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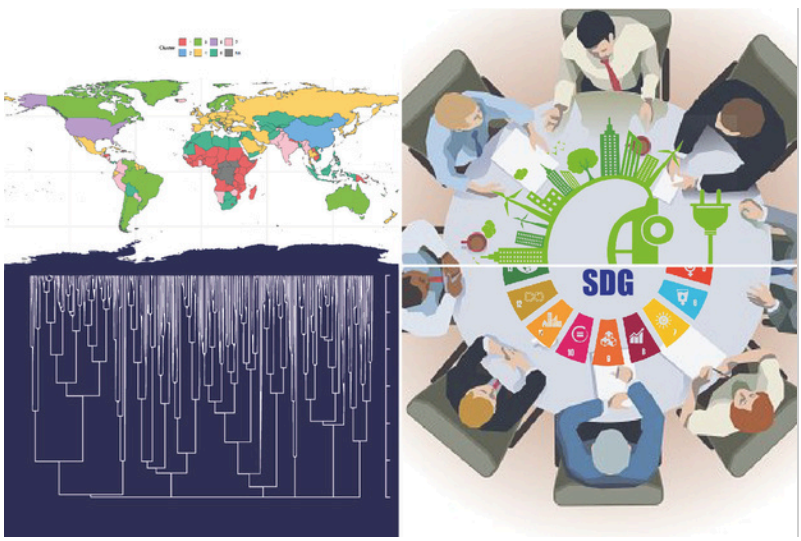
MOSE2030

