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The failure of mobile money as a public policy in Ecuador: An explanatory evaluation

Master's Thesis

Technology Governance and Digital Transformation

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I hereby declare that I have compiled the thesis independently
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ABSTRACT

Given the broader impact that information and communication technologies have had on financial inclusion in developing countries, some national governments have tried to promote the adoption of mobile money payments technology to replicate the socio-economic improvements seen in the most successful cases. The Government of Ecuador approached this through the novel conception of a central bank-led mobile money payment system implementation. The project was highlighted by the authorities as one of emblematic characteristics that was going to drastically reduce the levels of financial exclusion in the nation and even bring people out of poverty. However, something did not work as expected and in the year 2018 the last account of the system was closed. This paper tries to identify what are the factors that played the most influential role in the collapse of one of the most important programmes for mass technology adoption and financial inclusion in the recent history of Ecuador.

Keywords: Ecuador, mobile money, payment systems, public policy failure, technology adoption

INTRODUCTION

Information and communication technologies have had a positive impact on financial inclusion in developing countries, with mobile phones playing a key role in this process as they have allowed a fast expansion of services running on top of them to historically financially excluded regions and demographic groups (Vu 2011; Andrianaivo and Kpodar 2012; Sassi and Goaied 2013; O. Evans 2018).

Payments systems are one of the most elemental financial services, as they allow the transfer of value between buyers and sellers, enable the existence of a market economy and are a critical component for its efficient functioning (Gogoski 2012; Nakajima 2012; Boel 2019). This basic but fundamental financial service has been the main beneficiary of the mobile technologies expansion in the developing world, particularly in Africa and Asia, where a combination of high levels of mobile telecommunications penetration and high rates of financial exclusion among the population have been identified as important common factors allowing the flourishing of mobile money payment systems (Gencer 2011; Donovan 2012; Lashitew, van Tulder, and Liasse 2019).

As in Africa and Asia, Latin American countries have faced analogous challenges of financial exclusion and have stood on the verge of a similar financial transformation. Here, for instance, Ecuador has had one of the highest mobile network penetration levels in the Latin American region, while the financial inclusion indicators of the country have plainly suggested that a large part of the population has no access to financial services (Valencia 2015; Terán et al. 2016). By and large, Ecuador has shared similar socio-economic conditions to previous mobile payments success stories in other developing nations. Thus, there was no surprise when in 2014 the Government of Ecuador announced the launch of the first mobile payments system in the country to be managed by the Central Bank (Junta de Política y Regulación Monetaria y Financiera 2014; Valencia 2015). After years of planning and development, the project had acquired national relevance and was largely seen by the government of the time as an emblematic programme for the development of the nation, which would have had a tremendous impact on its economic future, increase the financial

inclusion of the population, and even reduce poverty (Banco Central del Ecuador 2013a; Terán et al. 2016).

However, less than three years after the Central Bank of Ecuador (BCE) launched the programme, it was canceled. Even the regulation that supported its unique setting (where the BCE was essentially granted a monopoly over it) was dropped in 2017 by the main legislative body of the country (*Ley Orgánica Para La Reactivación de La Economía, Fortalecimiento de La Dolarización Y Modernización de La Gestión Financiera* 2017). As concluded by the National Secretariat of Planning and Development of Ecuador (SENPLADES) already in 2016 on its Evaluation of Operations of the mobile payments programme, the public intervention was largely failing to achieve the expected relevance and use among the population (SENPLADES 2016). This culminated in the total and definitive deactivation of all accounts and closure of the programme in March 2018 (Banco Central del Ecuador 2018a). It was an implicit declaration of defeat by the government and was explicitly identified as a failure by the local academia due to the clearly missed goals of having a major impact on financial inclusion (Campuzano, Chávez, and Maza 2018), which was the original *raison d'etre* of this programme in the first place. This outcome is puzzling and raises one clear research question that the current thesis aims to address. Namely, why did the Ecuadorian mobile payments system programme fail?

The methodology to be followed in the present thesis will be the case study. It will rely mainly on literature review and documentation analysis for gathering the data and information that will be used to provide an answer to the aforementioned research question. In the end, the findings will be contrasted and verified against the opinion of an expert through an interview.

The work will be divided into the following sections coming after the current introduction. The first part of this work will describe the methodological approach taken to provide an answer for the proposed research question. The second section will present the public policy analysis framework, where the thesis explores what are the factors affecting the outcome of public policy. The empirical analysis will shed light on the Ecuadorian case of mobile payments programme, followed by the evaluation of the results of the Ecuadorian mobile payments initiative by applying the theoretical frames elaborated beforehand. Then the

findings will be assessed by an expert in the area for validation. Finally, the conclusions and implications will be presented and further research areas will be proposed.

This evaluation of results will become of the utmost relevance not only for the local public institutions involved in its implementation in Ecuador, but to similar actors in the region and beyond, willing to develop such systems. The learnings of this transcendental project should be stated clearly and left for posterity as key findings that would allow other interested communities and institutions to avoid the same mistakes.

1. METHODOLOGY

The aim of this thesis is to provide some light on the reasons why the Ecuadorian mobile payments programme failed. In order to answer this question, this paper will explore from a qualitative standpoint the wide range of factors that can influence the outcome of public policy, in particular in the area of the promotion of the digitalization of public goods or services.

Among the reasons for taking this approach, one is that qualitative research not only discovers knowledge, but develops the tools and mechanisms to actively construct it. Social scientists invent the concepts used to interpret the data collected (Sadovnik 2007). It allows the audience to make sense of experiences through building models and concepts, taking into consideration the inevitable sociocultural dimension. It is impossible to construct these interpretations in isolation, but with a natural relation with the shared cultural baggage (Schwandt 2000). Moreover, as the main interest of this work is in the causality patterns and the context in which the situation of interest happened and how this context had influenced its outcome, the recommended approach is a qualitative one.

Given the proposed research question, the preferred methodology would be case study research as presented by Yin (2017). According to the author , the way in which the proposed research question has been formulated is of fundamental relevance to later define which method will be used to answer it. In the context of this paper, the question contains a ‘why’ interrogative word, that comes with an explanatory intention. Another requisite to guarantee the suitability of a case study method is that the control that the investigator has over behavioral events concerning the situation of interest is low or inexistent. Additionally to these requirements, there is another criterion that needs to be met in order to confidently say that the proposed research question for this paper will be well addressed by a case study. The higher the degree of focus on contemporary events over historical ones, the more suitable a case study would be; meaning that the greater the focus of the research question on present events, the better a case study will be fitted to address it. In this case, the research question will deal with contemporary events that have started to be analyzed only in recent years. All in all, it can be stated that a case study is be the most suitable option to address the proposed

research topic, as it deals with an explanatory ‘why’-type of question about contemporary events, where the investigator has no control at all over behavioral events, and thus meeting the three criteria stressed by the author.

Literature review and document analysis will be the method for gathering data about the studied case, as it will allow the synthetisation of three main areas that need to be understood. First, the factors influencing the outcome of public policy need to be mapped and operationalized together with the factors affecting the success of mobile money projects. To achieve this, relevant academic work will serve as the source of data.

Second, to be able to shed light on the Ecuadorian case; key documentation related to this public policy needs to be obtained and analyzed. This ecompasses both official documentation about the programme produced by the government at the time, as well as related contemporaneous academic works.

Lastly, analyses produced by the local academic circles, together with the official evaluation of operations of the programme, and other public documentation will be used to gather data on how the previously identified factors influenced the Ecuadorian programme and in this way produce the final explanatory evaluation to try to answer the research question of why did the Ecuadorian mobile money public programme failed.

As a last step, the findings of this work will be validated against the opinion of an independent expert in the area during a short interview. Due to the existing accusations and unfinished investigations of highly organized corruption and widespread embezzlement of public funds through corrupt public procurement processes in Ecuador in the years of the SPM (Brik 2019; Deutsche Welle 2020; Schneider 2020), this interview will only include a person non-linked to public administration and with an international trusted public profile.

2. THEORETICAL FRAMEWORK

2.1 Qualitative public policy evaluation

According to Sanderson (2002) policies can be described as 'conjectures' based on the best available evidence. However, in most areas of economic and social policy-making, this best available evidence will not provide a full degree of confidence that the interventions from the public sector will work as expected. Evaluating public policies then becomes a necessary undertaking to be able to understand to what extent they achieved their goals or failed, and perhaps more importantly, why.

However, the way in which the evaluation analysis is conducted influences directly whether it will be able to provide useful information on the causality behind the observed outcomes. Fisher (2007) has stated that there are important limitations to the empiricist policy analysis and the subsequent emerging technocratic decision making process that need to be taken in consideration when trying to understand policies. The main limitations exposed refer to the will of these empiricists to translate complex social and political issues into technically defined problems looking for administrative solutions. The main processes involved in these analyses have been empirical-technical methodologies like cost-benefit, or risk estimation. In consequence this type of analysis has often been perceived as lagging behind in terms of useful knowledge generation for feeding back the policy making process. In other words, the direct social-political impact of this type of analysis has been many times limited.

In light of this, and with the aim of recognizing that diverse perspectives are involved in the interpretation of social reality (and the emerging policy problems from this reality), the argumentative turn in policy analysis was born. The main objectives of this have been to be able to represent a more diverse range of interests, arguments and discourses in policy analysis, to be able to produce more evidence that could be used in public debate (MacRae and Majone 1990). Moreover, it has been implied that some of the main goals are to demystify conventional public policy analysis by empowering citizens to understand these

analyses and to bring the local knowledge of people to play a more relevant role as part of the social environment where policies are applied (Fischer 2007).

This means that to perform a more useful and impactful policy analysis, the empirical findings need to be contrasted with the normative assumptions that serve as the base for the interpretation of social reality. To achieve this, Fischer (2007) has formulated a multi methodological framework for integrating these empirical findings with the normative components that are fundamental for the social construction. The author has divided it in 4 'discourses', which cover from specific points like efficiency of the program, to more complex social questions related to the role it plays on the social environment setup and even the impact on the way of life. The logic works in two levels, one concerning the program itself, and the other related to the abstract societal construct. It also has been emphasized that these should work as flexible guidelines, and not as a method that needs to be fulfilled formally.

