

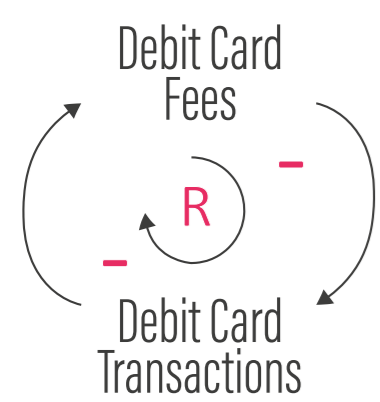
PAID PAYMENT TECHNOLOGIES

SYSDYN DYNAMICS

UK

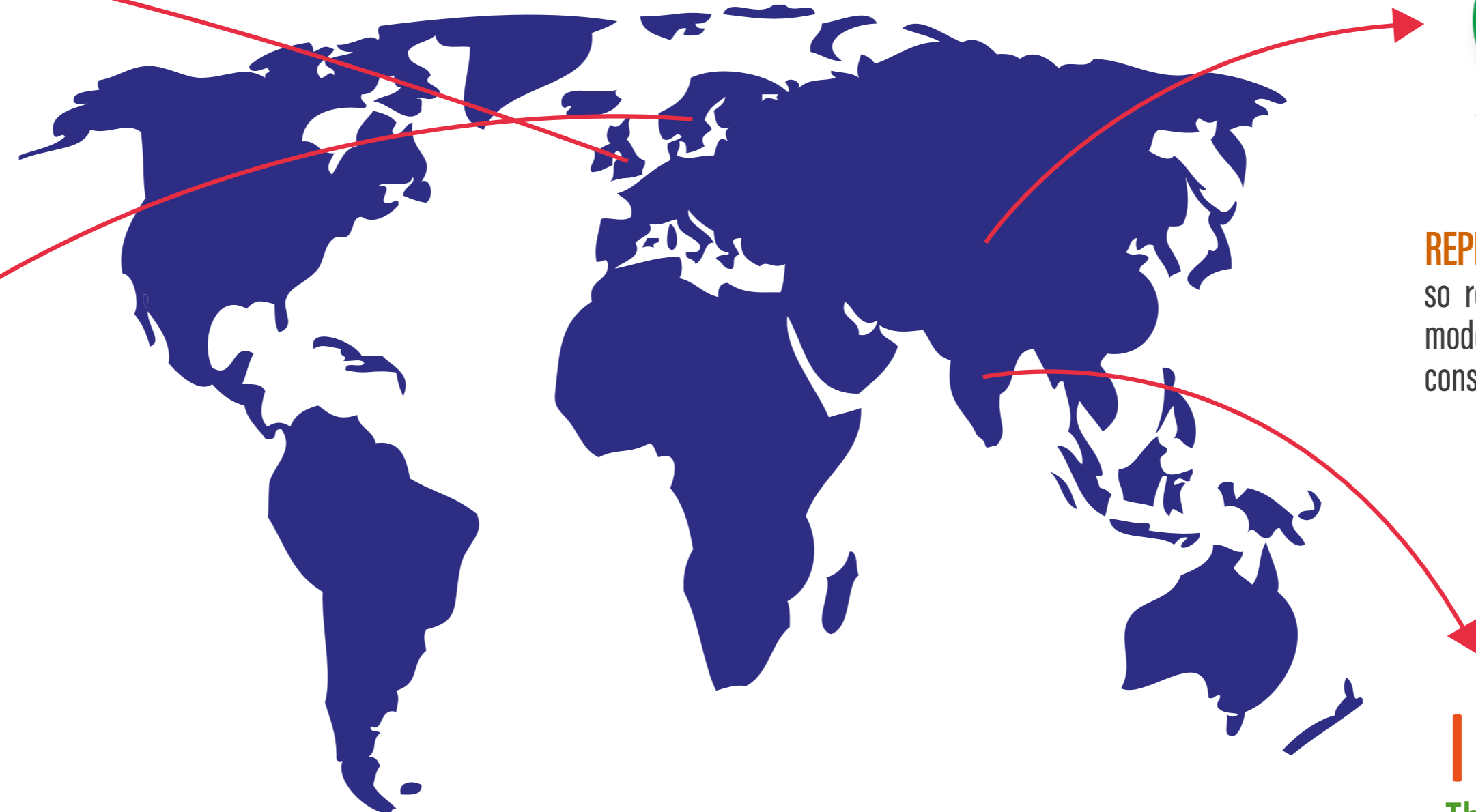
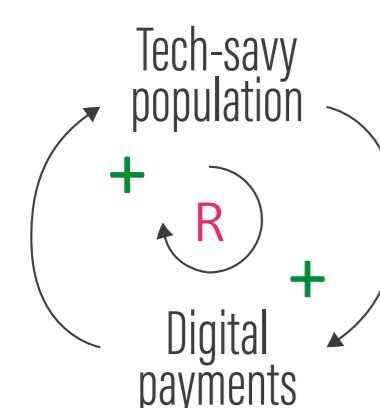
DEBIT CARD TRANSACTIONS