Executive summary

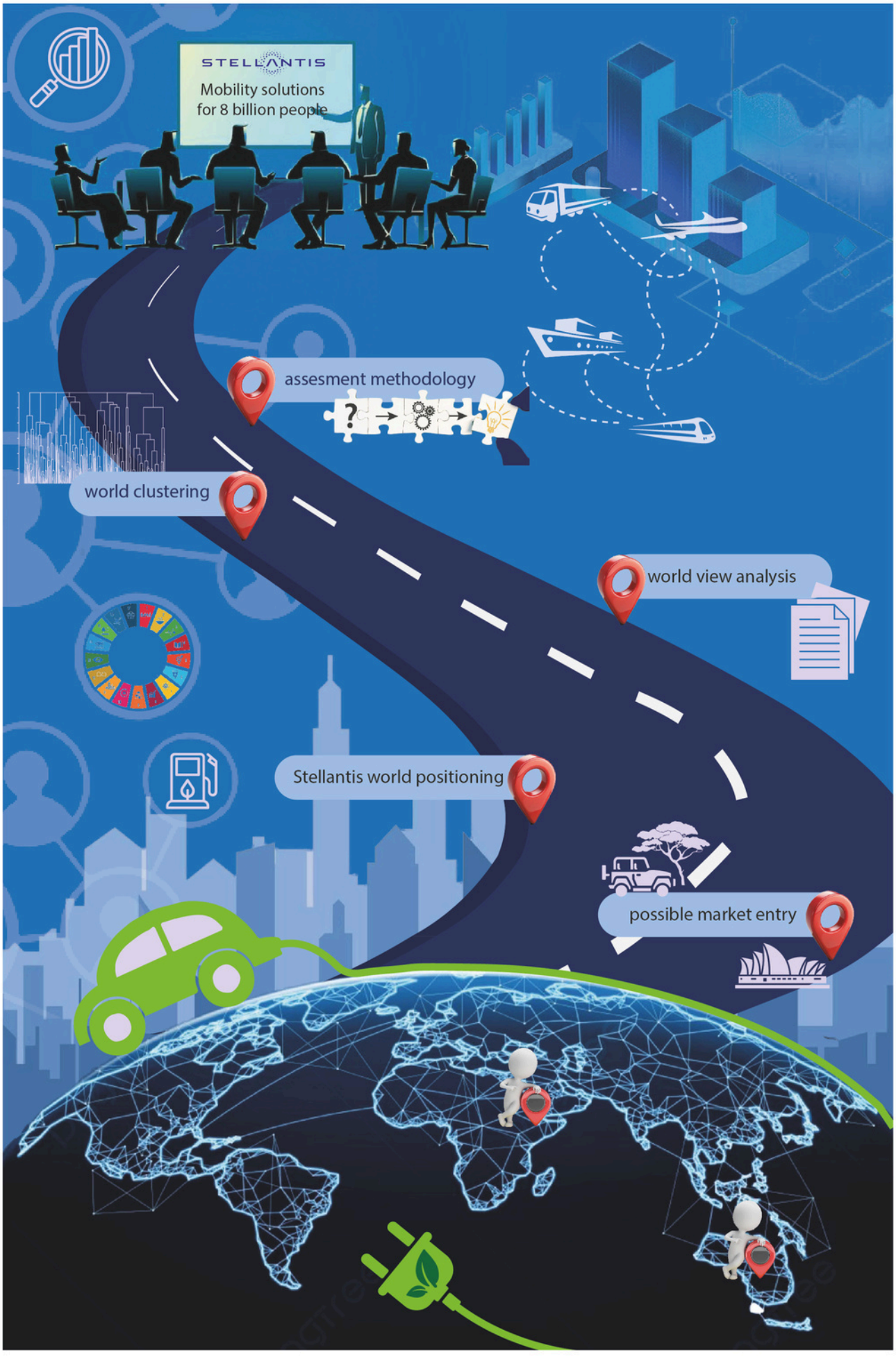
The MOSE2030 project, developed with Stellantis, delivers a data-driven and adaptable methodology to guide mobility strategies across global markets. Its core aim is to help Stellantis identify the most viable countries for entry by aligning infrastructure, environment, culture, and technology with business goals. The urgency is clear: by 2030, more than 8.5 billion people will live on the planet, with rapid urbanization straining transport systems, driving emissions, and intensifying inequality. For automotive leaders, success depends on acting quickly with strategies tailored to local realities.
MOSE2030's framework combines global clustering of countries, using World Bank and related datasets, with the LETO model (Legal, Environmental and Social, Technological, Operational) to balance large-scale patterns with context-specific insights. This approach produces scalable yet locally grounded recommendations. Two case studies highlight how the framework works in practice. Australia emerges as a mature, regulation-driven market with advanced infrastructure and consumer appetite for electric SUVs and connected mobility, making it well-suited for electrification and digital-first services. Tanzania, while less developed, shows potential through rapid urbanization, mobile adoption, and demand for durable, affordable vehicles. Here, Stellantis should prioritize partnerships, light commercial offerings, and gradual market development over immediate large-scale entry.
From this work, three conclusions stand out. Market selection requires both global scale and local depth. Stellantis should adopt a two-layer approach, statistical evaluation of the markets and study of feasibility, risks and alignment with its sustainable goals. Most importantly, the project delivers a reusable decision-support capability that links clustering with LETO, enabling agile and updatable country rankings. Looking ahead, Stellantis can build on these insights by piloting targeted projects in chosen markets, refining data with subnational indicators, and collaborating with local stakeholders to bridge gaps in infrastructure, skills, and regulation. MOSE2030 ultimately equips Stellantis with a repeatable, flexible tool to accelerate time-to-market, reduce risks, and increase commercial success worldwide.

Key Words

Mobility | Data-driven methodology | Market-entry strategy |



Clustering and LETO framework: a combined approach decision-making at Stellantis


STELLANTIS
Mobility solutions
for 8 billion people
assesment methodology
world clustering
world view analysis
Stellantis world positioning
possible market entry

Goal

The MOSE2030 project seeks to support Stellantis in shaping its global mobility strategy by identifying high-potential geographic areas for future investments. The central goal is to create a methodology that enables Stellantis to evaluate countries and regions according to their mobility potential and to guide the formulation of tailored entry strategies. These strategies are intended to address specific regional needs and stakeholder dynamics, while remaining aligned with the company's long-term innovation objectives.

To achieve this, the project aims to design a flexible yet consistent framework that can be applied across diverse socio-economic contexts. This framework will integrate a wide range of interdependent factors, including economic, infrastructural, environmental, social, and legal dimensions, so that mobility opportunities can be assessed holistically. By detecting global and regional patterns, the project will also perform the clustering of countries with similar mobility characteristics.