The author has created the following 12 questions that help to synthesize and steer the arguments more easily towards the desired discourses to be covered (See Table 1):

Table 1: Fischer's 4 discourses and 12 questions
Source: (Fischer 2007)

Discourse	Questions
Technical Analytical discourse: Program Verification The task is to produce a quantitative assessment of the degree to which a program fulfills a particular objective.	➔ Does the program fulfill its stated objective(s)? ➔ Does the empirical analysis uncover secondary or unanticipated effects that offset the program objectives? ➔ Does the program fulfill the objectives more efficiently than alternative means available?
Contextual Discourse: Situational Validation Instead of measuring program objectives per se, validation examines the conceptualizations and assumptions underlying the problem situation that the program is designed to influence.	➔ Is the program objective(s) relevant to the problem situation? ➔ Are there circumstances in the situation that require an exception to be made to the objectives? ➔ Are two or more criteria equally relevant to the problem situation?

Systems Discourse: Societal Vindication The task here is to show that a policy goal (from which the program objectives were drawn) addresses a valuable function for the existing societal arrangements.	➔ Does the policy goal have instrumental or contributive value for the society as a whole? ➔ Does the policy goal result in unanticipated problems with important societal consequences? ➔ Does a commitment to the policy goal lead to consequences (e.g., benefits and costs) that are judged to be equitably distributed?
Ideological Discourse: Social Choice Social choice seeks to establish and examine the basis for making rationally informed choices about societal systems and their respective ways of life.	➔ Do the fundamental ideals (or ideological principles) that organize the accepted social order provide a consistent basis for a legitimate resolution of conflicting judgments? ➔ If the social order is unable to resolve basic values conflicts, do other social orders equitably accommodate the relevant interests and needs that the conflicts reflect? ➔ Do normative reflection and empirical evidence support the justification and adoption of alternative principles and values?

This approach to policy analysis has as a goal to offer a better solution for real world policy making, than the conventional empirical centric policy analysis, which has been so often disconnected from the social construct of the particular context of policy implementation.

This disconnection between policy models and the practices or events that should be generated or legitimized in those specific contexts by these models is commonly left without too much attention (Mosse 2004). As it has been mentioned, one of the main reasons has been the strong analytical focus on the empirical part and the implementation processes themselves, without too much attention to the impacts on the social environment in which the policy is implemented. With the intention of creating a good model designed to specifically shift the focus towards the impacts on the social construct in which the policies are implemented, Schouwstra and Ellman (2006) have developed an evaluation model specifically devoted to this goal, allowing them in essence to cover the full discourse of the

policy argument to be analyzed for a deeper understanding of the outcomes and overall more realistic evaluation process.

2.1.1 Extended Geelhoed-Schouwstra framework

The model proposed by Schouwstra and Ellman (2006) runs on top of the Geelhoed-Schouwstra framework of policy analysis, which is a simple yet effective diagrammatic representation of the policy process. It was created as a part of larger project aimed to improve policy accountability in the Netherlands, by request of the Dutch Parliament. The extended version was developed not only as a more comprehensive model for the policy-making process itself, but also as an analytical instrument that works well as the starting point of a process of investigation of how and why a specific policy provoked the consequent observed results.

At the core of this model lies the basic Geelhoed-Schouwstra framework, which in turn consist of six fundamental steps for policy building: Goal, Objectives, Methods/Instruments, Activities, Performances and Results. What the extended version of this model does, is to add layers of factors grouped into what they called the ‘Conceptual’ and ‘Institutional’ frameworks. These additional concepts are added in an effort to have a more complete view of the impacts of a policy when creating it, and the outcomes and side effects when analyzing or evaluating it (Schouwstra and Ellman 2006). This reasoning for declaring the usefulness of this model has been also stated by other public policies analysis looking for explanatory evaluations of outcomes (Fornili and Burda 2009; Yang et al. 2023).

Conceptual Framework

One of the additional layers added is the Conceptual Framework of policy makers, which contains the definitions, assumptions and theories on how the public policy is supposed to work. This refers to the ideology, norms and values that people follow, the theories and assumptions on which the public policies are based, and the attitudes. This background is shaped by the geographical, historical and cultural settings and can have a big impact on the outcome of policies. This means that to understand better why a policy has achieved or failed

to achieve some objectives, it is necessary to add the conceptual framework to the previous basic model (Schouwstra and Ellman 2006).

In the end what this additional layer of information wants to achieve is to help understand the background and objectives of the implemented public policy, however there is little advice in literature regarding how to identify such a conceptual framework (Mann and Schweiger 2009). This is evidently a limitation, with even the authors of the model stating that there is hardly any attention at all to this in policy making or evaluation. In spite of the limitations of available literature and examples for the Conceptual Framework operationalization, there are some guidelines provided by the authors of the model that will be followed in this document.

Institutional Framework

According to Schouwstra and Ellman (2006) the other equally important layer that needs to be added to the previously presented basic framework to be able to explain in a comprehensive way the differences between expected and real outcomes of public interventions, is the institutional framework. This layer refers to the political, economical and social factors affecting the environment in which a policy will be implemented. It also comprises the institutional and legal setting as well as the stakeholders of the programme. These factors are in turn affected as well by a cultural, historical, and geographical background . It is important to remark that the authors mention that the framework has to be adapted for each particular analysis or policy, indicating that the factors previously described will mean different things depending on the public programme. The authors have concluded then, that this extended model is in fact one that incorporates irrational or incremental factors into the basic framework, giving them a place and weight for when evaluators come to assess and understand how and why a policy was successful or not.

Use in public policy analysis

The authors have structured a clear path of interrogations that need to be answered in order to start using this model for analyzing a public policy (Schouwstra and Ellman 2006). The first step is to follow the basic framework steps in order to understand what the programme is about. What are the objectives? What methods or instruments have been used? and so on. After having provided the relevant information on the steps described in the basic framework

and in order to provide the reasons why a public intervention achieved its goals or failed in the process, the next step is to address the conceptual and institutional frameworks with the following systematic questions presented by the authors (see Table 2):

Table 2: Questions to analyze the institutional and conceptual framework systematically
Source: (Schouwstra and Ellman 2006)

1. What were the most fundamental **requirements** of the policy or programme with regard to the institutional framework?
    a. Political setting
    b. Social setting
    c. Economic setting
    d. Institutions
    e. Legal setting
    f. Stakeholders
    g. Geographic characteristics
2. What were the most fundamental **requirements** of the policy or programme with regard to the conceptual framework?
    a. Theories and assumptions
    b. Definitions
    c. Ideology: norms & values
    d. Attitudes and behavior
3. How did the **institutional** framework of the country concerned look with regard to each of the fundamental requirements?
    a. Political setting
    b. Social setting
    c. Economic setting
    d. Institutions
    e. Legal setting
    f. Stakeholders
    g. Geographic characteristics
4. How did the **conceptual** framework of the country look with regard to the fundamental requirements?
    a. Theories and assumptions

b. Definitions
c. Ideology: norms & values
d. Attitudes and behaviors

5. Were all fundamental requirements with regard to the institutional and conceptual framework fulfilled in the country concerned? If not, how did this non-fulfilment influence the outcome of the policy or programme?
6. What measures have been taken or could have been taken to prevent undesired outcomes of the policy or programme?

These questions would help the evaluator to provide answers for what were the conceptual and institutional requirements before the policy was implemented, and what actually was encountered during the process. In this way, the factors that supported or prevented a policy success would emerge from the comparison. It is important to state that the authors have pointed out that it is actually not important for the analysis of the category under which a problem or characteristic has been classified, as long as it is classified and some attention has been given to it.

2.2 Drivers and barriers of digital innovation in the public sector

To further understand why the mobile payments programme implementation failed in Ecuador, it's also important to address first what are the usual drivers and barriers of innovation in the public sector. The public intervention being analyzed in this paper represents a technological process innovation according to the categorization given by de Vries et al (2016), because it is focused on the deployment of new technologies to provide services to the population. In the case of Ecuador, the government was trying to implement a new payments system to provide the population with a new way to transfer funds, and more importantly; increase the number of participant citizens in the financial system (Valencia 2015).

De Vries et al (2016) have also created a comprehensive classification of the potential drivers and barriers affecting innovation in the public sector. These so-called 'antecedents' groups, will provide a very good overview of the topics that should be explored in this work. These are the described categories: 1) the environmental level, which represent the external context;

2) the organizational level, which is composed of both cultural and structural characteristics of an organization; 3) the innovation level, which represent the intrinsic attributes of an innovation; 4) the individual level is the last one and represents the individual characteristics of the persons who innovate. These categories will now be described in more detail:

Some of the main antecedents in the environmental level are the environmental pressures received from media, politics and the public opinion in general (Bekkers, Edelenbos, and Steijn 2011). In second place, the participation in networks and the relationships with other organizations have been also mentioned as important. Regulatory aspects are found to be generally contrary to innovation, and finally the compatibility with other entities like organizations or states adopting the same innovation (de Vries, Bekkers, and Tummers 2016).

In the organizational level, slack resources (such as time, money, IT facilities) are the most common antecedent in this group. In this regard, the larger the organization is the more slack resources it may have (Walker 2006). In addition to this one, the leadership style inside the organization, together with the risk aversion have been also identified as important constituents of this group. As smaller components, the incentives, conflicts and structures inside the organization have also been mentioned (de Vries, Bekkers, and Tummers 2016).

At the innovation level, antecedents are intrinsic characteristics of the innovation itself. The perceived ease of use is usually the most common one (Damanpour and Schneider 2008). Furthermore, some other aspects of the innovation like its relative advantage, trialability and compatibility have also been quoted (de Vries, Bekkers, and Tummers 2016). Lastly the individual level refers to the antecedents related to the individual characteristics of the people who innovate (*Ibid.*). The authors have identified here empowerment of the employees as the main antecedent. But in addition, job-related high skills are also important together with the organizational position. They also highlight the relevance of the role of agents in enabling innovation, as seen in this level as well as the leadership on the organizational level (*Ibid.*).

One very interesting point of the work of these authors is the attempt to provide a measurement of the level of relation between these aforementioned antecedents and the types of innovations.

As described before, the Ecuadorian case can be described as a technological process innovation. Thus according to the literature review of de Vries et al. (2016), the main influence from the antecedents is exercised by the organizational ones (as leadership), with a 52% level of linkage (*Ibid.*). The environmental level comes in second place with an influence level of 25% (*Ibid.*). The innovation and individual levels come somewhat behind in this scale with 8% and 15% respectively (*Ibid.*). What this measurement states is that the success in the diffusion of these types of public sector innovation are extremely related to the organizations and the environment where they are being implemented, even more that to the intrinsic characteristic of the project.

By mapping how the Extended Geelhoed-Schouwstra framework (Schouwstra and Ellman 2006) for policy analysis (particularly to the aforementioned 'institutional' and 'conceptual' frameworks) interact with the key antecedents identified by de Vries et al (2016), a better consistency emerges, together with a broader understanding of the impact of the variables of the selected framework of use in the outcomes of the type of public programme in scope of this thesis (See Table 3).