Since 2017, debit card number of transactions have surpassed cash transactions (13.2 vs 13.1 billion), having 98% of the population with debit cards.



SWEDEN

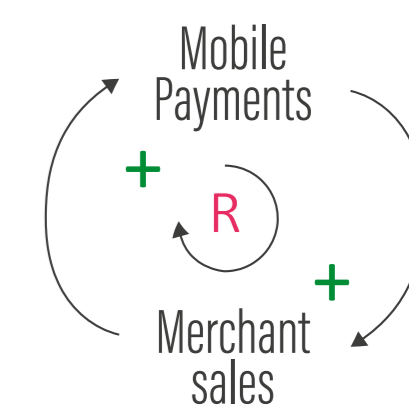
The Sveriges Riksbank (central bank) and mayor commercial banks have decided going cashless for 2023 to reduce cost of money distribution and robberies and increase taxation, proposing several strategies, the most accepted one by the population is a new fintech app called Swish.



CHINA

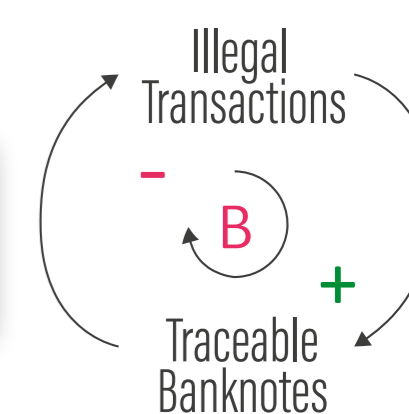


REPRESENT 9 TRILLION U.S. DOLLAR MOBILE SALES, so retailers are forced to move towards this business models by using QR codes. Also, due to higher access to consumer data.



INDIA

The Indian government unsuccessfully banned the 500 and 1000 rupees banknotes, having to create a new 2000 rupees banknote with high security features.



Background, motivation and research challenge

Several countries are changing from a cash-based economy to a technological diverse one. Therefore, it is important to evaluate the diffusion dynamics of the introduction of these technologies according to different economic, social and environmental factors, to establish a payment system that is strategically aligned to the countries' needs, as well as tactically coordinated, by being effective, efficient and efficacious.

