study design about engagement. Especially the affective dimension of engagement is hard to capture with scale based data. Today engagement measures mainly work on a behavioral level, because affective measurement is too time and costly for daily business.

Outlook: Technological innovations and new trends (AI) will improve implicit data gathering and analysis processes – in terms of costs and complexity in the future

LIMITATIONS AND OUTLOOK



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