There is no such thing as 'the online consumer behavior' –
insights into the influence of digital devices on consumers

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About me

Dr. Lukas Wolf

- Doctorate at **Friedrich-Alexander-Universität Erlangen-Nürnberg**, Germany

- Research on Customer Experience Management and Omnichannel Marketing

- Associate Consultant at **Wavestone** starting in July

There is no such thing as 'the online consumer behavior' –
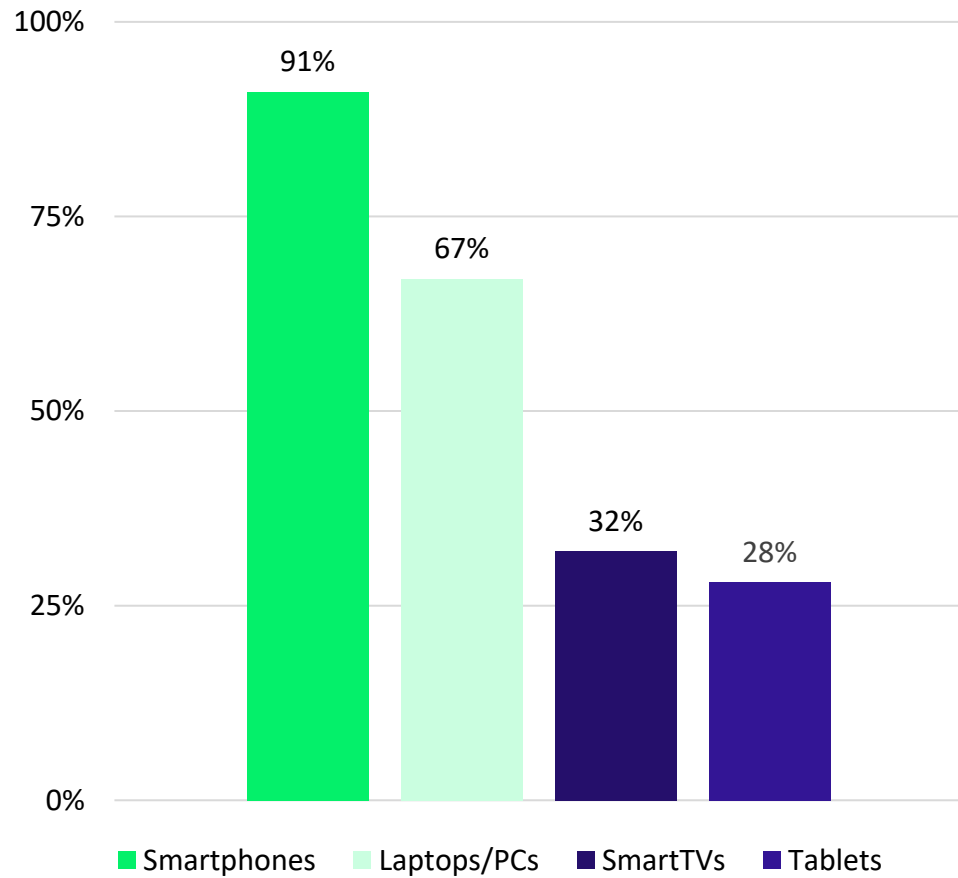insights into the influence of digital devices on consumers

What do you see?

What do you see?

Digital devices used to access the internet

Source: GWI (2022); *Global survey of internet users aged 16 to 64*

What **else** do you see?

What **else** do you see?

Completely different device characteristics

- **Different screen sizes and formats** (horizontal or vertical)

- **Different operating modes** (touch screen or mouse & keyboard)

- **Different equipment and design** (e.g. sensors or GPS receivers, built-in cameras)