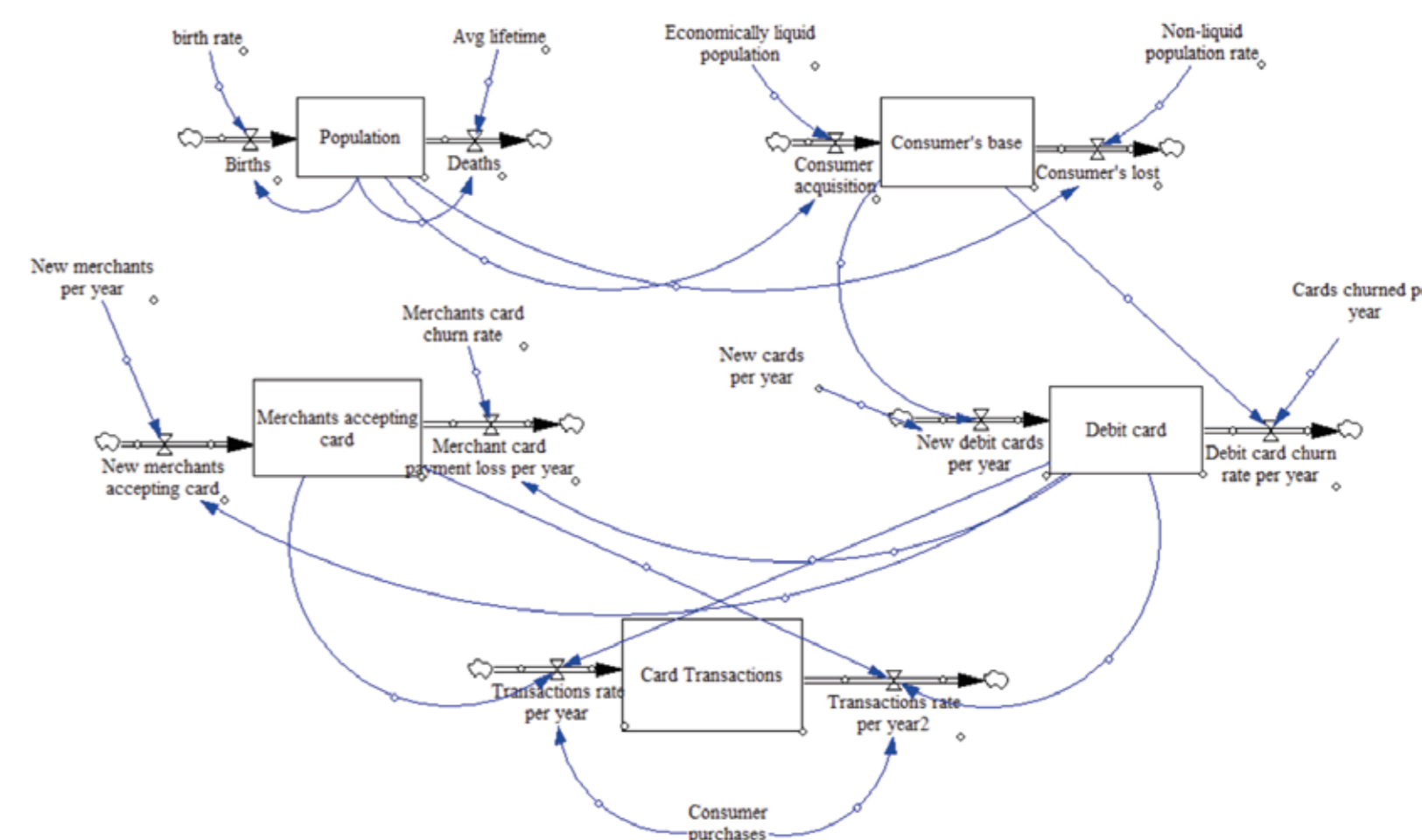
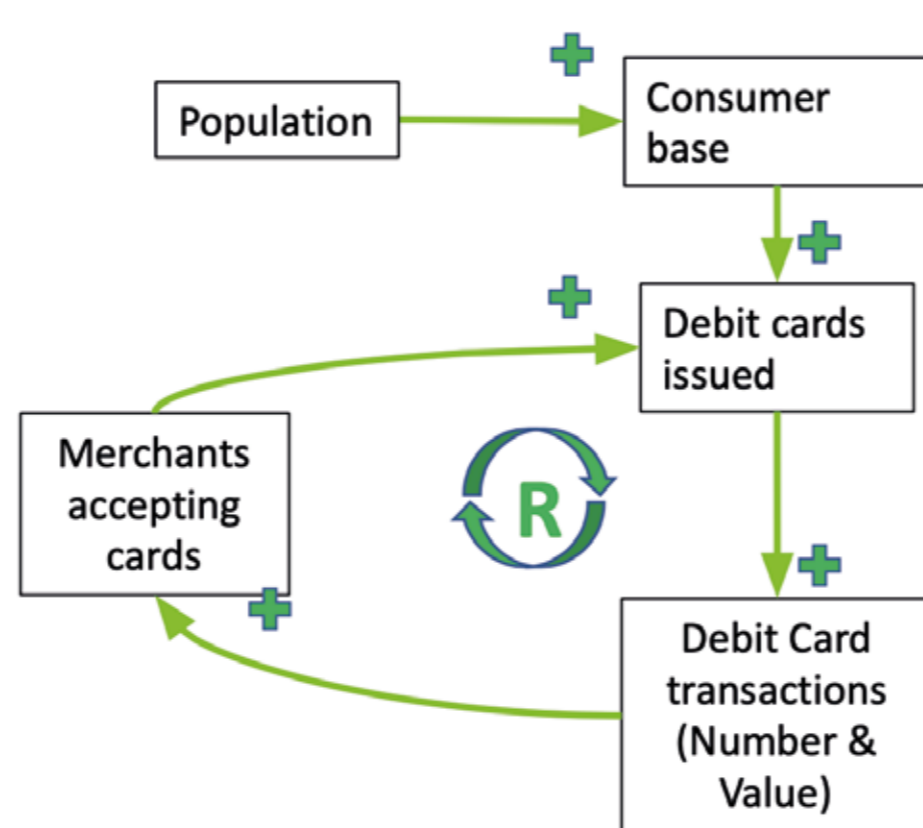
