Walking in Mobility as a Service (MaaS): Exploring the Appraisal of Walking in MaaS in the Paris Region

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A. INTRODUCTION

What is Mobility as a Service (MaaS)?

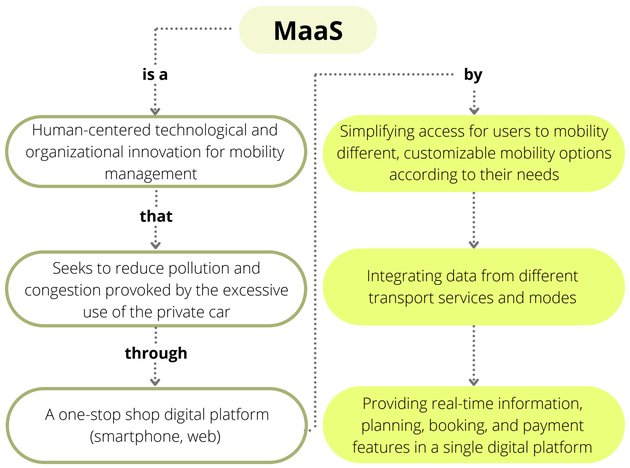

Figure 1. Our definition of MaaS based on our literature review.

The Role of Active Modes in Sustainable Mobility Transitions

- **Active modes require human energy** like "walking, cycling, skating, skiing, and manual wheelchairs" (Litman, 2003).
- Potential to **connect the last mile of journeys** and help reach **public health and environmental goals** (Markvica et al., 2020).
- Potential of bringing **economic, environmental, and health benefits** to the mobility ecosystem by **enabling access** to more city features and services (Fig.2).
- Active modes are **affordable mobility options** (Deguitre and Courel, 2020).

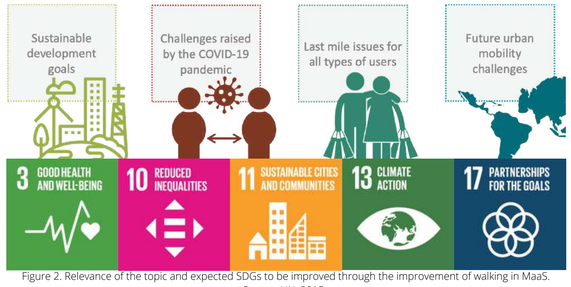

Figure 2. Relevance of the topic and expected SDGs to be improved through the improvement of walking in MaaS. Source: UN, 2015.

B. RESEARCH BACKGROUND

Motivation

- In a context of climate, food, and health crises, a **shift towards more sustainable mobility practices** and sustainable business models are required (Fig.3).
- **Walking is not a transport service like others** and it tends to be overlooked by MaaS operators on the road for innovation.
- Around **40% of trips** made by people living in the Île de France region done by foot.

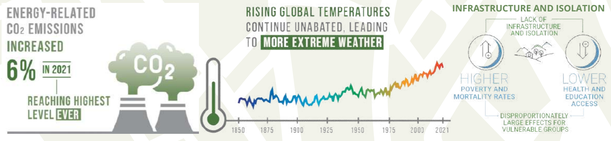

Figure 3. Worldwide context of sustainability challenges. Source: UN, 2021, p.17.

Research Problem

The integration and innovation around pedestrian mobility in MaaS solutions remain underdeveloped and undervalued by the ecosystem of MaaS actors and influenced by the different governance configurations in the ecosystem.

Research Questions

- How is walking currently integrated into MaaS solutions in the Paris capital region?
- What are the factors influencing the current level of integration?
- What strategies could be implemented for the appraisal of walking in MaaS?

Hypotheses

- Improved integration of walking in MaaS can act as an inclusion tool to give individuals equitable access to opportunities in urban, peri-urban, and rural areas.
- Active modes have the potential to induce modal shift to reduce short and medium-length trips made in polluting and bulky individual vehicles.
- Encouraging walking would have positive impacts on health and the environment.

Objectives

- Give **more visibility** to walking through MaaS UIs and promote the development of **enhanced tools** for walking trips and walking connections in intermodal trips.
- Implement **sustainable mobility policy objectives.**

Mobility Context of the Paris Capital Region

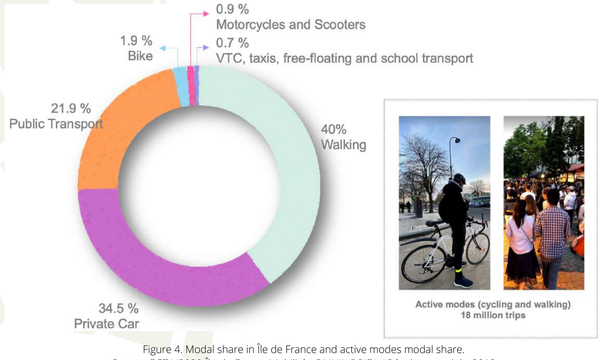

Figure 4. Modal share in Île de France and active modes modal share. Source: EGT H2020-Île-de-France Mobilités-OMNIL-DRIEA / Résultats partiels, 2018

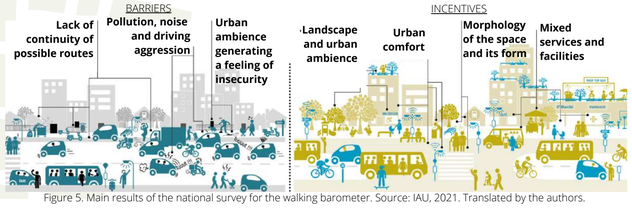

Figure 5. Main results of the national survey for the walking barometer. Source: IAU, 2021. Translated by the authors.