The **obvious differences between digital devices** in their physical properties further entail divergent contexts of use (e.g. stationary or mobile) and customer evaluations (e.g. perceived usability or perceived enjoyment).
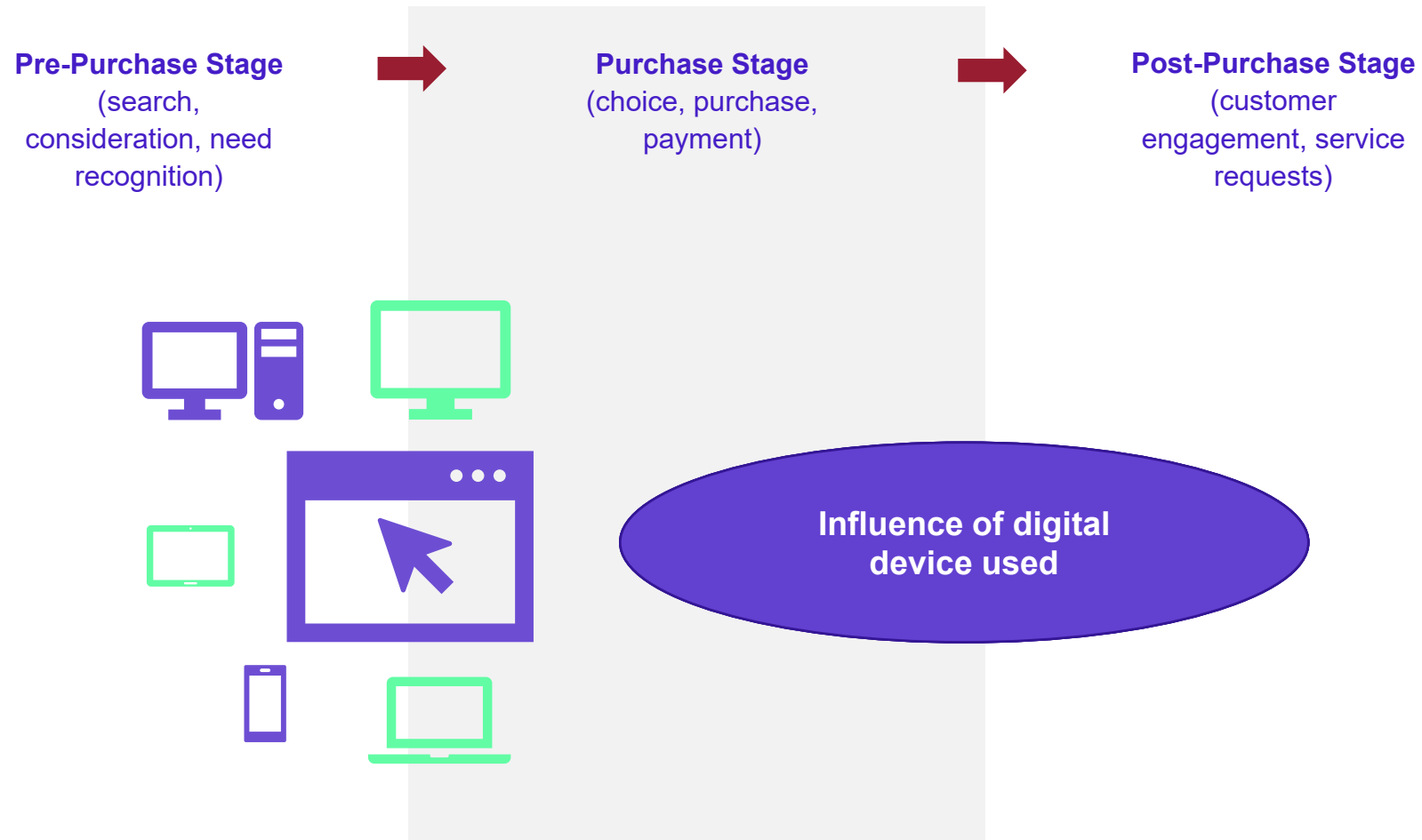
It is evidently the case that **customer behaviors likewise vary depending on the device employed**.

