FROM MAAS TO SUPER APPS: IMPLICATIONS FOR URBAN AND TRANSPORT PLANNING

Dr. Marc Hasselwander, DLR-Institute of Transport Research

Introduction

- Researcher at the DLR-Institute of Transport Research since 2021
- PhD at the University of Coimbra (2017-2023), MIT Portugal
- Research focus on consumer and mobility behavior, technology adoption, and platform economy
- Case studies in the global South: Cochabamba, Kigali, Dar es Salaam, Manila
- Topics: Mobility as a Service (MaaS), mobility platforms, (transport) super apps

Source: Marc Hasselwander

Source: Trufi Association

Agenda

- Study 1: Acceptance of MaaS in Metro Manila
- Study 2: Acceptance of Super-Apps
- Study 3: Preferences for Super-App Services
- Study 4: Local Super Apps
- Discussion

STUDY 1: ACCEPTANCE OF MAAS IN METRO MANILA

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Background

MOBILITY-AS-A-SERVICE

- Consolidation of **different** transport **modes** and **services**
- Accessible through a **mobile app**: plan, book, and pay
- “**Pay-as-you-go**” or **mobility packages**
- e.g., **Whim, Jelbi,** etc.

Source: Raymark Lapitan Sebastian

Case study: Metro Manila

METRO MANILA

- Capital: center of culture, economy, …
- 17 cities/municipalities; 620 km²
- Population: 13 million + 2 million commuters
- One of the **most crowded** and **dense** urban areas in the world

Source: Marc Hasselwander

Case study: Metro Manila (cont‘d)

METRO MANILA - transportation

- 90% of households do **not own a car**
- Rapid pace of **motorization**
- Fragmented rail network, subway to be opened in 2029(?)
- Some pop-up bike lanes and BRT corridor after COVID-19

Source: Jack Schmidt

Source: Hans Cecilio Bosshard

Research questions

- RQ1. How strong is the **willingness to use MaaS**? Who are the **potential adopters** and what are their **motives** to use MaaS?
- RQ2. Does MaaS have the potential to **promote a shift** towards public transport and sustainable mobility?

Methods and Data

- Online survey (N=238)
  - **Transport & Mobility**: nr. cars/motorcycles, modal choice factors; previous day travel, …
  - **Socio-demographic**: age, education, household size, …
- Econometric models (utility theory, discrete choice)
  1. **Willingness** to use **MaaS** (whole sample)
  2. **Likelihood** of increasing the use of **public transport** (among MaaS adopters)

Results and discussion

Model 1: Willingness to use MaaS (whole sample)

- “I would probably use MaaS” = **84%**
- Potential adopters:

price-sensitive (compare and choose best option), **females**, **ride-hailing** users (short, social, and leisure trips), Metro Manila residents, **multimodal travel behavior**.

Results and discussion (cont‘d)