Ultimately, the project's goal is to deliver a transparent, data-driven, and reusable methodology that strengthens Stellantis' capacity for evidence-based decision-making. In doing so, MOSE2030 will enable the company to allocate resources more effectively and anticipate future mobility challenges at a global scale.

Understanding the problem

The MOSE2030 project addresses the challenge of identifying high-potential geographic areas for future mobility investments. Its goal is not to develop a technological solution, but to design a decision-support methodology that guides Stellantis in selecting promising regions and formulating context-specific market entry strategies. This requires a systematic and replicable framework that integrates economic, environmental, social, legal, and infrastructural factors to support strategic decision-making at a global scale.

Existing approaches to this problem typically fall into two categories: mobility readiness indices and clustering-based methods. Indices such as the Urban Mobility Readiness Index or KPMG's Global Mobility Readiness Index provide useful benchmarks but are often too generic and lack the stakeholder orientation needed for company-specific strategies. Clustering techniques, on the other hand, group countries or regions with similar mobility characteristics and have been applied in areas such as demand prediction, accessibility analysis, and transport development prioritization. Some studies have combined clustering with multi-criteria decision-making frameworks, yet these remain context-specific and limited in scalability.

Recent research emphasizes the need for methodologies that go beyond benchmarking or classification, considering also organizational goals, long-term vision, and adaptability to future uncertainties. MOSE2030 addresses this by combining a data-driven analysis with a qualitative assessment and decision-making framework. The project demonstrates this through the identification of two contrasting case countries, each accompanied by a tailored market entry strategy aligned with Stellantis' innovation and sustainability goals. These results highlight the practical relevance and flexibility of the proposed approach in guiding mobility investments.

Project description written by the Principal Academic tutor

The MOSE2030 project focuses on the mobility challenges from 2030 and beyond and on viable solutions that should be implemented to satisfy the mobility needs in different parts of the world, distinguishing between developing and developed countries integrating cutting-edge technologies, novel transportation systems, and optimization methods.

To achieve the objective of addressing the main research question, no specific technology, nor a service (e.g., Mobility as a Service (MaaS)) solution will be developed. Instead, a new assessment methodology will be developed, primarily based on:

- Gaining a comprehensive understanding of diverse market mobility needs and opportunities.
- Optimizing, comparing, and evaluating different strategies, considering specific mobility needs, environmental impact, economic sustainability, technical feasibility, and public acceptance

Team description by skill

The project was developed by an interdisciplinary team of six Master's students from Politecnico di Milano and Politecnico di Torino, who worked closely together across all stages of the work. While each member contributed to multiple aspects, certain areas particularly benefited from specific expertise.

- **Margherita Bencini** and **Alice Flamigni**, both mathematical engineers, applied their data analysis knowledge and quantitative background to the identification of indicators, the hierarchical clustering, and the analysis of mobility trends in selected countries.
- **Edoardo Ferrucci**, a management engineer, held the role of Team Controller, bringing an innovative mindset and a market-oriented perspective that guided the methodology and solution selection.
- **Chiara Memmo**, an environmental engineer, ensured that the proposed solutions were consistent with climate and sustainability goals and deepened the environmental aspects of the LETO analysis.
- **Flavia Bazhella**, an architect specialized in sustainability, contributed her understanding of urban systems in the LETO analysis and case studies, as well as supporting the graphical communication of the project.
- **Michele Clerici**, an aerospace engineer, was in charge of defining the LETO analysis for each cluster and strengthened the definition of the proposed solutions with his technical expertise.

Exploring the opportunities

Having established the challenge of identifying promising geographic areas for future mobility investments, the next step in MOSE2030 was to explore the global landscape of opportunities. Instead of targeting specific countries from the outset, the project applied the multi-criteria framework across a wide set of indicators to capture the diversity of mobility contexts worldwide. This led to the identification of several clusters of countries with shared structural characteristics, making it possible to move from a fragmented picture of individual markets to broader categories of opportunity.

The analysis showed that mobility contexts differ not only in terms of economic development but also in their energy sources, infrastructure maturity, and technological adoption. Some clusters pointed to advanced economies with strong institutions and infrastructure, offering a stable ground for electrification and smart mobility solutions. Others reflected fast-growing but less mature environments where affordability, limited infrastructure, and informal systems still shape demand, yet where increasing digital adoption and urbanization create space for new business models.