The digital device used influences customer behaviors throughout the customer journey

Pre-Purchase Stage
(search, consideration, need recognition)

Purchase Stage
(choice, purchase, payment)

Post-Purchase Stage
(customer engagement, service requests)

Influence of digital device used

There is no such thing as 'the online consumer behavior' –
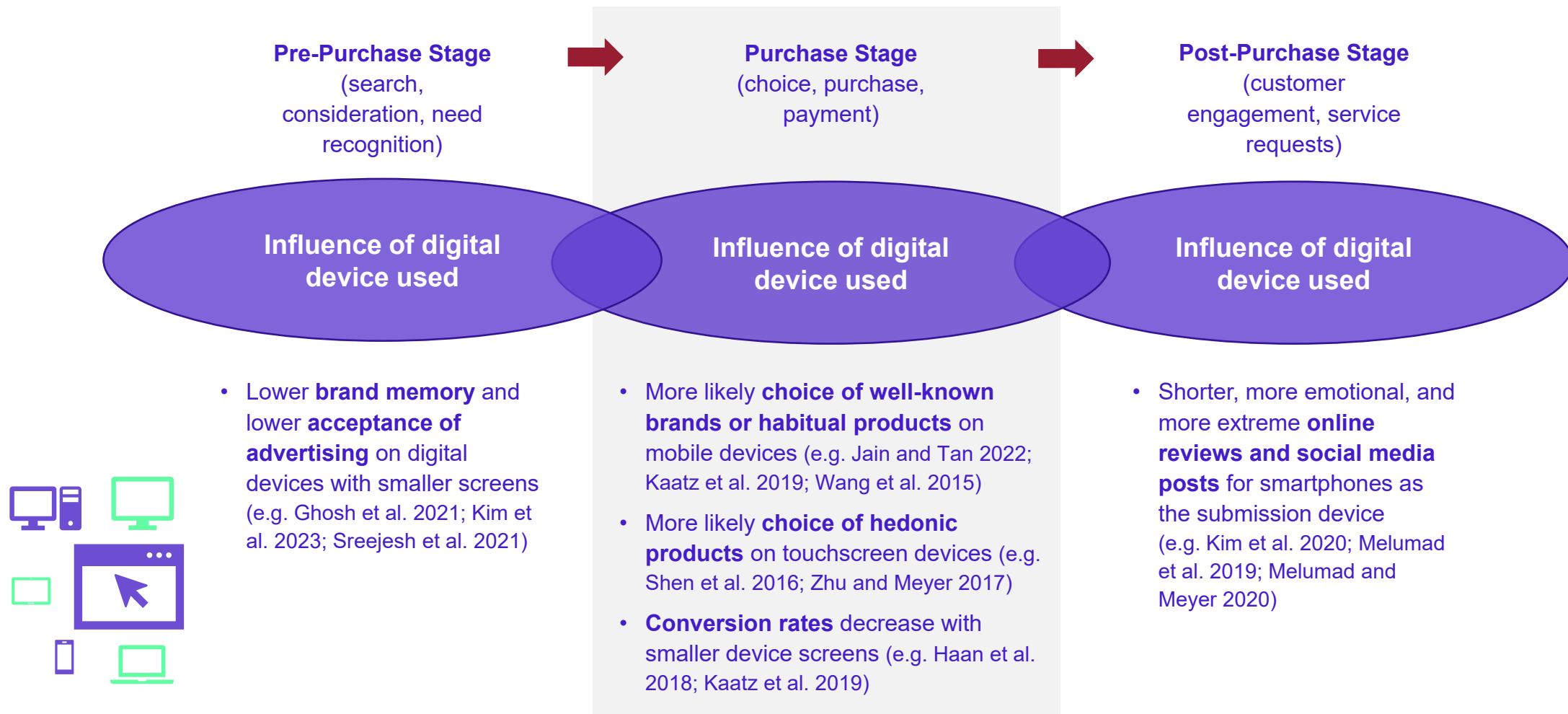insights into the influence of digital devices on consumers

Research project #1

The digital device used influences customer behaviors throughout the customer journey

Pre-Purchase Stage
(search, consideration, need recognition)

Purchase Stage
(choice, purchase, payment)

Post-Purchase Stage
(customer engagement, service requests)

Influence of digital device used

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- Lower **brand memory** and lower **acceptance of advertising** on digital devices with smaller screens (e.g. Ghosh et al. 2021; Kim et al. 2023; Sreejesh et al. 2021)