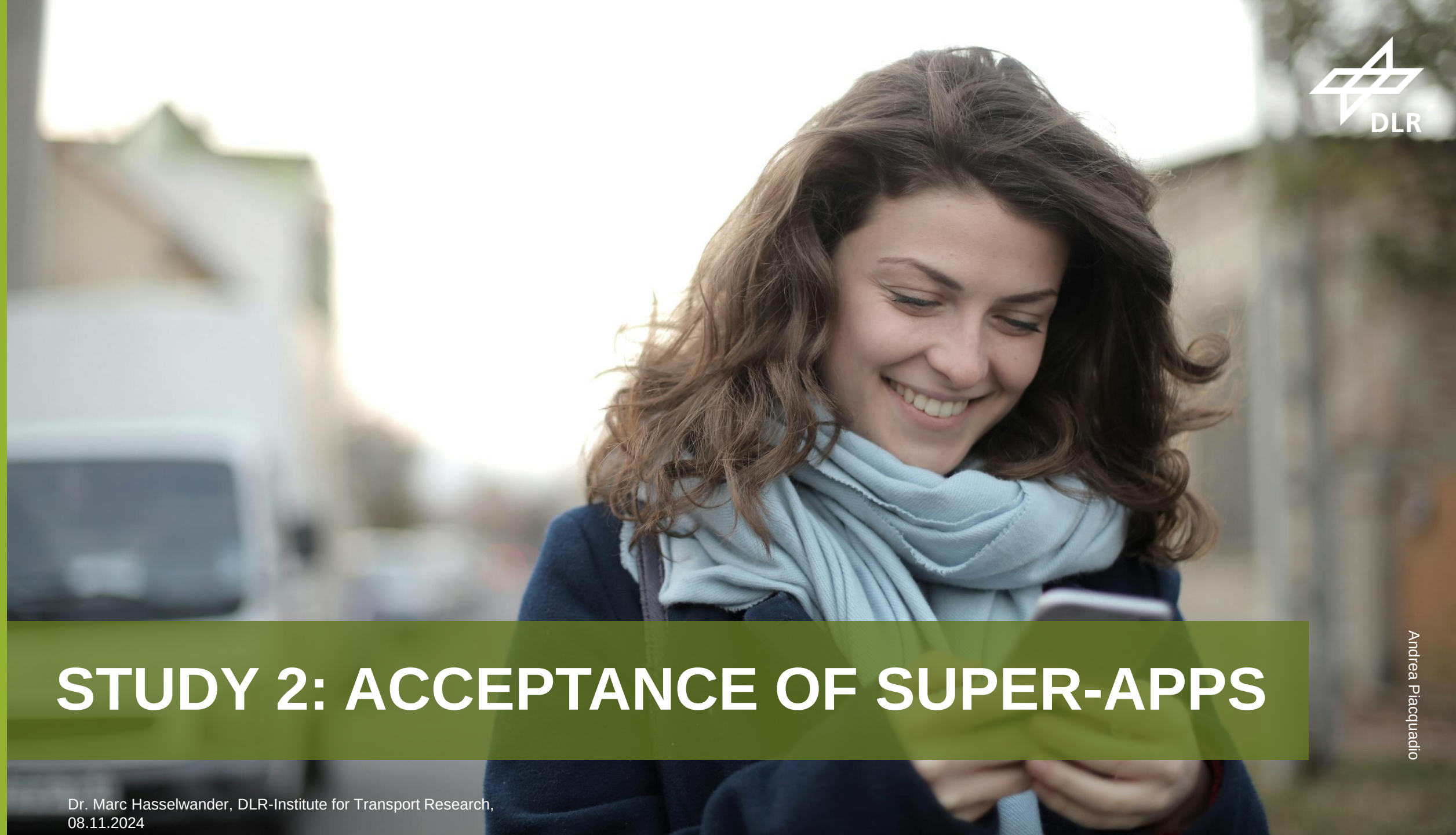
Model 2: Likelihood of increasing use of PT (among MaaS adopters)

- “I would probably use MaaS and use PT more often” = **73%** (of adopters)
- Potential adopters:

living in **adjoining provinces, price-sensitive, females**, already using **transport apps**.

Main (new) findings

- **Consolidation** of different services (aka transport integration)
- Users expect **cost-savings**
- Users expect **more reliable services** (integration of services and travel info*, comparison of different travel alternatives)