In the first place, almost all of the variables presented on the institutional framework of the Extended Geelhoed-Schouwstra model (Schouwstra and Ellman 2006) are covered at the environmental level of the key antecedents identified by de Vries et al. (2016). This makes sense as the political, social, economic settings can all be understood as part of what de Vries had described as the environmental pressures from the political and public demands, as well as the media attention. Further, the legal setting variable of the Extended Geelhoed-Schouwstra model is also covered by the mentioned regulatory aspects of the environmental level of the de Vries framework. This means that 25% of the time there is a direct linkage from the political, social, economic and legal setting to the process innovation type.

Secondly, the Institutions and Stakeholders variables of the Institutional framework of the Extended Geelhoed-Schouwstra model (Schouwstra and Ellman 2006) are covered by the Organizational Antecedents level presented by de Vries et al. (2016). This means that a direct linkage between the institutions and stakeholders, and the process type of innovation described by de Vries exists 52 % of the time.

Finally, the conceptual framework of the Extended Geelhoed-Schouwstra model (Schouwstra and Ellman 2006) is covered first by the innovation characteristics level of de Vries et al. (2016). Here definitions, theories, and assumptions about the innovation itself are treated. This level is found to be linked to the innovation process 8% of the time. Further, at the individual antecedents level, the ideology and norms, as well as the attitudes and behaviors variables of the Extended Geelhoed-Schouwstra model (Schouwstra and Ellman 2006) represent exactly the inputs coming from the individual level of the drivers of the innovation process.

In conclusion we can argue that the Extended Geelhoed-Schouwstra model (Schouwstra and Ellman 2006) actually takes into account the main drivers and barriers of public sector innovation with its architecture divided into what the authors called institutional and conceptual framework. This provides a reliable and interesting framework to analyze the results of a public policy, and understand better why these results came about. This is of particular importance when no clear difference is found in the quantitative aspects between the facts that lead to the implementation of similar public policies, but a completely different outcome is the result.

Table 3: Mapping of the antecedents identified by de Vries et al. (2016) as drivers and barriers of digital innovation in the public sector to the additional layers of factors influencing the outcome of public policies presented in the Extended Geelhoed-Schouwstra framework for policy analysis (Schouwstra and Ellman 2006)

de Vries et al. (2016) drivers and barriers of public sector innovation		Extended Geelhoed-Schouwstra (2006) framework for policy analysis	
Levels	**Relation between antecedents and process innovation type levels**	**Institutional Framework**	**Conceptual Framework**
Environmental antecedents	25%	● Political Setting ● Social Setting ● Economic Setting ● Legal Setting	
Organizational antecedents	52%	● Institutions ● Stakeholders	
Innovation Characteristics	8%		● Theories and Assumptions

			• Definitions
Individual antecedents	15%		• Ideology: Norms and values

2.3 Mobile Money

Mobile Money means essentially the provision of financial services through cell phone technology . Among the main services provided via this channel, there are the opportunity to offer ‘mobile finance’ which includes credit lines, insurance and savings accounts, mobile banking which focuses on the transactional and informational aspects, and mobile payments which is the capability to move economic value between persons, businesses and public entities (Jack and Suri 2011; Gencer 2011).

The proposed main reason for using the mobile network rails to provide the aforementioned financial and banking services comes from the fact that the incredible fast adoption of cell phones technology in the last decades provides a large (and ever expanding) network of users that already have the needed hardware at hand (Jack and Suri 2011; Donovan 2012).

This type of financial infrastructure running on telecommunication rails has some important proposed benefits. Like its ability to influence and help to grow the GDP of the countries where it has been deployed, making the non taxable “gray economy” visible for the benefit of the fiscal planners, and heavily reducing the friction of moving and capturing remittances (Gencer 2011). Even though there exist some low level of criticism to this technology, particularly because of its capability of constraining the liquidity of the banking system and monetary policy enforcement, the overall outcome remains positive in the long term, mainly due to its low entry barrier that allows to add millions of unbanked individuals and businesses to the formal financial sector (Mawejje and Lakuma 2019).

This capability has not passed under the radar of regulators and policy makers in countries where it is really needed. A great example of a successful implementation of regulations for enabling the flourishing of this technology is Kenya, where its Central Bank has done a great work avoiding becoming an obstacle in the way of innovation by enacting useful legal frameworks for its development (Muthiora 2015). Another great success story in the field of public policy implementation that supports the mobile money ecosystem is Tanzania, where its Central Bank has had a similar success to the one in Kenya (di Castri and Gidvani 2014).

2.3.1 Mapping Mobile Money Success Factors

Heyer and Mas (2011) have identified five factors that can help map the readiness of a market for the deployment of Mobile Money systems. These factors help to assess the success potential of the mobile payments system to be implemented. To understand what these country level factors mean in terms of the end user of the system, a conversion to the three overlapping findings between the extensive literature researches on digital payments adoption by Patil et al. (2017) and Mondego and Gide (2018) will be proposed (see Graph 1).

The first to be described is the so-called 'latent demand for transactions' among the potential users (Heyer and Mas 2011). The authors mainly point here to the need for latent demand for internal remittances in the market. This demand seems to mainly come from internal migration patterns that accelerate urbanization to rates between 30%-50%. When such demographic patterns are combined with a high number of households depending on internal remittances, that can also be originated from the public sector via pensions and welfare systems, a latent natural demand for transactions is created. This dynamic of strong rural to urban migration added to large penetration of mobile services has also been highlighted as the backbone of the socio-economic factors for the success of mobile money platforms in emerging markets (Priyo et al. 2015). When converted to what this means for the adoption of digital payments, the 'latent demand for transactions' points to the 'perceived usefulness' of the system, which emerged in the literature review overlap between the findings of Patil et al. (2017) and Mondego and Gide (2018) as one of the three most significant determinants of consumer's intention to use such systems.

Secondly, it is mentioned that the coverage and the quality of the alternatives to mobile money play also a fundamental role on the readiness level of a country (Heyer and Mas 2011). This basically means that in places that have good and well developed services to send money, it will be more difficult for mobile money platforms to be successful. Among the possible competitors to the mobile money system, there are the formal ones, like banks and post offices, and more informal ones like the sending money through bus companies, or non-financially regulated exchange of mobile air time. This lack of good alternatives for mobile money is so important, that it has been stated as one of critical the reasons for this type of system to seem to work much better on less economically-developed countries than

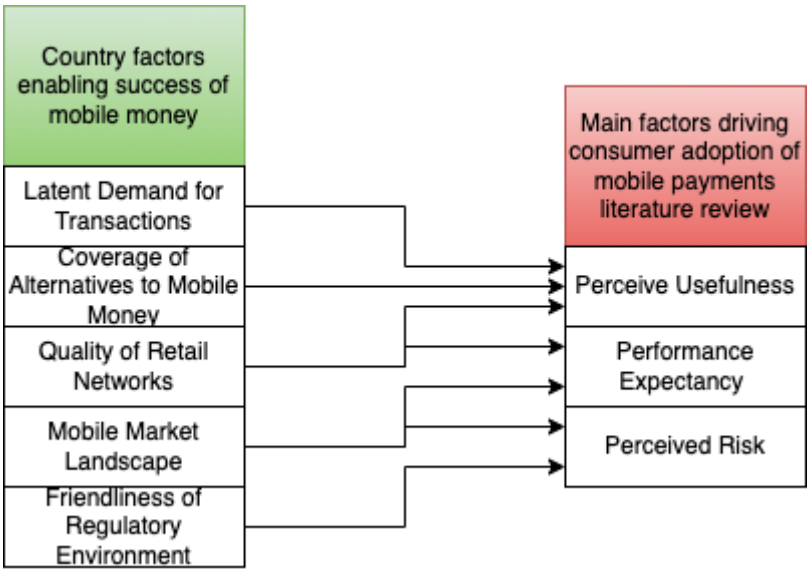
others, as lack of channels for fast money transmission has been a traditional characteristic of such markets (D. Evans and Pirchio 2014). Here ‘perceived usefulness’ can suit best for the conversion to the consumer’s digital payments adoption findings of Patil et al. (2017) and Mondego and Gide (2018), because the existence of any good alternative to the mobile money platform would immediately decrease its usefulness.

In third place comes the critical regulatory part, and its level of friendliness to the mobile money system (Heyer and Mas 2011). The coverage of regulation is highlighted as a factor taken into account by users to assess the risk of the system itself, which is why it will be converted here to what Patil et al. (2017) and Mondego and Gide (2018) detected as the ‘perceived risk’ of the system. According to the findings of Patil et al. (2017), the negative effect of increased perceived risk could be as twice the magnitude of any other positive factor impact. Heyer and Mas (2011) also stated that regulation can increase or ease friction on the user side, especially in regards to account opening for both users and agents. It also plays a big role for the mobile network operators, as it can define the structure of the business model itself with topics like pricing, interoperability rules and providers and partners relationships. In this regard Evans and Pirchio (2014) have detected that indeed heavy regulation seems to be associated with a higher failure rate of mobile money platforms.

The fourth factor is the state of the retail networks in the country (Heyer and Mas 2011). The main role of retail agents is to provide on/off ramps into the mobile money system for users. This means that the mobile money can be cashed in/out at these physical locations. These can be government associated entities like post offices, or private sector street level franchises like pharmacies, and even small neighborhood shops. What matters in regards to this network of retail agents is mainly the geographic reach, technology awareness and liquidity management capabilities. Because of the need of these retail agents to be able to operate the mobile money platform easily, the system has been described as a two sided system that has a fundamental requirement that the user growth goes hand in hand with the retail network growth (Mas and Radcliffe 2011; D. Evans and Pirchio 2014; Priyo et al. 2015). Given its relevance for the operation and normal functioning of the system itself, it will be converted to both ‘perceived usefulness’ and ‘performance expectancy’ on the identified factors by Patil et al. (2017) and Mondego and Gide (2018). To ‘perceived usefulness’ because a flaw in the retail agent network would mean a flaw in the usefulness of the payment network itself, and

to ‘performance expectancy’ because any operational delay or problem on this side would mean an operational delay on the payment network itself as well.

Finally, the last topic quoted is the mobile market landscape. This one refers to aspects like the mobile network demographic and geographic penetration, and mobile network operators (MNOs) market share (Heyer and Mas 2011). The importance of this one it’s easily understood, as the payment network itself runs on top of the infrastructure provided by MNOs. The participation of the MNO as key partners is also captured by the analysis of Priyo et al. (2015) as they mention the partnership with such entities as an easy way to gain access to large user bases. It is also of high relevance to mention that this type of entity is also able to increase trust in the system, especially if they are the main or larger operators in the geographical region where the platform is implemented (Heyer and Mas 2011; Mas and Radcliffe 2011). Because of the direct incidence both on the trust on the system, but also being the infrastructure rails of the network itself, it is converted here to ‘performance expectancy’ and ‘perceived risk’.