- More likely **choice of well-known brands or habitual products** on mobile devices (e.g. Jain and Tan 2022; Kaatz et al. 2019; Wang et al. 2015)

- More likely **choice of hedonic products** on touchscreen devices (e.g. Shen et al. 2016; Zhu and Meyer 2017)

- **Conversion rates** decrease with smaller device screens (e.g. Haan et al. 2018; Kaatz et al. 2019)

- Shorter, more emotional, and more extreme **online reviews and social media posts** for smartphones as the submission device (e.g. Kim et al. 2020; Melumad et al. 2019; Melumad and Meyer 2020)

<u>Source</u>: Wolf (2023);
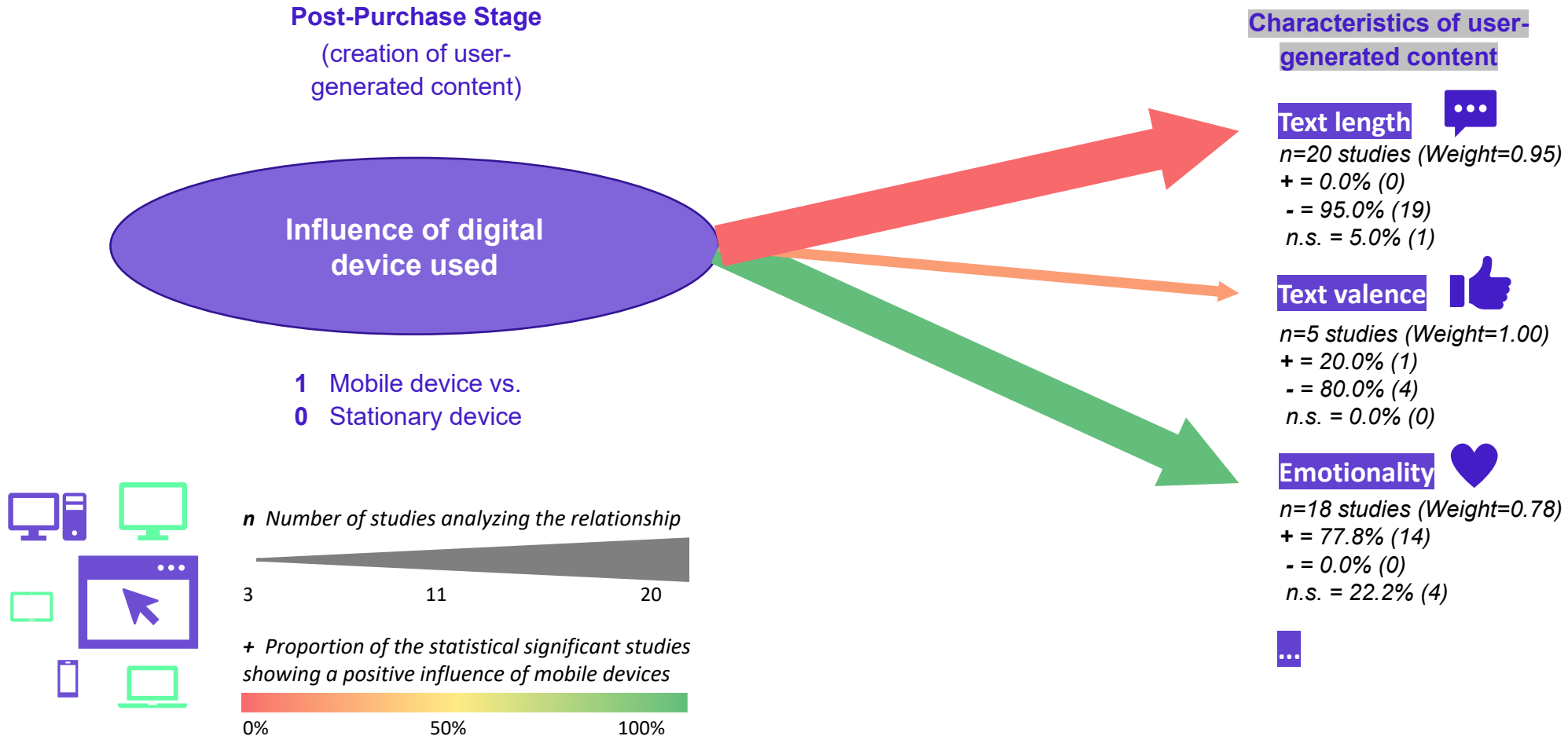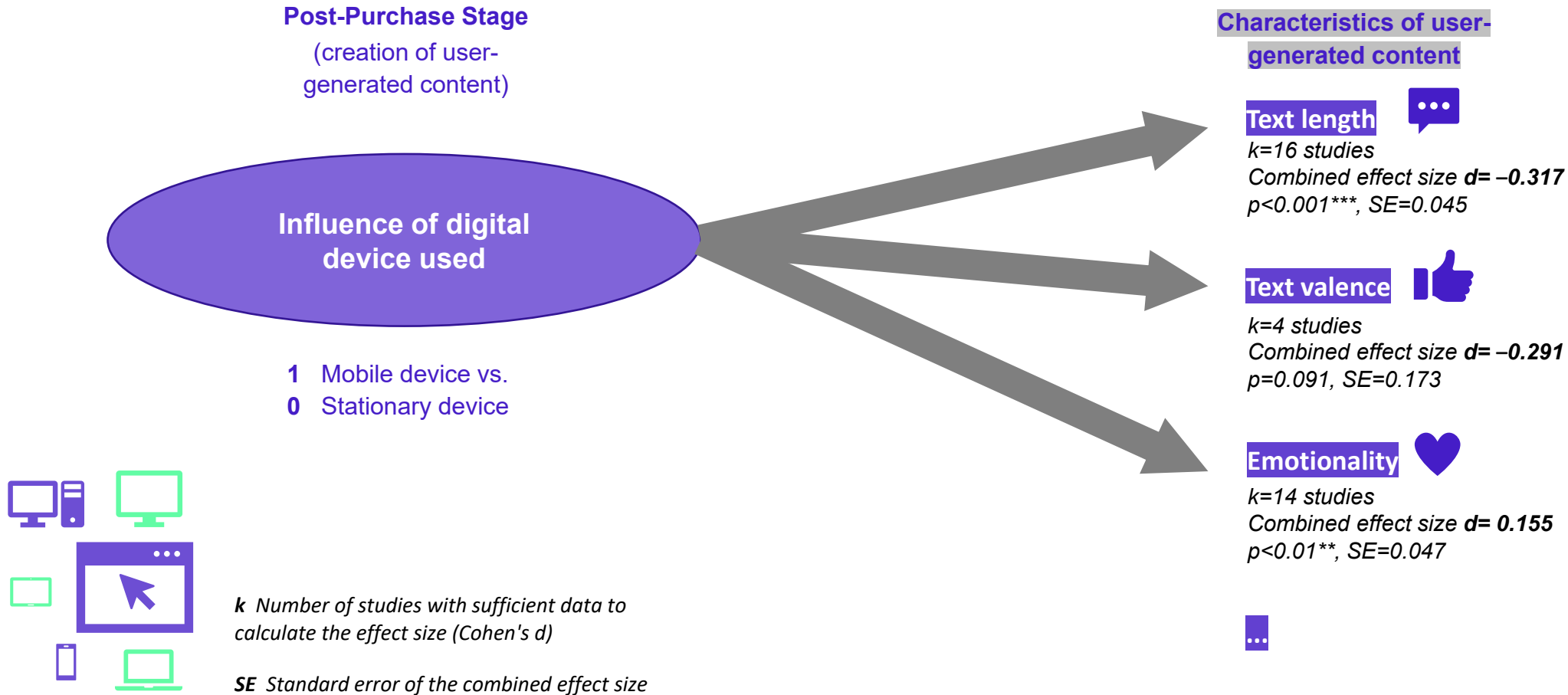*Systematic literature review and qualitative thematic analysis of 59 articles on device-mediated customer behavior*

The digital device used influences customer behaviors throughout the customer journey