STUDY 2: ACCEPTANCE OF SUPER-APPS

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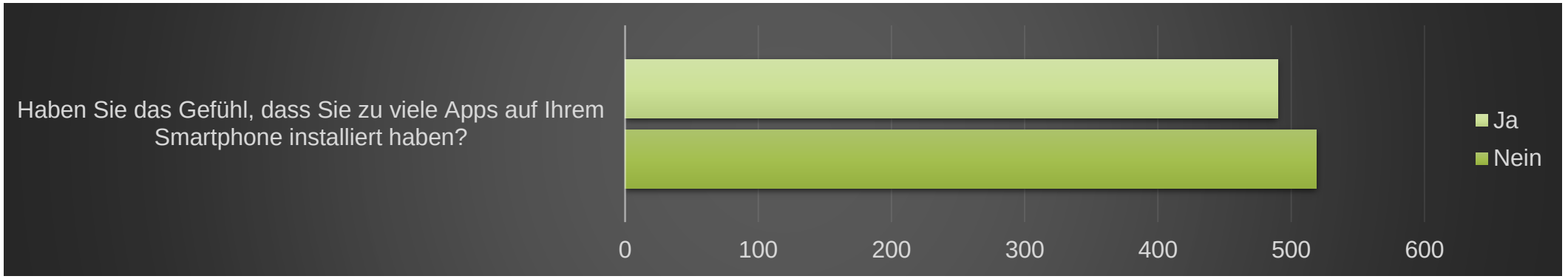
Background: Super apps

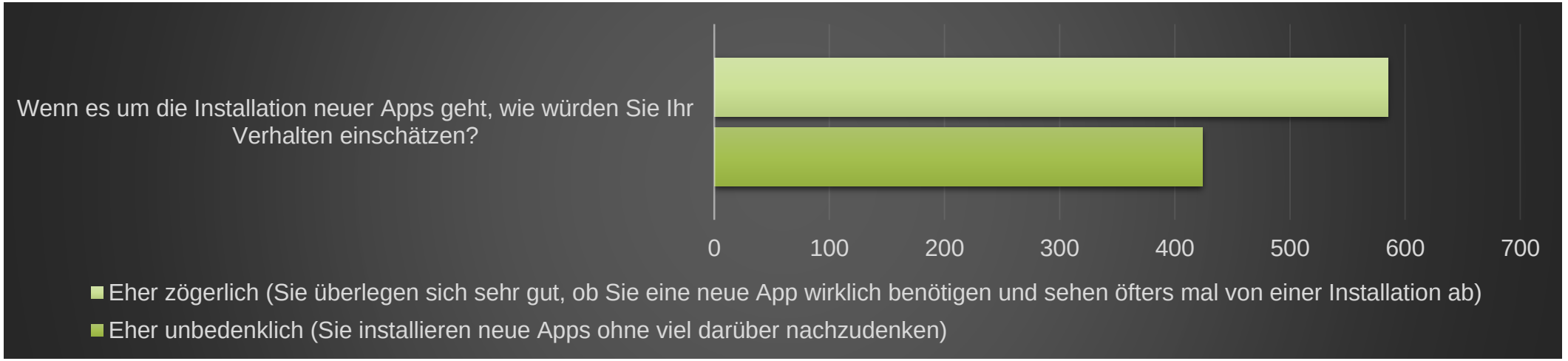
- A single app for **all daily needs**
- Social media, banking, shopping, mobility, deliveries, etc.
- Ubiquitous in **Asia**: WeChat, LINE, KakaoTalk etc. (note: previous chat apps)
- In Europe: Uber, Bolt are developing into super apps (note: mobility apps)

Source: Andrea Piacquadio

Background: Smartphone and app usage

- Smartphone users: on average, 49 apps installed, but only using 13





Research questions

- RQ1. Are smartphone users in Germany willing to **adopt super apps**?
- RQ2. Which **factors explain interest** in super apps among smartphone users in Germany?

Methods and Data

- Online survey (N=1,019)
  - **Representative sample** (gender, age, household net income)
  - socio-economic characteristics, smartphone and app usage patterns and attitudes, measurement items, super app preferences)
- Theoretical background
  - Unified Theory of Acceptance and Use of Technology **(UTAUT2)**
- Data analysis
  - Confirmatory factor analysis **(CFA)** and structural equation modeling **(SEM)**

Results and discussion

- **Males** are more likely to adopt super apps
- **Performance expectancy** and **price value** are the most influential predictors to explain adoption intentions
- **Perceived risk** (data privacy!) has a significant negative impact

→ super app providers should prioritize features that deliver both **utility** and **economic value** to consumers