Graph 1: Conversion of country level mobile money success factors to main factors driving consumer adoption of mobile payments.
Source: Compiled by the author based on (Heyer and Mas 2011), (Patil, Dwivedi, and Rana 2017) and (Mondego and Gide 2018)

These success factors can be combined with the aforementioned public policy models to get a more robust analysis of what external forces will play a role in the success or failure of mobile money when implemented as a public policy. (see Table 4)

Interestingly, as mentioned by Schouwstra and Ellman (2006), it seems indeed that the conceptual framework goes a little under the radar as seen by the low weight assigned to it and no factors coinciding with its sphere. However, thanks to this mix of models it will be possible to still take it into consideration for the upcoming analysis of the mobile money implementation in Ecuador.

One of the useful insights that can be achieved through this mapping is that while the ‘perceived usefulness’ and ‘performance expectancy’ are factors more intrinsically related to tangible characteristics as defined in the institutional framework, the ‘perceived risk’ is a more broader and influential one that can be directly affected by the conceptual framework, for example with misalignment of definitions or even more of ideologies.

Table 4: Mapping of the factors stated by Heyer and Mas (2011), Patil et al. (2017), Mondego and Gide (2018) together with the antecedents identified by de Vries et al. (2016) as drivers and barriers of digital innovation in the public sector; and the additional layers of factors influencing the outcome of public policies presented in the Extended Geelhoed-Schouwstra framework for policy analysis (Schouwstra and Ellman 2006)

de Vries et al. (2016) drivers and barriers of public sector innovation		Extended Geelhoed-Schouwstra framework for policy analysis (2006)		Heyer and Mas (2011) country readiness factors for mobile money	Patil et al. (2017) and Mondego and Gide (2018) literature review of digital payments adoption
Levels	**Relation between antecedents and process innovation type levels**	**Institutional Framework**	**Conceptual Framework**	**Factors**	**Factors**
Environmental antecedents	25%	● Political Setting ● Social Setting ● Economic Setting ● Legal Setting		● Latent demand for transactions ● Friendliness of regulatory environment ● Coverage of alternatives to mobile money	● Perceived Usefulness ● Perceived Risk
Organizational antecedents	52%	● Institutions ● Stakeholders		● Quality of retail networks ● Mobile Market landscape	● Perceived Usefulness ● Performance Expectancy ● Perceived Risk
Innovation Characteristics	8%		● Theories and Assumptions ● Definitions		● Perceived Risk
Individual antecedents	15%		● Ideology: Norms and values		● Perceived Risk

2.4 Operationalization of the Extended Geelhoed-Schouwstra framework to assess the fundamental requirements for the success mobile money

Conceptual Framework Operationalization

In spite of the previously mentioned limitations, lack of literature and references, and common and historical unconcern of policy makers and analysts with the Conceptual Framework, it will be attempted to be use here as it seems to be able to provide significant exploratory insights that could improve the understanding of public policies outcomes for a more comprehensive analysis.

Theories and assumptions

In the first place the theories and assumptions from policy-makers about how public policy is supposed to deliver the desired outcomes and effects. It is important to clarify those in an evaluation as sometimes the main error of a public programme is the initial expectation from policy-makers about how the programme is supposed to work (Schouwstra and Ellman 2006).

As previously described in this theoretical framework, the main existing assumption driving the implementation of mobile money as a public intervention is that of harnessing the benefits of increased financial inclusion provided by this infrastructure. In other words, Mobile Money is supposed to increase financial inclusion by providing an alternative and attractive gateway to access financial services for people without access to traditional financial services. It means that it is expected that people would start to use this service as a means to benefit from the improved financial inclusion. It is then also expected that the increased financial inclusion would improve the overall financial stability of the users and even the poverty metrics of the user base.

Definitions

It is highlighted as important to be sure that the definitions used by entities implementing the public policy match those of the broader audience and society, as any misunderstanding here can also lead to missed goals and unmatched expectations (Schouwstra and Ellman 2006).

Clear definitions of mobile money are part of transparent and clear regulations. These regulatory transparency and clarity are needed and are a key enabler for mobile money adoption (Suárez 2016; Lashitew, van Tulder, and Liasse 2019). However following Schouwstra and Ellman (2006) advice, we need to also take into consideration if the understanding of the concept itself is equal by both the policy makers and the target population, as they state that misunderstanding here can also disrupt the outcomes. The main way in which this lack of agreement on the understanding of key definitions can severely disrupt outcomes of mobile money projects is by increasing uncertainty among the stakeholders and users, which is translated immediately as increased 'perceived risk' because this risk is mostly a combination of uncertainty and seriousness of outcomes (Andreev, Pliskin, and Rafaeli 2012).

Ideology: norms and values

The norms and values from the target population and involved stakeholders play also a key role in the success rate of public interventions, as if the real norms and values from the population differ strongly from the ones assumed by the policy makers, the results will most likely not be the expected ones (Schouwstra and Ellman 2006). Additionally, it seems to be critically important that the norms and values of the critical stakeholders with large power to influence the outcome of it align with the belief that the social value of the programme itself will be meaningful (Lashitew, van Tulder, and Liasse 2019). This means that it is required for the users and stakeholders alike to adhere to the interpretations and narratives of the policy makers about the programme, like the way in which it is supposed to create value for them.

Any strong divergence here between the users, stakeholders and the policymakers would also increase the 'perceived risk' due to an increase in uncertainty among the ones supposed to use the service. It then becomes easily understandable that Andreev et al. (2012) have

highlighted the importance of the one entity setting the service standards and rules to be objective.

Attitudes and Behaviors

A similar situation exists with regards to the attitudes and behaviors of the population to whom the public policy is supposed to benefit. If these are too different from what the policy makers had expected in the first place, the way in which they interact with the implementation and the expected results won't match the expectations (Schouwstra and Ellman 2006).

And here, the perceived risk of the system, as well as the users' and stakeholders own attitude towards IT systems play important roles in its success (Najdawi, Chabani, and Said 2021). On one hand this means that the users are required to have an welcoming attitude towards IT systems, otherwise there wouldn't exist any traction in the adoption in the first place. It is important to understand that this welcoming attitude means both the will to learn and use the systems after the value it brings about has been understood or discovered, and the trust that the robustness of the solution is enough to protect their funds. This second one is particularly critical given the fact that the implementation of such systems is usually targeting a financially excluded, and usually socioeconomically depressed part of the population. This would push them naturally to try to minimize any risk of losing money. In other words, the seriousness of the outcome of losing money for socioeconomically depressed populations, is so high that the sensitivity of the 'perceived risk' on the system will be tremendously high (Andreev, Pliskin, and Rafaeli 2012). This dynamic will play a massive role in casting the attitudes and behaviors of the users and stakeholders.

Institutional Framework Operationalization

Just as important as the conceptual framework, the institutional one addresses the broad formal structures that exist in a country and that have some level of influence on the public policy (Schouwstra and Ellman 2006), and these are just as the conceptual framework, influenced as well by culture, history and geography. It is important also to highlight that the authors stated that for each analysis or evaluation, the institutional framework needs to be

adapted to the particular programme or policy being analyzed, to be able to capture the essentials of the programme.

Political Setting

First, the political setting of the target area or population can be described as a key here, as power-political struggles or moves can usually lead to suboptimal policy choices (Schouwstra and Ellman 2006). Heyer and Mas (2011) also remark that poor political certainty and political risk in general is an important factor enabling investment in technologies like mobile money systems.

When analyzing what should be the fundamental political requirements needed for the success of the implementation of a mobile payments system, it makes sense to observe the characteristics of what is nowadays considered the most successful mobile payments system ever developed and implemented: the Kenyan Lipa na MPESA and its Tanzanian counterpart (Tyce 2020; Lashitew, van Tulder, and Liasse 2019; Della Peruta 2018; Camner, Sjöblom, and Pulver 2009).

Perhaps the most interesting and enlightening conclusion about what aspects of the political settlement allowed the success of the MPESA in Kenya comes from Tyce (2020) who found that the decentralization of the power over the company which provides the mobile money payments system, among the political elites in Kenya has played a major role in preserving the project in time. The company is viewed as a Kenyan company without any political or tribal affiliation (Camner, Sjöblom, and Pulver 2009), where no single political elite can enforce control over the decision making process. This perceived impartiality has protected it from political games that might threaten its existence.

This goes perfectly in line with what Koloseni and Mandari (2017) stated, that the perceived trust in the system seems to be more important for the success and adoption of mobile money systems, even more than costs themselves. If there would be large parts of the political settlement in Kenya advocating against the use of MPESA, the level of success would probably not be the same as it is today. This means that a valid requirement for the system to be successful probably would be the impartiality and perceived decentralization over its control by the political elites.

Socio-economic Setting

For the operationalization of the social and economic settings, the approach taken is to follow Schouwstra and Ellman's own operationalization (2006) and combine them together in one single point due to the very close interrelations between the social and economic conditions of target populations.

By tapping into what Heyer and Mas (2011) have described as the conditions creating a 'latent demand for transactions' among the target population, the relevant socio-economic conditions of the targeted group for the successful implementation of mobile money emerge nicely. They mainly point to the needed socio-economic configurations that would allow a demand for internal remittances to arise. This dynamic seems to surface around people migrating from rural areas to urban centers and sending money back home. The authors propose that identifying the thickest urban-rural remittances corridors, and maybe other types of opportunities like students getting support from their families or population groups paying or receiving governments related payments, can allow the implementation to be rolled-out around more fertile ground.

This goes hand in hand of course with the fact financial inclusion levels of the target population should be low. Valencia has highlighted low financial inclusion as requirements in a society for creating the adequate conditions for the implementation of a successful mobile money system (2015). This also comes up nicely from analyzing the factors mapped from Heyer and Mas (2011) under the term 'coverage of alternatives to mobile money'. They refer specifically there to the banking penetration levels, and also diffusion, reach and cost of other semi-formal channels like sending money through post offices. This coincides with the fact that cost effectiveness has been listed as one of the most important factors leading to electronic payments system adoption, as part of the perceived advantages of such a system (Özkan, Bindusara, and Hackney 2010). Additionally cost savings has been mentioned by Najdawi (2021) as one important reason for consumers to adopt an electronic payments system.