C. RESEARCH METHODOLOGY

Case Study-based Empirical-Inductive Qualitative Research

Comparative Case study
Comparative of the integration status of walking into MaaS available in Île de France.

Objective:
1) Identify the current situation regarding the integration of walking in the MaaS solutions analyzed and the actors' perspectives concerning this integration.

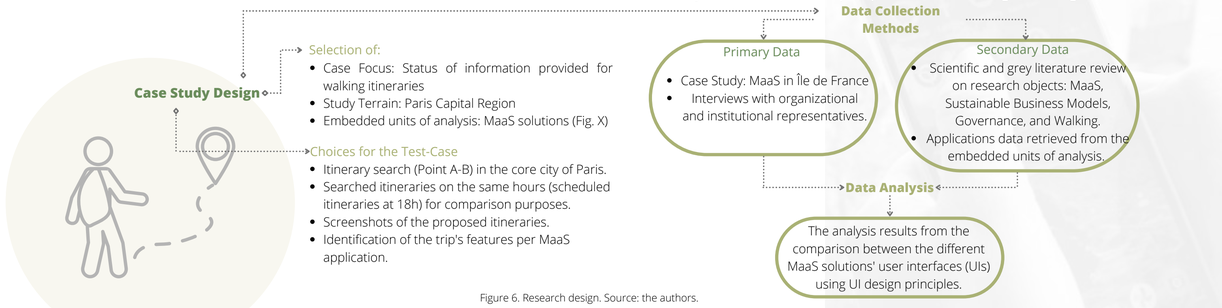

Figure 6. Research design. Source: the authors.

D. CASE STUDY

General functionalities

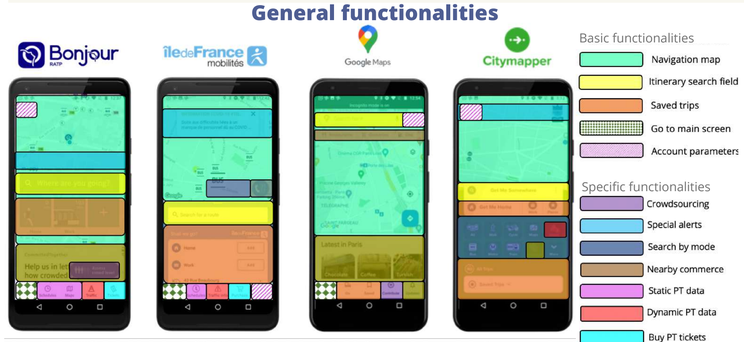

Figure 7. Main features across the UI of MaaS solutions analyzed. Source: Screenshots from the app by the authors, 2022

Walking itinerary requests

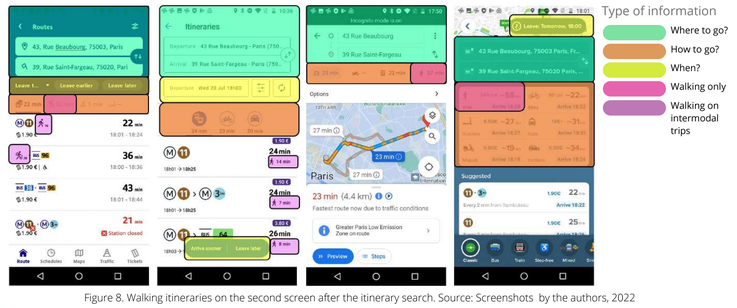

Figure 8. Walking itineraries on the second screen after the itinerary search. Source: Screenshots by the authors, 2022

Walking itinerary features by app

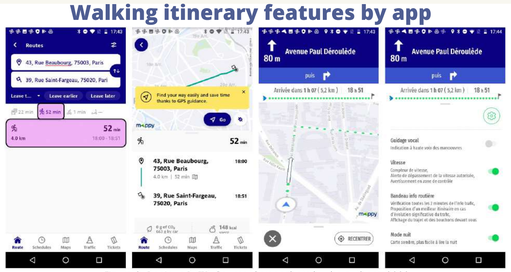

Figure 9. Bonjour RATP. Source: Screenshots by the authors, 2022

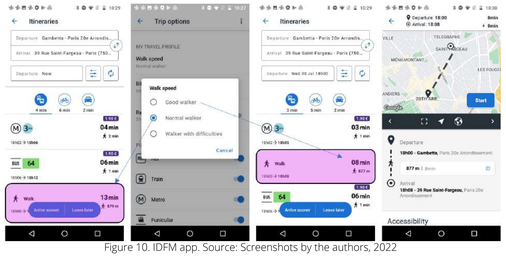

Figure 10. IDFM app. Source: Screenshots by the authors, 2022

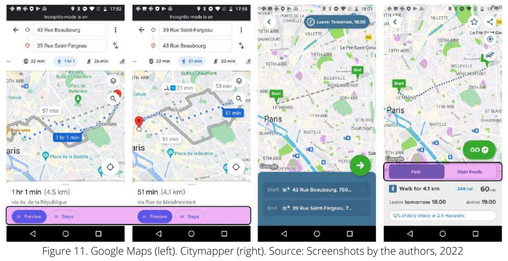

Figure 11. Google Maps (left). Citymapper (right). Source: Screenshots by the authors, 2022

E. CONCLUSION AND RESEARCH PERSPECTIVES

- Walking is integrated at a basic level in studied MaaS solutions in the French capital region, and there is a gap when considering different types of users and travel reasons.
- Room for improving user experience (UX) quality by providing users with more and better (higher level of customization) information on the type and quality of their journeys and the infrastructure (higher level of detail) in publicly led MaaS.
- Crowdsourcing tools could help to collect and co-construct a more detailed database of the characteristics of chosen itineraries.

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