→ building **trust** through transparency and collaborating with **local businesses** are crucial success factors

STUDY 3: PREFERENCES FOR SUPER-APP SERVICES

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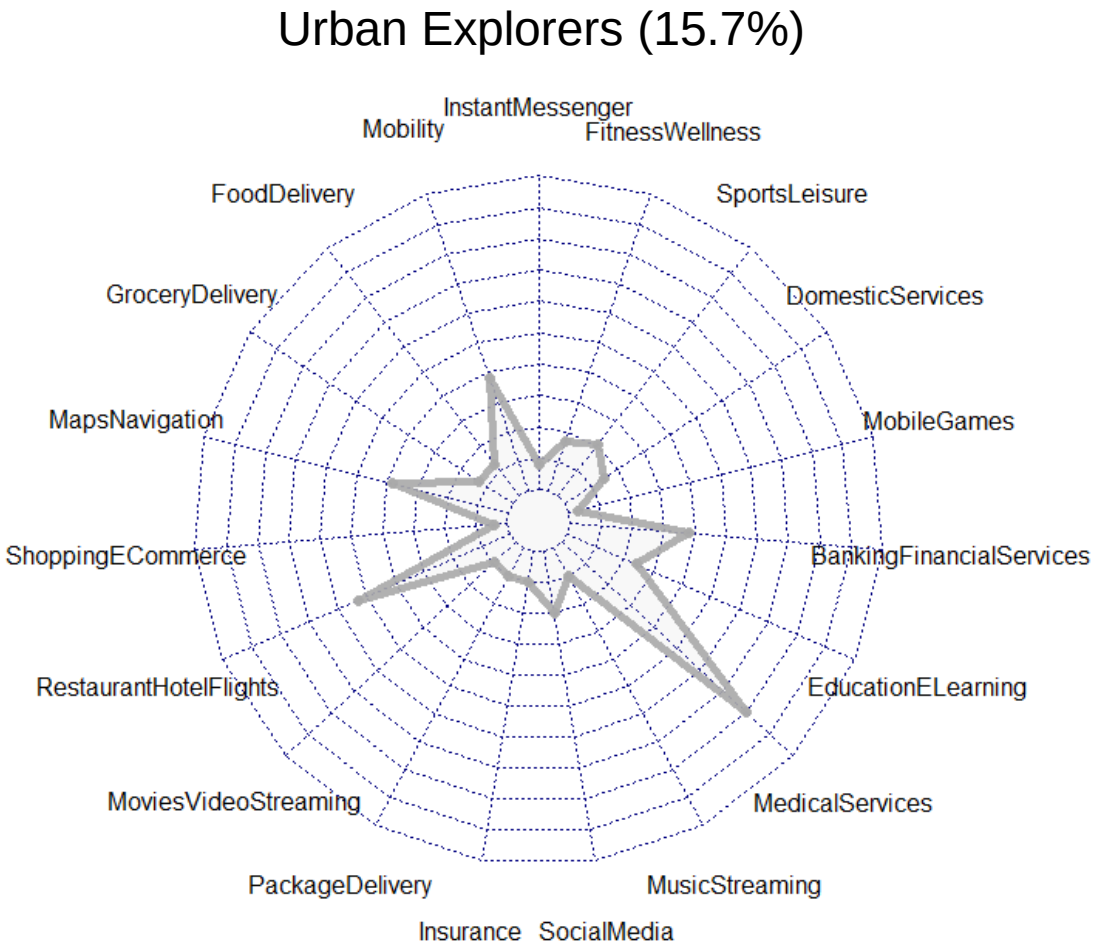
Research questions

- RQ1. Which groups of consumers share similar preferences for super app services, and which factors contribute to the formation of distinct market segments?
- RQ2. Which super app services should digital platforms integrate to efficiently address consumer preferences?