There are also other additional key aspects that could also be considered as relevant socio-economic conditions for mobile money implementations like the state of retail agents, and the penetration of the mobile networks themselves. They will be treated separately still

under the umbrella of this Institutional Framework, due to a fitter superposition with what Schouwstra and Ellman call the 'Stakeholders setting' (Schouwstra and Ellman 2006).

Institutions

The institutional setting refers to the public institutions interacting with the implementation. The most important institution by far for a mobile money implementation of any kind would be the one that dictates the rules for payment systems and the one that drives monetary policy as well. In most cases these are central banks, which have indeed played major roles as the main supportive regulatory institutions of successful mobile money implementations (Lashitew, van Tulder, and Liasse 2019).

The essential asset that a central bank can deploy to the network is definitively trust (Qasim and Abu-Shanab 2016). This trustworthiness of the organization offering the service is of paramount importance for the users of a new digital payment system according to Najdawi et al. (2021). Some, like Gefen et al. (2003) have concluded that trust is as important as the usefulness of the system itself. So, if it is seen through the lenses of helping to decrease the 'perceived risk' of the system by reducing uncertainty, then the trustworthiness of this institution is a cornerstone for the success of mobile money.

Moreover, the economic macro-environment usually managed by the central bank should be a stable one, so that a payment system built on top of that monetary setting would have some perceived usefulness. This has been described by Najdawi et al. (2021) as part of the factors impacting digital payments adoption.

In general, the role played by the central bank in geographies where mobile money has been a success story, has been a very supportive one of the private sector independent decisions and initiatives (di Castri and Gidvani 2014; Suárez 2016; Tyce 2020).

Legal Setting

Then, the legal setting is also a key one in the institutional framework. It is related directly to the existing laws and regulations interacting with the public programme. It has been clearly identified as well by Heyer and Mas (2011) as one of the factors for creating an enabling environment for a successful mobile money system.

Clear and enabling regulation is needed in order to avoid uncertainty but it also should not prevent private actors from leading the program, which is what Tyce (2020) identified as characteristics of a successful mobile money payments implementation: innovation should precede regulation. This reduction of uncertainty is directly linked to a decrease in perceived risk (Andreev, Pliskin, and Rafaeli 2012; Patil, Dwivedi, and Rana 2017).

Suárez (Suárez 2016) identified two types of regulatory frameworks immediately affecting mobile money implementations: the private banks-led referring, and the MNO-led. Banking-led regulation refers to a regulatory framework where the core ideas and intentions of the regulation are taken from the existing regulatory framework applied to commercial banks, while MNO-led refers to the situation where the regulatory framework to be applied comes mostly from the one governing MNOs operations. It has been highlighted that the MNO-led seems to offer much more success possibilities than the bank-led, due to the possible regulatory capture (Suárez 2016). What the author meant by that, is that banks usually don't make money from offering products to the lower socioeconomic classes and in fact given that the technology is actually running on different infrastructure, they are not very keen to spend money and time promoting or improving those kinds of services. It also means that some kind of regulations, specially related to KYC (Know-Your-Customer) and AML (Anti-Money-Laundry) are very likely to hinder the innovation process by adding a lot of friction to the user base growth (Suárez 2016). This has also been highlighted by Heyer and Mas (2011) as one of the main critical regulatory points affecting the mobile money system success, as it puts pressure not only on account openings of customers but also on the process for agents. As an example it is noted by the authors that the account opening process in Kenya is instantaneous, and there are no regulations in regards to who can become an agent.

In addition to this, juridical stability is required. Mainly if the system is being implemented directly as a government programme, the perceived risk of it could be directly linked to the legal stability of the government itself. The perceived risk of the system has been directly linked to the acceptance rate as a key component of the mix of factors affecting it (Najdawi, Chabani, and Said 2021). This means that the users need to believe that the legal framework for the implementation and continued operation of the system would be respected by the government, as otherwise it would be thought to be a risky system.

Stakeholders

Lastly, the stakeholders represent a factor that needs to be taken into consideration as well; the authors mention that it is important to understand and map what are the parties with interests at stake in a policy or programme (Schouwstra and Ellman 2006). Identifying those stakeholders provides an important clue on what could be the source of divergence between the expected outcomes and the real ones, it also can shed light into the reasons about why certain decisions are taken.

Heyer and Mas (2011) identified two main stakeholders classes that are so important for the success of the mobile money systems, that they have listed each class as a key factor for determining the potential of success of mobile money systems.

In the first place it is the network of retail agents of the area where the system is going to be implemented. The main function of retail agents is to provide the on and off ramps of the system to allow customers to deposit or withdraw physical cash from it. It's clear that because of this direct extraordinarily important operation of such a critical service (Mas and Radcliffe 2011; D. Evans and Pirchio 2014; Priyo et al. 2015), the network of agents is linked to both the perceived usefulness and performance expectancy of the mobile money implementation.

According to Heyer and Mas (2011) it is then important to understand the geographical reach and health of government retail networks like post offices as well of potential partners like pharmacies and other street-level franchises, and finally even the network of air-time resellers and the level of control the network operators have over them. It is also vital that these potential partners are able to properly handle the technical and liquidity related operations to being part of the front-line network.

The second type of vital stakeholders are the MNOs themselves. In this regard the main points are around the penetration of mobile services usage among the target population and the coverage of the network itself of the targeted geographical areas. In general, the project engagement level of the MNOs should be high, as they can market the service to their large customer base (Heyer and Mas 2011; Suárez 2016), and market competition between them can increase the odds of success (Suárez 2016; Lashitew, van Tulder, and Liasse 2019). Furthermore, it has also been found that when MNOs lead this type of projects, the

probability of success may be dramatically more favorable (Suárez 2016; Tyce 2020). This is why they are linked to a decrease in perceived risk when involved directly in the project, and a better performance expectancy. This can be noticed on some of the most successful projects in East African (Lashitew, van Tulder, and Liasse 2019).

3. THE CASE OF MOBILE MONEY IN ECUADOR

3.1 Background

Timeline and lifecycle of the Sistema Nacional de Pagos Móviles (SPM)

The article 302 of the Political Constitution of Ecuador states that the monetary policy has as one of its goals to provide the society with the necessary payment methods for the economy to operate efficiently. Furthermore, the article 303 establishes that the entity through which these policies will be orchestrated is the Central Bank of Ecuador (Banco Central del Ecuador) (BCE) (Asamblea Constituyente del Ecuador 2008). The BCE had also established that financial inclusion and modernization of the payment methods as part of its institutional and strategic visions (Junta de Política y Regulación Monetaria y Financiera 2014), and promoting financial inclusion was part of the National Development Plan of 2008-2013 (SENPLADES 2009).

Based on these legal frameworks, the Presidency of the Republic requested in May 2009 to the BCE to create and operate a National Mobile Payments System (SPM). During the year 2010 this project was declared to be, first of high national relevance by the BCE in February, and later as an Emblematic Project for the Presidency of the Republic in August (Consejo Nacional de Telecomunicaciones 2011).

In consequence, the BCE issued a regulatory framework for the SPM on January 2011 (Banco Central del Ecuador 2011a), and a market analysis for determining what would be the potential use cases and benefits of mobile money in the urban and rural areas of the country was procured in March 2011 by the BCE (Banco Central del Ecuador 2011b). The final document of this market research was delivered to the BCE in September 2011(Banco Central del Ecuador 2011c). Then, the BCE contracted, via public procurement, the software and hardware required for implementing the SPM in December 2013 (Banco Central del Ecuador 2013b).

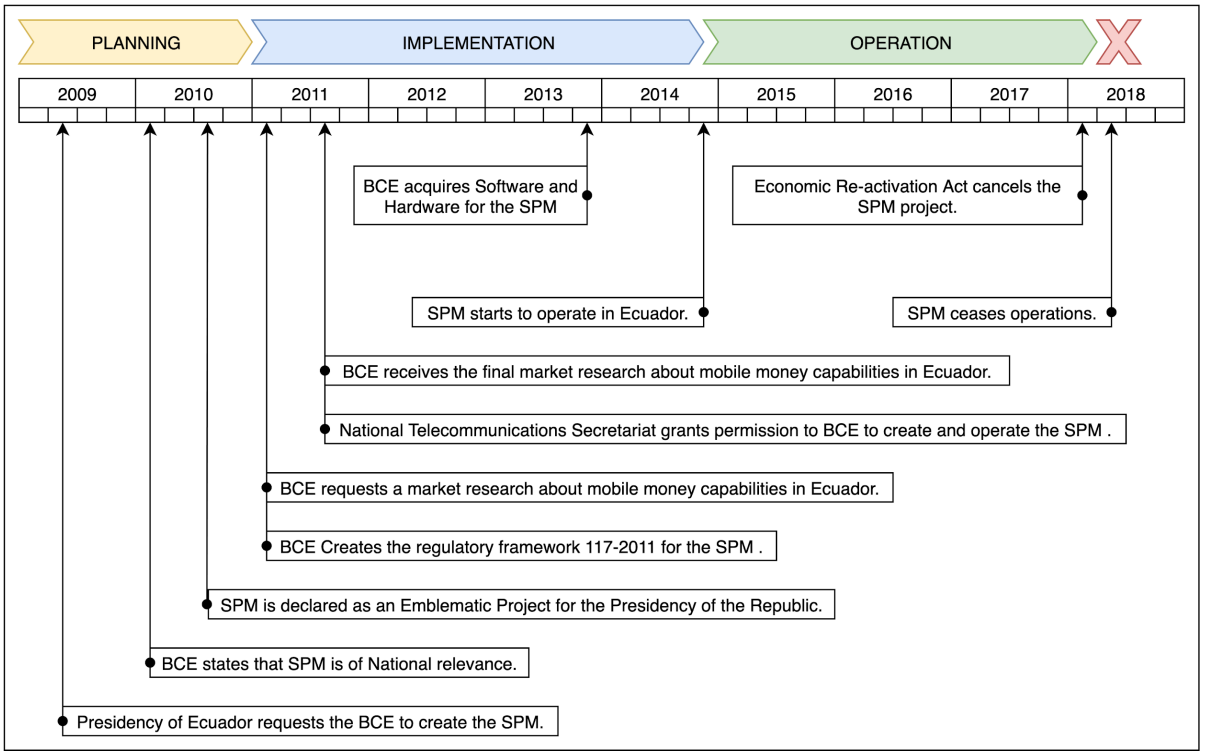
The operation of the SPM started with the collection user data in the end of 2014 (El Comercio 2014) and continued with a low profile for around 3 years (El Universo 2017) until the Economic Reactivation Act (Ley Orgánica para la Reactivación de la Economía, Fortalecimiento de la Dolarización y Modernización de la Gestión Financiera) from 2017 (*Ley Orgánica Para La Reactivación de La Economía, Fortalecimiento de La Dolarización Y Modernización de La Gestión Financiera* 2017) stated that the programme would be terminated in 2018, and the BCE officially ended the operations of the SPM on March 31, 2018 (Banco Central del Ecuador 2018b).