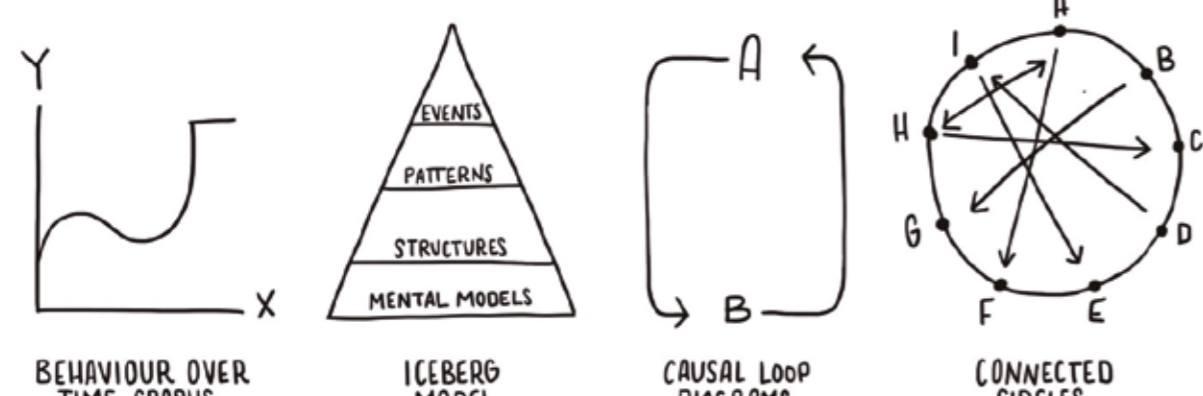
RESEARCH METHODS