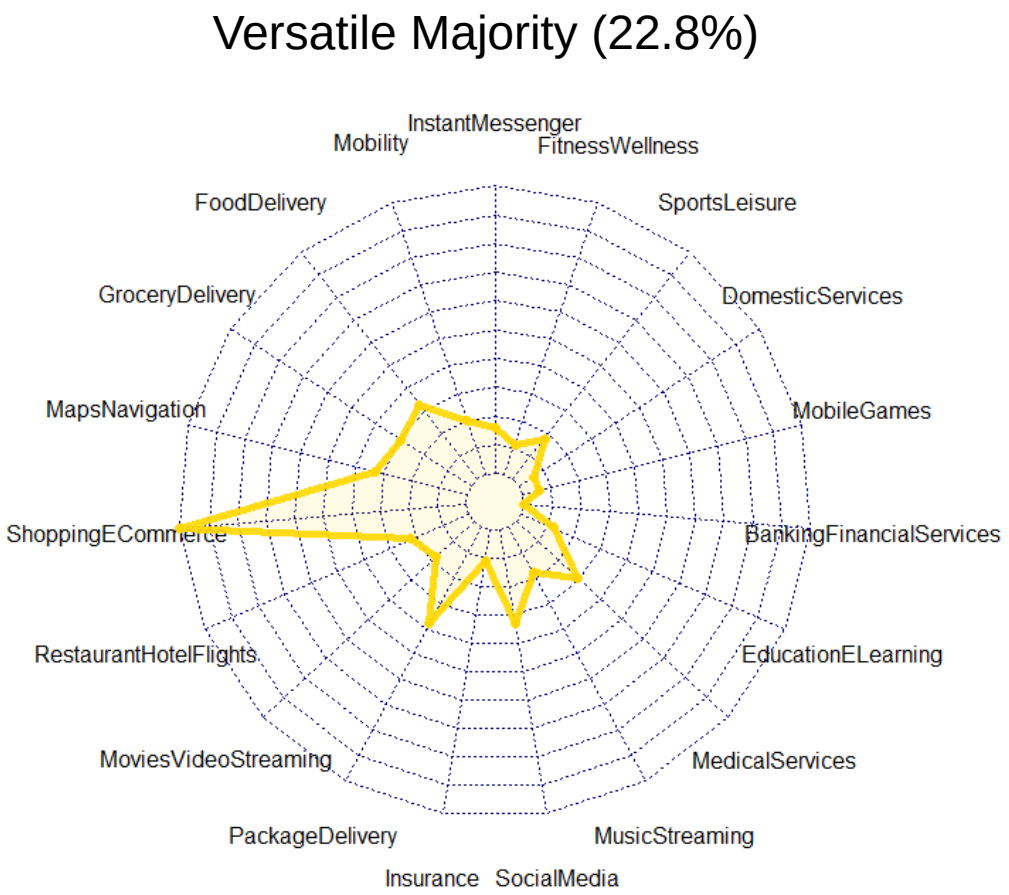
Methods and Data

- Online survey (N=1,019)
  - **Representative sample** (gender, age, household net income)
  - Sub-sample of potential super app adopters (n=764)
  - Super app preferences)
- Theoretical background
  - Unified Theory of Acceptance and Use of Technology **(UTAUT2)**
- Data analysis
  - **Cluster analysis** and multinomial logistic (**MNL**) regression