The aforementioned milestones have been organized in the following table (see Table 4) and graph (see Graph 2) for a better understanding of the programme timeline:

Table 4: Milestones of the National Mobile Payments System programme in Ecuador
Source: Compiled by the author based on official documentation

Milestone	Date	Document
Presidency of Ecuador requests the BCE to create the SPM	May 2009	Oficio No. 210-ST-MCPE-2009 quoted on Resolución TEL-592-15-CONATEL-2011 (Consejo Nacional de Telecomunicaciones 2011)
BCE states that the SPM is of national relevance	February 2010	Mentioned on Resolución TEL-592-15-CONATEL-2011 (Consejo Nacional de Telecomunicaciones 2011)
SPM is declared as an Emblematic project for the Presidency of the Republic	August 2010	Mentioned on Resolución TEL-592-15-CONATEL-2011 (Consejo Nacional de Telecomunicaciones 2011)
BCE creates the regulatory framework for the SPM	January 2011	Regulación No. 017-2011 (Banco Central del Ecuador 2011a)
BCE awards a contract for a market research about mobile money capabilities in Ecuador.	March 2011	Resolución Administrativa No. DA-069-2011 (Banco Central del Ecuador 2011b)
National Telecommunications Secretariat grants permission to BCE to create and operate SPM .	July 2011	Resolución TEL-592-15-CONATEL-2011 (Consejo Nacional de Telecomunicaciones 2011)
BCE receives the market research about mobile money capabilities in Ecuador.	August 2011	Acta de Entrega Recepción Definitiva de los productos relacionados con la Contratación Directa de Consultoría CDC-BCEQ-003-2011 (Banco Central del Ecuador 2011c)
BCE awards a contract for acquiring the software and hardware for the SPM.	December 2013	Resolución Administrativa No. BCE-140-2014 (Banco Central del Ecuador 2013b)
SPM starts to operate in Ecuador.	December 2014	Resolución 005-2014-M (Junta de Política y Regulación Monetaria y Financiera 2014)

Economic Re-activation Act cancels the SPM project.	December 2017	Ley orgánica para la reactivación de la economía, fortalecimiento de la dolarización y modernización de la gestión financiera (*Ley Orgánica Para La Reactivación de La Economía, Fortalecimiento de La Dolarización Y Modernización de La Gestión Financiera* 2017)
SPM ceases operations.	March 31, 2018	Resolución Administrativa BCE-GG-047-2018 (Banco Central del Ecuador 2018a)



Graph 2: National Mobile Payments System (SPM) Timeline

Source: Compiled by the author based on official documentation

3.2 Policy Analysis using the Extended Geelhoed-Schouwstra framework

Basic Geelhoed-Schouwstra Framework

Following the recommendations from the authors of the framework (Schouwstra and Ellman 2006), the first step is to fill the basic Geelhoed-Schouwstra model with the fundamental information of the public intervention (See Table 5).

Table 5: Basic Geelhoed-Schouwstra Framework filled with the information about the National Mobile Payments System (SPM) programme.

Source: Model from Schouwstra and Ellman (Schouwstra and Ellman 2006), information filled by the author after investigation and analysis.

Step Nr.	Basic Geelhoed - Schouwstra Framework Step Name	Information about the National Mobile Payments System (SPM)
1	**Goal**	The main goal of the government in Ecuador was to foster financial inclusion in the country and increase the access to financial services of the population of Ecuador (Moncayo and Reis 2015; Valencia 2015; Acosta, Guerra, and Viteri 2018).
2	**Objectives**	The main objective was to give citizens of the country, in particular those without access to the private banking system, the possibility to make transactions and pay for services electronically using time and space independent channels (Terán et al. 2016).
3	**Methods / Instruments**	The main instrument selected to accomplish the objective was to establish and operate a National Mobile Payments System (SPM) in Ecuador through the Central Bank. (Terán et al. 2016). This would be the first mobile money system operated by a central bank in the world (Moncayo and Reis 2015).

4	**Activities**	<u>Activities:</u> 1. Measure the level of financial inclusion in the country. 2. Create the regulatory frameworks needed for the system to exist. 3. Build or acquire the required software and hardware. 4. Inform the population about the service. 5. Promote its use among commercial and economic agents and users. 6. Create financial incentives for new users to start to use the platform. --- <u>Zero measurements:</u> 1. 40% of the population did not have access to financial systems. (Moncayo and Reis 2015) 2. There was no regulatory framework for the operation of a mobile payments system in Ecuador. 3. There was neither hardware nor software necessary for the implementation of a mobile payments system. 4. There was a lack of information about what a Mobile Payments System is. 5. No commercial agents are using any type of similar platforms before. 6. There was no incentives for using a mobile payments system --- <u>Target</u> ● Introduction of a mobile payments system. ● Creation of a regulatory framework. ● Attract a large user base to the system.
5	**Performances**	● 60% of the economically active population should have an active SPM account (Valencia 2015; Terán et al. 2016).

		○ Zero measurement: 0% as no system existed before. ● Financial inclusion indicator should improve by 10% (Valencia 2015; Terán et al. 2016). ○ Zero measurement: 40% (Acosta, Guerra, and Viteri 2018; Vistin, Tanqueño, and Villacis 2018)
6	**Evaluation**	● The National Mobile Payments System (SPM) was cancelled (Banco Central del Ecuador 2018a) ● The number of opened accounts was far beyond the expectation. (Vistin, Tanqueño, and Villacis 2018; Campuzano, Chávez, and Maza 2018) ● The original regulation about the National Mobile Payments System (SPM) was dropped. (*Ley Orgánica Para La Reactivación de La Economía, Fortalecimiento de La Dolarización Y Modernización de La Gestión Financiera* 2017) ● Financial inclusion did not improve by 10% in Ecuador. (World Bank 2018)

3.2.1 Description of the Extended Geelhoed-Schouwstra framework existing conditions compared to the fundamental requirements for the success of mobile money

The basic framework above describes the project, but it does not provide information on why the programme failed to achieve its goals. To answer this, the institutional and conceptual frameworks of the Extended Geelhoed-Schouwstra Framework should be used to assess the fundamental requirements compared to what was found on the ground (Schouwstra and Ellman 2006).

Institutional Framework Existing Conditions

Political Setting

Ecuador had at the moment of this policy implementation an extremely polarized political ecosystem, characterized by a climate of strong confrontation, accusations and mistrust among the main political forces in the country (de la Torre 2013; de la Torre and Ortiz Lemos 2016; de La Torre 2016; Becker 2013; Rivera, Hablich, and Berni 2018).

The existing political setting provoked a series of constant debates and arguments between the government and the opposition (White 2018) about the real scope of this project and the consequences for an economy with various unique conditions, like a lack of a national currency. The conflictive political environment needs to be added to the fact that the country risk had spiked in the years after the start of the operations of the SPM (O. A. C. Sánchez and Mero 2020), a fact that has been highlighted as detriment factor for the success of mobile money systems implementations (Heyer and Mas 2011).

Socio-economic Setting

According to what Heyer and Mas (2011) have described as the main factors for creating an existing ‘latent demand for transactions’ in a country, it is found that Ecuador fulfills indeed one of the main characteristics, that is a strong migration pattern from the rural areas to the urban centers of the nation (Serrano and Troya 2008; Royuela and Ordóñez 2018; Pontarollo and Segovia 2019). This pattern has in fact existed since over half a century before the SPM

programme started, with the two main urban centers of Guayaquil and Quito being the poles of attraction for internal migration processes (Serrano and Troya 2008). Although there has been a slowdown in recent years with the emergence of new medium size cities, the urbanization process has not stopped or reverted (Royuela and Ordóñez 2018; Pontarollo and Segovia 2019). If to this it is added the fact that financial inclusion had been historically and consistently low in the country until the time when the implementation was decided (Valencia 2015; World Bank 2018), the image of a very good brewing ground of 'latent demand for transactions' is unveiled.

However, this brewing ground had been attracting private commercial banking programmes of community banking networks for at least six years (Muñiz-Jaime, Loor-Carvajal, and Cedeño-Mendoza 2021) before the launch of the SPM programme (Jaime Carriel 2014; Zanzzi Díaz, Bonilla Richero, and Gaibor Vera 2015; Acosta Véliz, Coronel Pérez, and Bermúdez Gallegos 2018; Campuzano, Chávez, and Maza 2018). Thus, in the year when the SPM system was launched the number of community banking agents in Ecuador was well over 20,000 (Acosta Véliz, Coronel Pérez, and Bermúdez Gallegos 2018). These projects had been largely successful and had even been praised in the international arena as successful efforts for tackling financial inclusion in the country (Garzozi-Pincay et al. 2017). This situation created a robust 'coverage of alternatives to mobile money' that overall is detrimental to the success systems like the SPM (Heyer and Mas 2011).

Institutions

Historical factors, like the economic meltdown of 1999-2000 which was in part caused by the institutional weakness of the government financial and economic entities (Jácome 2004), which was still present in the collective mindset of the population. Thus the BCE was not perceived as a trusted institution at the time of the implementation and operation of the system (Zevallos and Idrovo Wilson 2017; Calderón de Burgos 2017; Campuzano, Chávez, and Maza 2018).

The Ecuadorian public opinion is very skeptical about any monetary policy that might sound like reversing or dismantling the dollarization of the economy implemented in the year 2000, which finally provided some level of monetary stability to the population (Aulestia Patiño 2017). The main reason for this aversion against the BCE was the severe economic crisis of

the end of the 90s that was the cause of the loss of the national currency and which led to the dollarization of the economy in the first place. The peak of that crisis is called the "bank holiday", where the savings of the entire population were frozen for several days (Beckerman and Solimano 2002; Anderson 2016).

In regards to the macroeconomic environment, the country had been experiencing a period of relative economic stability when the project was being planned and implemented, with the prices of oil being at all time highs and increased tax revenue, allowing the government to heavily leverage its national development plans (Villalba-Eguiluz and Etxano 2017; F. Sánchez and Polga-Hecimovich 2019). More importantly, the use of US dollars as the national currency had provided the economy with relative and unprecedented stability, as well as prevented governments from debasing the currency (Beckerman and Solimano 2002). Nevertheless shortly before the project started to operate, the prices of commodities (particularly oil) started to massively decline and a series of questions started to emerge about if the ultimate goal of the project was to create liquidity for a government that was not able to print money (Aulestia Patiño 2017; Zevallos and Idrovo Wilson 2017; White 2018). To make things worse for the credibility of the policymakers, this situation (the impossibility of issuing new money) had been highlighted before by officials as high as the president himself; as a huge problem and a major "lack of sovereignty" (TeleSUR TV 2014; Redacción Economía 2015).