To translate these broad patterns into actionable strategies, the project employed the LETO framework, which added a qualitative assessment of legal, environmental, technological, and operational conditions. This step made it possible to prioritize countries within each cluster and assess their actual feasibility for Stellantis.

Generating solutions

The process of generating solutions within MOSE2030 began with the development of a structured, multi-criteria framework for evaluating global mobility opportunities. Rather than pre-selecting target markets, the project applied a combination of quantitative indicators and qualitative insights to assess countries against economic, infrastructural, environmental, social, and regulatory dimensions. This iterative approach allowed not only for benchmarking but also for detecting clusters of countries with comparable mobility profiles. By combining these clusters with Stellantis' innovation and sustainability priorities, the analysis highlighted a set of potential candidate markets.

From this pool, Australia and Tanzania emerged as particularly relevant case studies—not because they are directly comparable, but precisely because they illustrate contrasting mobility contexts. Australia represents a mature, high-income market undergoing a rapid transition toward electrification, shaped by strong regulatory frameworks and consumer preferences for larger vehicles. Tanzania, on the other hand, embodies the dynamics of a fast-growing, low-income market where affordability, infrastructure constraints, and alternative fuels dominate the mobility agenda. By examining these extremes, the project could stress-test the robustness and adaptability of the proposed methodology.

For each country, tailored solutions were then generated. In Australia, solutions focused on aligning Stellantis' offerings with the acceleration of electrification, regulatory compliance, and consumer expectations around connected vehicles. In Tanzania, the emphasis shifted to affordability, financing mechanisms, durable vehicle types, and early positioning in alternative fuels such as bioethanol and CNG. These solutions were not designed in isolation but derived directly from the systematic analysis of each market's structural drivers, barriers, and opportunities.
The implications of this process extend beyond the two case studies. First, the framework proved capable of guiding decision-making across highly diverse contexts, confirming its flexibility and scalability. Second, the comparison demonstrated that a one-size-fits-all strategy is inadequate: Stellantis must adopt differentiated pathways, ranging from technology-driven innovation in advanced economies to accessibility- and affordability-focused approaches in emerging markets. Finally, the exercise revealed the value of integrating foresight and stakeholder-oriented design into mobility planning, ensuring that proposed solutions are not only viable today but also resilient to future uncertainties.
In this sense, MOSE2030 does more than identify attractive markets; it provides Stellantis with a replicable methodology to generate solutions that are evidence-based, context-sensitive, and strategically aligned across the full spectrum of global mobility scenarios.

Main bibliographic references

Australian Government. National Transport Commission (NTC). https://www.ntc.gov.au/.

Dare Forward 2030- Stellantis https://www.stellantis.com/it/il-gruppo/dare-forward-2030

Department of Infrastructure, Transport, Cities and Regional Development. Australia's Smart Cities Plan. 2020. https://www.infrastructure.gov.au/cities/smart-cities.

European Commission. Sustainable Urban Mobility Indicators (SUMI). https://transport.ec.europa.eu/sustainable-urban-mobility-indicators/en

Fiat Group World. Stellantis Facilities: Global production sites overview. 2021 https://fiatgroupworld.com/stellantis-facilities/.

KPMG International. Global Mobility Readiness Index 2021. https://home.kpmg/xx/en/home/insights/2021/04/global-mobility-readiness-index.html.

PwC Tanzania. Logistics Contribution to Tanzania's Economic Growth. https : / / www . pwc . co . tz / press - room / logistics - contribution-to-tanzanias-economic-growth.html.

UN Population Division. World Population Prospects 2024. United Nations Population Division, Data Portal. https://population.un.org/wpp/

United Nations Tanzania. Tanzania Annual Results Report 2020–2021. Tech. rep. United Nations Tanzania, 2021. https : / / tanzania . un . org / sites / default/files/2022-06/Tanzania%20Annual%20Results%20Report%202020-2021.pdf.

World Bank. Global Database of Shared Prosperity. https://data360.worldbank.org/en/search