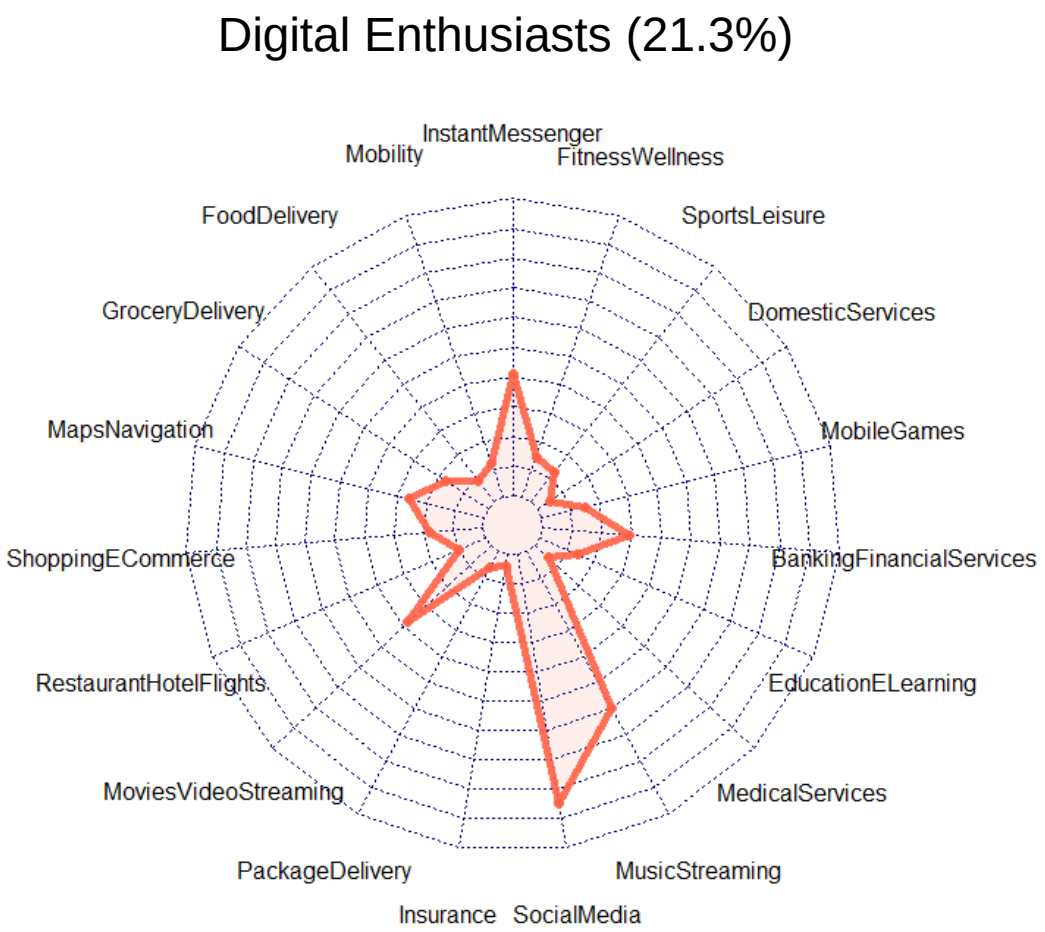
Results: five identified clusters (1)