Legal Setting

Legal frameworks for mobile money were non-existent before the project (Banco Central del Ecuador 2011a). The regulatory framework created for the operation of the project described a system in which the Central Bank was able to 'create' digital currency by adding it to the BCE's liabilities (Aulestia Patiño 2017; Zevallos and Idrovo Wilson 2017; White 2018).

The Ecuadorian government at the time had been accused of being an authoritarian regime (de la Torre and Ortiz Lemos 2016; de La Torre 2016), which in addition to the heavy polarization of the political landscape created the perfect breeding ground for mistrust in the proposed legal framework due to the lack of clarity regarding the 'creation' of liabilities on the Central Bank's balance sheet, which would imply a de facto violation of the dollarization. From the historical perspective, a series of consecutive and recent violations of legal and

even constitutional frameworks in the recent history of the country (Mejía Acosta and Polga-Hecimovich 2011; Kennemore and Weeks 2011) were still fresh in the collective mindset of the population. This lack of a robust regulatory framework in regards to the Central Bank process of 'creating' electronic money balances created a large regulatory/legal uncertainty that is not favorable for projects like this one, according to Heyer and Mas (2011).

One additional issue found was the restrictiveness itself of the regulatory framework, which gave a centralized control of the system to the Central Bank and doesn't even fit in the traditional polarization proposed by Heyer and Mas (2011) between banking-led and MNO-led regulatory frameworks. The main cause for this was the novel approach taken by the government of Ecuador, which in fact made the SPM the first government-led implementation of a mobile money payment system. This probably made the regulatory system look more similar to a banking-led one instead of MNO-led, diminishing the success possibilities of the implementation (Suárez 2016).

Another important point regarding the regulatory framework that was remarked by Heyer and Mas (2011) is the one involving the KYC process for the account opening for end users. This was actually found to be frictionless in terms of regulatory requirements for mobile network users, as it could be completed directly from any mobile phone regardless of if it was a smartphone or not (SENPLADES 2016).

Stakeholders

The existing conditions of the stakeholders are focused on the major two groups described by Heyer and Mas (2011), the retail network and the mobile network operators.

In regards to the retail agent network, from the beginning it was clear that a major barrier to the implementation was the decision of cutting the private commercial banking network off by leaving them without much economic incentives to participate in the implemented ecosystem (Campuzano, Chávez, and Maza 2018). It is also important to note that the government network of postal services was not good and was prone to a lot of inefficiencies during this time (Pérez 2022). Additionally, it was found at the time that the willingness to actually accept payments via this channel by markets and other street-level commerce outside

of the two main urban centers of the country was insignificant (Campuzano, Chávez, and Maza 2018).

The existing problems of the network of retail agents was not contained only to the missing pieces like traditional financial institutions or the government related retails like postal services, the participant retail network was actually found to be more fragile than expected. For example, it was measured during operational testing almost two years after the launch of the service that less than 40% of the agents selected for the test were actually using the SPM, and less than 15% were actually operating as on- and off- ramps to the system (SENPLADES 2016). The geographical distribution of the accessibility to the network via the retail agents was very similar to the situation of the markets street-level commerces acceptance of SPM payments, with some zones far from the large urban centers of Guayaquil and Quito reporting transaction failure rates as high as 95% (SENPLADES 2016).

One of the reasons highlighted for the low participation of the retail agents, was the lack of direct economic incentives obtained from the operation of the SPM system. And indeed, it was found that from the several retail networks that partnered with the system, only one had a transaction success rate of more than 30% (SENPLADES 2016).

On the other hand, mobile networks penetration in the country had been among the highest in the region (Zanzzi Díaz, Bonilla Richero, and Gaibor Vera 2015; Valencia 2015; Terán et al. 2016). The project received a green light in the first place thanks to this extensive coverage of the cellular network in the country. So in the end, it is the social acceptance of mobile networks the main enabler to have chosen this particular technology for the Ecuadorian case. Its ubiquity and low additional marginal implementation costs were considered of course as part of the fundamental pillars of the success of this technology (Suárez 2016; Lashitew, van Tulder, and Liasse 2019).

However, large private telecommunications companies did not participate in the planning and development of this project. They have distrusted it since its inception due to the ambiguity of the regulatory frameworks and general mistrust in the government institutions (Campuzano, Chávez, and Maza 2018; White 2018). Further, they were excluded from the beginning and the BCE was granted in the regulatory frameworks a monopoly for the central administration of the system, effectively cutting off the incentives for private corporations to

lead the implementation and socialization of the new payments system (Terán et al. 2016).

Conceptual Framework Existing Conditions

Theories and assumptions

The Ecuadorian officials assumed that the SPM system would be a relevant channel for bringing about higher financial inclusion in the country. It was also supposed that this financial inclusion will come from users selecting this system above any other for being connected to the financial system, particularly because of the supposed conveniences and lower costs of a system created and managed by the government only (Valencia 2015).

The assumptions that the cost efficiency of the SPM would make it succeed did not materialize. Even though the SPM had very low and competitive fees and some tax benefits to its users, it failed to attract a large enough user base (Campuzano, Chávez, and Maza 2018; White 2018; El Universo 2017; Rivera, Hablich, and Berni 2018). The system itself achieved very competitive prices on the ground, as it was a government system not intended to create profit, but to provide a public service. (Valencia 2015)

Definitions

The lack of mobile money systems operating in the country before this one was introduced meant that a clear definition of electronic/mobile money was needed. Especially given the intrinsic characteristics of the Ecuadorian monetary system, where the US dollar is the legal tender and obviously Ecuador is not allowed to issue US dollars.

There was the supposition that these definitions provided by policymakers and added to the regulations would be understood and accepted by the population. However there were a lot of doubts in regards to what the system actually was and how it worked (Morales and Machado 2017; Proano and Rodriguez 2017). This was the target of constant arguments and debates from the political opposition in the public opinion (Calderón de Burgos 2017). These doubts were also highlighted as a continued and unaddressed problem by the government evaluators themselves (SENPLADES 2016). Therefore, in essence there was never clarity regarding how the electronic money would be backed, due to Ecuador's lack of national currency and issuance capability (Aulestia Patiño 2017). This in the end meant that there was an important

divergence between the policymakers, and the general public and stakeholders, on how the main definition of this system was to be interpreted.

Ideology: norms, values

Since the project inception there was a huge misalignment of ideology between the policymakers and an important part of the population and stakeholders, represented by the opposition political parties. The policy makers took a very strong left leaning stance, implying that this government developed system was good enough without the strong support of the private sector (de la Torre 2013; de la Torre and Ortiz Lemos 2016). This means that in the Ecuadorian case there was an implicit ideological assumption that the system does not need the private sector to play any key role in its administration or planning, and that this exclusion would not have any negative impact on the adoption of the system (Valencia 2015). This created a fundamental ideology divergence between the policymakers, many users, and critical stakeholders like the retail agents, and MNOs.

It was clearly evidenced when according to the users and other stakeholders surveyed during the operational tests of the SPM, the lack of support from the private sector seems to have been raised as a critical obstacle to the operational performance of the project (SENPLADES 2016) itself.

Attitudes and Behaviors

What has been described until here had a strong influence on the outcomes and how the system was perceived by the users and stakeholders.

It is summarized on the SENPLADES operational evaluation of 2016 (SENPLADES 2016), that found that perceived risk of the programme was high showing that users did not accept all the narratives presented to them. Campuzano et al. (2018) also found that risk perception was one of the main problems affecting the implementation. User's attitude towards the SPM was mostly of wariness, which in the end meant that the most common behavior seen was of avoiding the system at all costs. As for the stakeholders, due to the finding that there were not enough high incentives for learning how to operate the network and provide service to the users (SENPLADES 2016), the behavior was of rejection and avoidance as well.

4. FINDINGS AND DISCUSSION

Interview

As a validation of the findings of the previous analysis, an interview was conducted with Gabriela Calderón de Burgos (GCB) who is an Ecuadorian Research Associate at the CATO Institute in Washington D.C., editor of the Spanish-language version of the institute website, and a regular columnist at the Diario El Universo, Ecuador 's largest newspaper (CATO Institute n.d.). She has been chosen mainly for two reasons. Firstly, she is a prominent political-economical policy analyst in Ecuador, where she is constantly invited to the media (*Ibid.*). And secondly because she has an international working profile and no government or political affiliation involvement in Ecuador during the SPM time, allowing her to assess findings more independently and objectively: a necessity given the current strong political polarization that continues to plague Ecuador at the time of writing this work.

During the interview she was presented with the settings findings and was asked to share her stand and comments on them.

Findings and Discussion

This constant state of conflict and propaganda on the political setting of the country between the government party supporting the programme, and the entire opposition being drastically against it had severe consequences on the trustworthiness of the project. The situation is almost completely the opposite of what had been seen previously in Kenya, where the system was not controlled by any major political power. This lack of trust became so evident that it was also captured by the evaluation of operations of the system performed by the government at the time. In it, they found that by the year 2016, 85.3% of the population had heard about the service but had not used it. And that almost a third (27.6%) of that 85.3% did not do it because they did not trust the government at the time (SENPLADES 2016).

During the interview with GCB, she agreed that there was an extremely polarized political environment, with a large part of the population opposing the government so strongly that this had a direct influence on the implementation. The main effect was probably due to the process of radicalization of user's political views, where support for the ruling political party

translated into support for the SDE system, and support for the opposition translated into lack of support for the SDE implementation.

On the socio-economic setting, it has been found in the previous analysis that despite the fact that the country had a demography characterized by historic low financial inclusion levels together with a strong migration from rural areas to the urban centers that created a 'latent demand for transactions', the main obstacle was that the private banking sector had been already capitalizing on this same situation by investing heavily in community banking programmes that were already highly developed by the time the government launched the SPM. This extended and highly developed 'coverage of alternatives for mobile money may have acted as one of the larger obstacles preventing the success of the SPM in Ecuador by sharply decreasing the perceived usefulness of the SPM network.

In this regard, GCB agreed during the interview that mobile networks penetration was high and financial inclusion indicators were low, creating what can be considered a fertile ground for mobile payments systems. She also agreed that the private banking communal banking initiatives were already too big to be ignored and that important sectors of the population would probably prefer them instead of the SPM.