Post-Purchase Stage
(creation of user-generated content)

Influence of digital device used

1 Mobile device vs.
0 Stationary device

n Number of studies analyzing the relationship

3   11   20

+ *Proportion of the statistical significant studies showing a positive influence of mobile devices*

0%   50%   100%

Characteristics of user-generated content

Text length
n=20 studies (Weight=0.95)
+ = 0.0% (0)
- = 95.0% (19)
n.s. = 5.0% (1)

Text valence
n=5 studies (Weight=1.00)
+ = 20.0% (1)
- = 80.0% (4)
n.s. = 0.0% (0)

Emotionality
n=18 studies (Weight=0.78)
+ = 77.8% (14)
- = 0.0% (0)
n.s. = 22.2% (4)

...

<u>Source:</u> Wolf & Madlberger (2024a);
Systematic literature review and meta-analysis of 25 articles (38 empirical studies) on device-mediated creation of user-generated content

The digital device used influences customer behaviors throughout the customer journey

Post-Purchase Stage

(creation of user-generated content)

Influence of digital device used

1 Mobile device vs.

0 Stationary device

k Number of studies with sufficient data to calculate the effect size (Cohen's d)

SE Standard error of the combined effect size

Characteristics of user-generated content

Text length
k=16 studies
Combined effect size $d= -0.317$
*$p<0.001$***, SE=0.045*

Text valence
k=4 studies
Combined effect size $d= -0.291$
$p=0.091$, SE=0.173

Emotionality
k=14 studies
Combined effect size $d= 0.155$
*$p<0.01$**, SE=0.047*

...

Source: Wolf & Madlberger (2024b);
Systematic literature review and meta-analysis of 25 articles (38 empirical studies) on device-mediated creation of user-generated content

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Research project #3

The digital device used influences customer behaviors throughout the customer journey

Post-Purchase Stage

(creation of customer referrals)

Characteristics of customer referrals

Text length

1. Online experiment (n_1=204)
M_{SP}=40.01, M_{PC}=48.99, p<0.05*
2. Lab experiment (n_2=140)
M_{SP}=54.03, M_{PC}=67.15, p<0.05*

Influence of digital device used

Text valence

1. Online experiment (n_1=204)
M_{SP}=84.57, M_{PC}=88.49, p=0.15 [n.s.]
2. Lab experiment (n_2=140)
M_{SP}=89.02, M_{PC}=94.34, p<0.05*

1 Mobile device vs.
0 Stationary device

Source: Wolf et al. (2024);
Multivariate analyses based on two online and two laboratory experiments

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Research project #3

The digital device used influences customer behaviors throughout the customer journey

Post-Purchase Stage
(creation of customer referrals)

Influence of digital device used
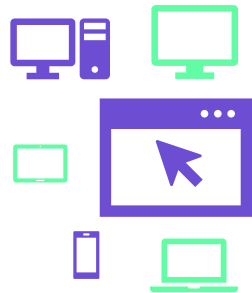
1 Mobile device vs.
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Characteristics of customer referrals

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1. *Online experiment (n_1=204)*
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Text valence
1. *Online experiment (n_1=204)*
M_{SP}=84.57, M_{PC}=88.49, p=0.15 n.s.
2. *Lab experiment (n_2=140)*
M_{SP}=89.02, M_{PC}=94.34, p<0.05*

Receiver responses

Purchase intention
3. *Online experiment (n_3=200)*
M_{Short}=3.79, $M_{Moderate}$=4.32, p<0.01**