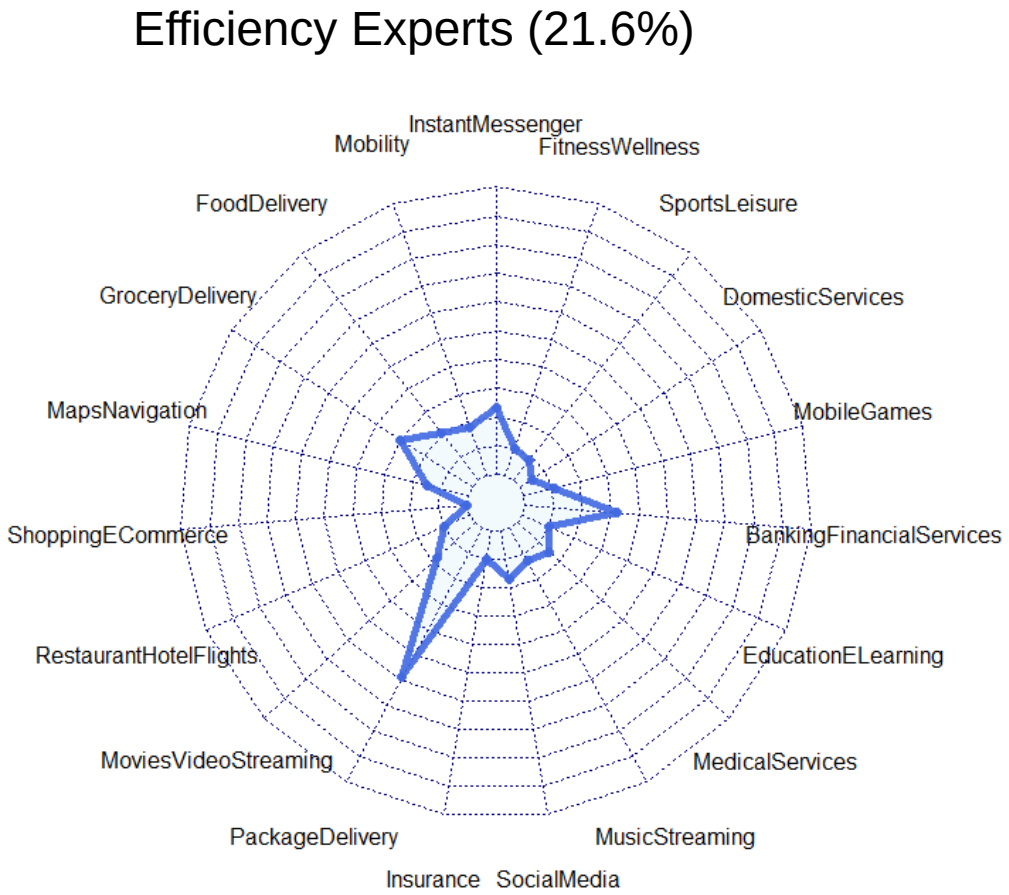
Results: five identified clusters (2)



Results: five identified clusters (3)

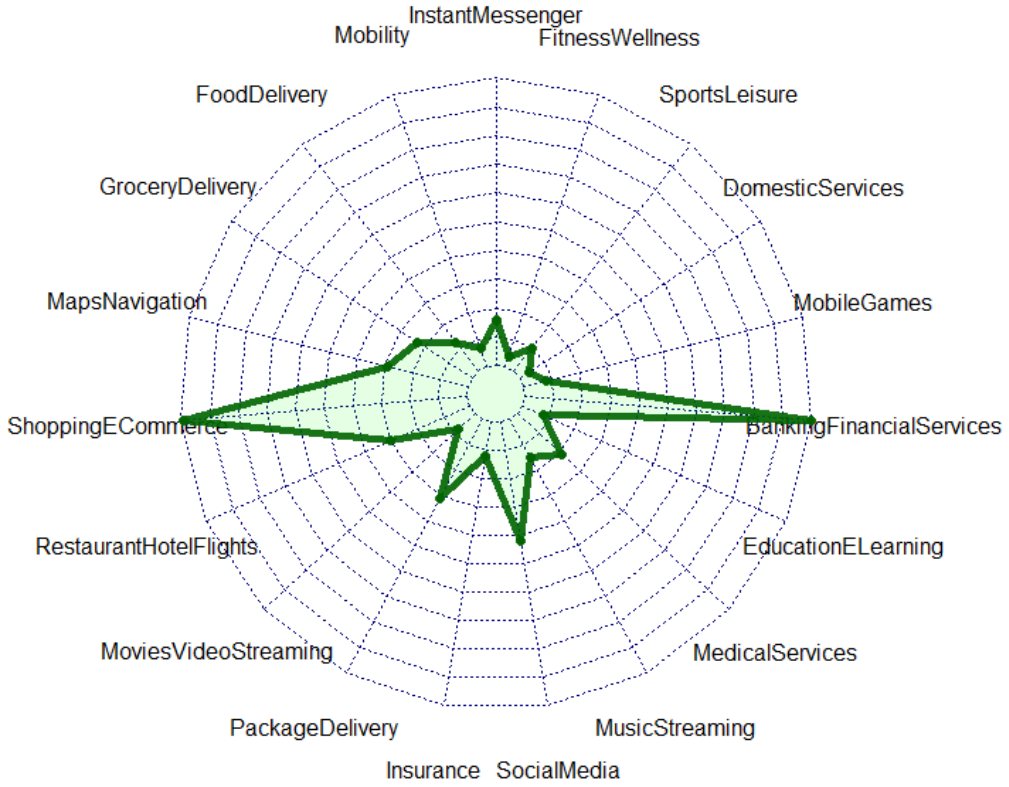


Results: five identified clusters (4)