SOFT SYSTEMS THINKING PROBLEM STRUCTURING

SYSTEM DYNAMICS MODELLING

SYSTEMS ENGINEERING SIMULATION

TYPES OF SYSTEM MAPPING



WHAT ARE SOME OF THE CHALLENGES?

- System dynamics research applications have not been applied to a digitally-based environment.



- This research is proposing the foundations for economic, social and environmental sustainability.



- New currencies are emerging that could affect the payment due to their volatility.



How to ensure secure transactions? (i.e. blockchain, biometric security, other security features).



WHAT IS THE VISION AND RESEARCH OBJECTIVES?

Our vision is to create a sustainable payment environment, by creating better analysis methods to determine technological fitness.

The research objectives are:

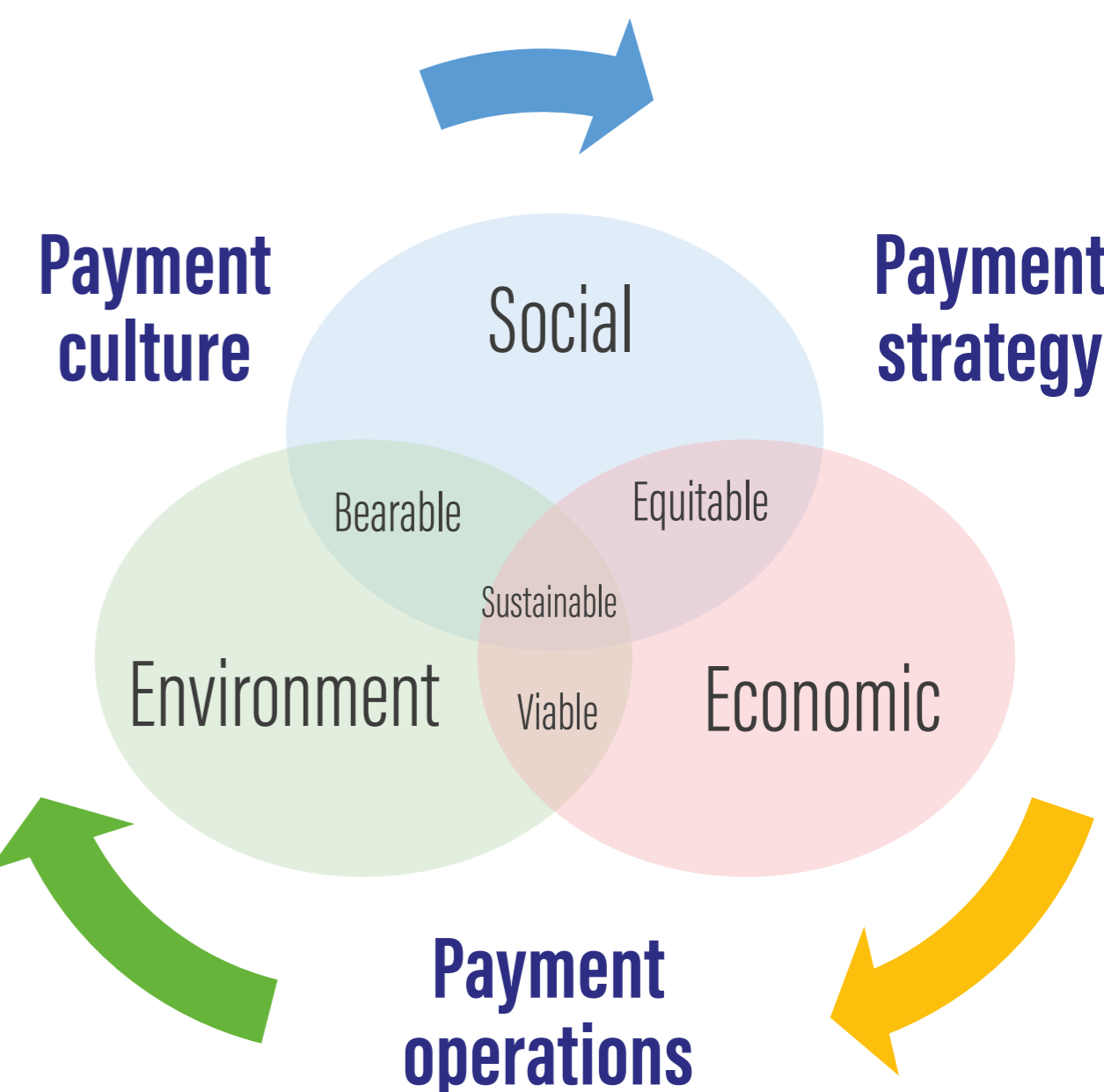
- Determine the factors (e.g. economic, political, social, legal and environmental) involved in the adoption and use of the payment systems from a historical, current and future perspective? Looking at the cases of cash, card, mobile and biometric in specific country environments.

- Establish how do these factors affect, and are affected by, the technological payment industry investment cycles in order to generate the right payment product mix from an efficiency (use of resources), effectiveness (real outcome) and efficacy (desired outcome) perspective?

WHERE ARE WE HEADING? (EXPECTED RESULTS)

The main output is an analysis framework to develop a payment system introduction portfolio according to the specific environmental characteristics and develop a healthier business model. The main indicator of a healthy environment is population trust and coordination, plus the cost of a digital payment system is lower than those of physical activities.

Other considerations are payment speed, crime reduction and tax collection. The level of adoption of digital technologies are based on economic development (retail sales), technological readiness and, number of digital methods available, which at the same time depend on the investment in these technologies.



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