Purchase intention
3. *Online experiment (n_3=200)*
$M_{Neutral}$=3.59, $M_{Positive}$=4.46, p<0.001***
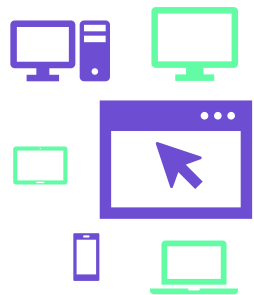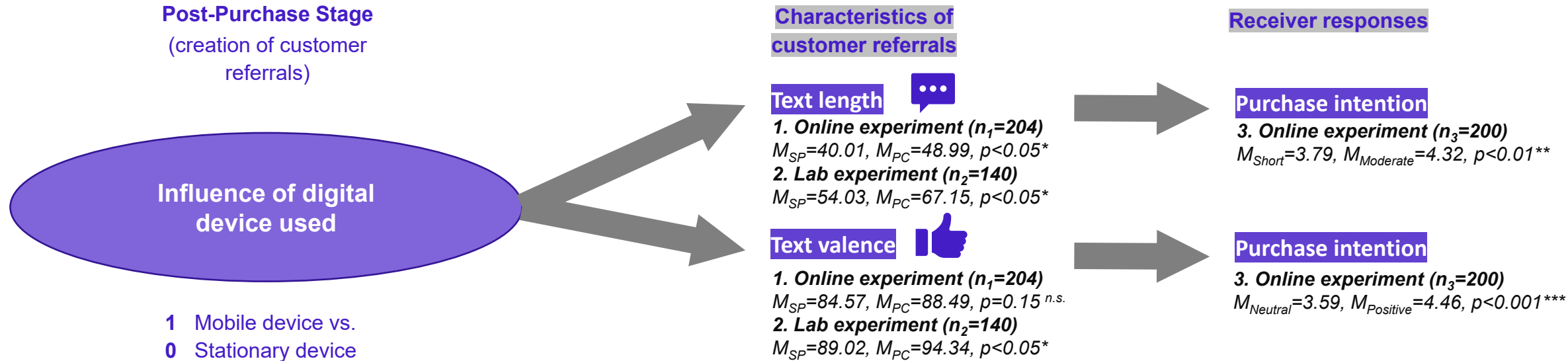
➢ Customer referrals written on smartphones are **shorter and less positive** than those written on laptops/PCs

➢ Shorter and more negative referrals lead to a **lower purchase intention** of the recipient

Source: Wolf et al. (2024);
Multivariate analyses based on two online and two laboratory experiments

The digital device used influences customer behaviors throughout the customer journey

➢ The Internet has evolved from a computer-mediated (Yadav & Pavlou, 2014) into a **device-mediated environment**

➢ **There is no such thing as 'the online consumer behavior'**

Delivering a **superior customer experience and effective omnichannel management** requires considering various digital devices

"consumer switching across channels and devices such as a desktop, laptop and mobile devices are all part of the shoppers' omni-channel experience and firms need to consider this to provide a seamless experience"

Source: Verhoef et al. (2015)

"just as online and offline channels have been differentiated, so the same should be done with digital devices"

Source: Rodríguez-Torrico et al. (2017)

"retailers should consider the relevant attributes and capabilities of [internet-enabled devices] to […] enhance consumers' online shopping experiences"

Source: Wagner et al. (2020)

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However,

Both research and practice often persist with a **traditional desktop-centric perspective**
and an **undifferentiated view of 'the online channel'**

The customer experience as well as economic returns suffer, when 'the online channel' is naively treated undifferentiated

- **Website Design**: Designing websites primarily for desktop users without optimizing for other devices
  - ⚠️ *large images, complex navigation, difficult checkout processes and features that don't work well on smaller screens; neglecting mobile-friendly options like in-app messaging or SMS support*

- **Marketing Campaigns**: Running the same campaign across all devices without tailoring the message or format to suit the unique characteristics and consumer behaviors
  - ⚠️ *ignoring differences in product preferences and price sensitivity across devices*

- **Analytics and Insights**: Analyzing user data from 'the online consumer' without differentiating the unique consumer behaviors associated with each device
  - ⚠️ *skewed understanding of consumer behavior (e.g., wrong KPIs and undifferentiated outcome variables)*

- **Device Choice**: Providing a one-size-fits-all approach that doesn't account for different user preferences or the specific capabilities of various devices
  - ⚠️ *failing to exploit differences in consumer behavior across devices by influencing the choice of digital devices*

The customer experience as well as economic returns suffer, when 'the online channel' is naively treated undifferentiated

A **superior omnichannel strategy** goes beyond one-size-fits-all channel management and the traditional and still predominant consideration of only one online channel

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