Results: five identified clusters (5)

Golden Triangle (18.6%)



STUDY 4: LOCAL SUPER APPS

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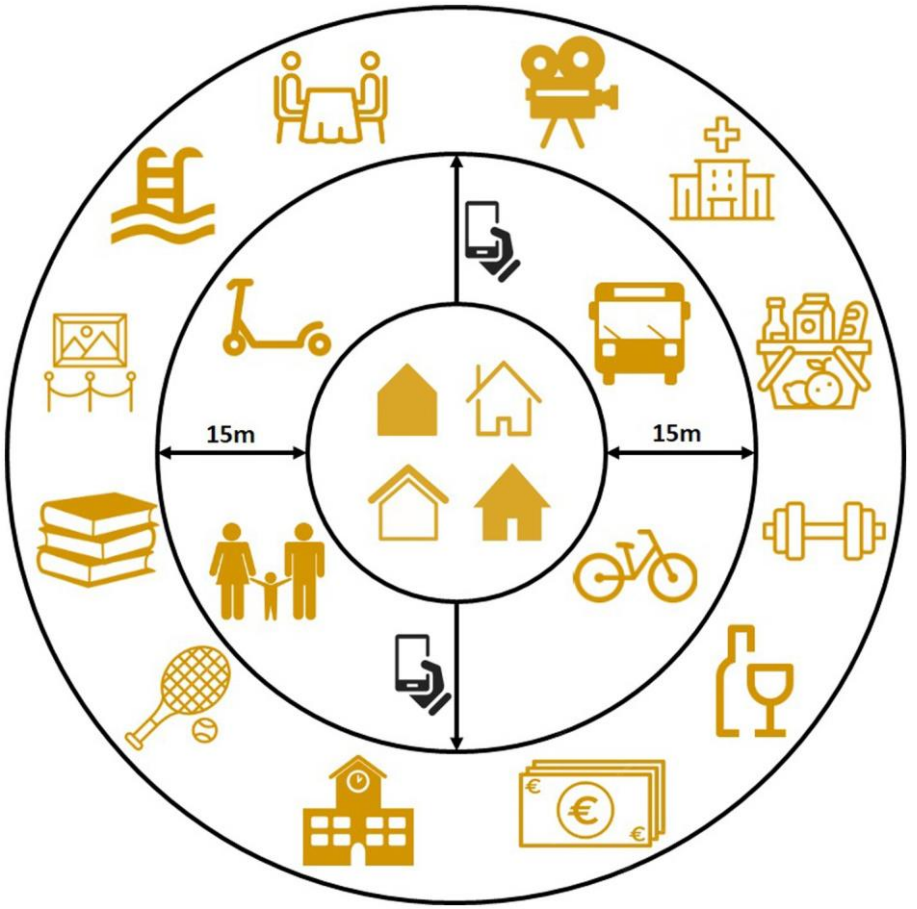
A think piece

LOCAL SUPER APP

- driven by **public** authorities, tailored to **local needs**
- integrating the concepts of the **15mC** and **MaaF**
- essential daily necessities and services accessible within a **15-minute** radius
- seamlessly order, book, and pay for daily necessities, services, and leisure, all seamlessly integrated within a **single app**



Source: Marc Hasselwander, Daniel Weiss, Stefan Werland

DISCUSSION

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Food for thought

- Do we need to consider mobile apps in urban and transport planning?
- What are the opportunities and risks?
- Do you know any other use cases?

FURTHER READING & CONTACT

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