The institutional arena seems to have been one of the major contributors to the failure of the system according to what has been found in this work. This is because at the center of the criticism about the real intentions of the programme was the BCE. The collapse of the national currency almost 15 years before was still present in the country collective memory; and the fear of the BCE was concluded as one of the main reasons for the users to not recommend the use of the system to others, and to not use it themselves (SENPLADES 2016). So a potential tremendous overestimation of the BCE credibility among the policymakers is unveiled by the previous analysis as a major contributor to the harshly increased perception of risk among the users and stakeholders. This perception of risk was sharply accentuated during the release of the programme by the macroeconomic issues described in the analysis, and according to the findings seem to have raised a lot of doubts about the real objectives of the BCE.

This is something that GCB agreed with, highlighting that there was very low to almost no trust in the government institutions from a large part of the population, particularly on the

ones commanding the monetary policy. There was no trust in the financial system. There was no institutional capital in the BCE since the 1999-2000 crisis. She also noted during the interview that the government had been in fact in fiscal problems due to high spending since around the year 2014, and this made users and stakeholders very suspicious of the real intentions of the programme. She commented that dollarisation had created economic stability, and the new system was seen as a potential critical threat to it by many people.

Perhaps the other very important factor found in the analysis affecting the perceived risk on the system, besides the lack of institutional credibility, was the legal framework created for the operation of the SPM. There was no clear and shared definition of what mobile money is in Ecuador, adding to the fears that it could mean the ability of the BCE to issue new currency. This was compounded by the leftist government long and publicly advocating for the necessity of issuing currency, which as described in the previous section ended up creating a breeding ground to increase the perception of risk.

In this aspect GCB agreed during the interview that there was very little clarity on how the issuance of the electronic money will work. She also noted that a more robust framework to protect the dollarized economy was pushed by the political opposition at the time. But according to her, in the end, the main question remained unanswered for the oppositors of the system: If it was not a new currency issuance, why were the private banks left out? Why was it a BCE monopoly?

This previously described exclusion of commercial banking institutions from the planning, administration, and commercialisation of the system created irreconcilable differences between the BCE and these important economic agents. This was a direct consequence of the socialist political-economical ideology of the government, as the state was often called to play a central role in almost every aspect of Ecuadorian society (de la Torre and Ortiz Lemos 2016; de La Torre 2016).

However, this probably pales when compared to the issues found in the analysis to be caused by the exclusion of the main private MNOs. These players are so important for the health of mobile money environments that, as it has been exposed here, the projects led by this type of stakeholders have more success chances than any other. The increased perceived risk of not seeing the main MNOs engaged with the SPM, is also added to the decrease of performance

expectancy from not having the technology enablers actively participating in the project. Together with the exclusion of financial institutions, this placed the SPM in a very vulnerable position.

The ideological dogmas described in the analysis also affected the other main type of stakeholder: the retail network agents. They were not participating in SPM operations as expected (SENPLADES 2016). As discussed, the severe lack of economic incentives for these entities kept them out of the system, damaging the perceived usefulness of and performance expectancy of the network. All this reveals an evident and catastrophic lack of synergies between the government and the private sector stakeholders, from which most of the problems that would end up influencing the attitudes and behaviors of the users mostly originate.

Here too, GCB agreed with the findings that key private actors were completely left out of the planning, development and implementation of the system. She pointed out that the socialist government of the time pretended that the state would run its operations, by granting a monopoly over it to the BCE, which in the end contributed greatly to the severe deterioration of the population and stakeholders attitudes towards the SPM.

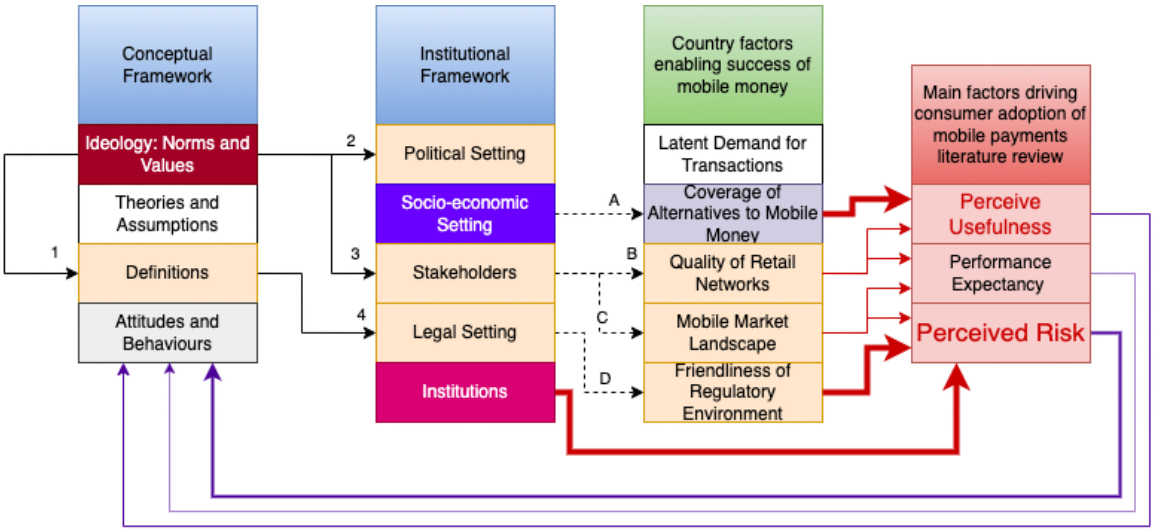
As discussed in the previous section, the politicalization and strong ideological background of the policymakers of the project seem to have poured into many of the decisions taken when implementing the SPM. Limiting the participation of critical private stakeholders, the lack of clear definition for electronic money and consequent weak regulatory framework, and the increased level of political tension in the country all originate from the ideological background of the people leading this public policy. Probably this unchallenged onset materialized because the ruling party controlled both the executive and legislative branches of the government, which granted them freedom to plan and execute the national plans and projects like the SPM without too much resistance or questioning. However, as stated in the analysis, in spite of this tremendous political power and the fact that the government in turn had constantly come victorious on the ballots due to a state of permanent political campaign (Conaghan and de la Torre 2008), the target population showed that they would not blindly follow the government ideologies if they felt that their own financial security was to be jeopardized through a risky payments system.

In this aspect GCB was clear to confirm that the strong socialist ideology of the ruling party caused much of the problems which contributed to the general distrust in its success and reliability.

In the end, it was found that the main theory and assumption of this project, that this system would bring about economic inclusion, was a tremendous miscalculation.

The analysis of the conceptual and institutional frameworks provided some initial clarity on the dynamics of the problems that plagued this project. From the analysis done in this work a picture (see below Graph 2) of the situation emerges, and provides some guidance for future and further research on this topic.

Graph 2: Dynamics of detected problems
Source: Compiled by the author based on the work of (Schouwstra and Ellman 2006), (Heyer and Mas 2011), (Patil, Dwivedi, and Rana 2017) and (Mondego and Gide 2018)



Dynamics of detected problems

The following dynamics emerges as a the possible chain reaction plaguing the system.

Strong socialist ideology on the policymaking side, diverging from many users and stakeholders.

It influenced —1→ The lack of clarity when interpreting definitions of what mobile money is.
Which then influenced —4→ The weak legal framework created for the SPM.
Which translated into ---D-→ A confusing regulatory framwork.
Which → Massively increased the perceived risk
Which →

—2→ The climate of strong political confrontation in the country.

—3→ The decision making process in regards with the stakeholders of the system.
Which translated into ---B-→ Lack of economic incentives for the retail network.
Which → Decreased the perceived usefulness.
Which →
→ Decreased the performance expectancy.
Which →

---C-→ Mobile operators excluded from planning and administration.
Which → Decreased the performance expectancy.
Which →
→ Increased the perceived risk.
Which →

Influenced the attitudes and behaviours of the users and stakeholders

Lack of understanding or underestimation of the socio-economic setting

Which translated into---A-→ No understanding of the communal banking networks impact on the project.
Which → Massively decreased the perceived usefulness.
Which →

The credibility of the institutions leading the project was overestimated.

Which → Massively increased the perceived risk
Which →

CONCLUSIONS

The National Mobile Payments System of the Central Bank of Ecuador failed to achieve the main goal it pursued which was to improve the level of financial inclusion in the country. The entire programme was canceled, all accounts were closed, and even the regulatory framework in its original nature was abandoned by the Ecuadorian government.

The government's own and only operational analysis of this programme gave some light hints without addressing more broadly what were the mechanisms at play behind this massive failure. This is where this work fits, as an initial exploration of those factors. By digging more on the causes of this public policy debacle, it intends to extract the initial learnings to prevent the same mistakes in the future, and to encourage more analysis. Due to the ongoing global digitalisation trends, this immediately becomes a topic of high relevance for the future of electronic payment systems in Ecuador and probably the region.

To accomplish this initial exploration, the Extended Geelhoed-Schouwstra Framework was chosen as the system to identify the factors that seem to have affected the outcome of the National Mobile Payments System in Ecuador. According to the discussion presented here it seems that the main mechanisms of failure were the severe ideological gap between policymakers and key stakeholders pouring into many decisions, the extremely weak and overlooked institutional trust in the Central Bank of Ecuador due to historical factors, and the underestimation of the private sector initiatives that were tackling the same problems that the SPM programme was supposed to solve. These ended up increasing the perceived risk significantly, and decreasing the perceived usefulness of this system. Both effects then casted the attitudes and behaviors observed on users and key stakeholders.

These findings seem to suggest that risk aversion plays a key role around the success of government led mobile money systems and that the Ecuadorian government will need to take this into account if ever wants to successfully implement it. It also aligns with the existing evidence that such a system has better chances of being adopted when led by the private sector actors, particularly the MNOs.

This work has provided some initial exploration into some of the factors affecting the implementation of mobile payment systems through the analysis of the Ecuadorian case. It has achieved the goal of opening the path for more research to come and clarify the mechanics in which these factors interact with this kind of technological public programme.

On the one hand, it would be important to understand how a possible political-ideological capture of electronic payments systems affect their success. On the other, it would also be relevant to gain a better understanding of how state centralisation of the operation of payment systems affects the perception of risk, and what impact it might have on its adoption.

Lastly, it is of high interest to dig more into what is the relation between fiat currency collapses and the population's trust in implementations of government led payment systems afterwards. This has become of special interest in the second decade of the 21st century, as inflationary and hyperinflationary episodes are popping up around the globe. Furthermore, it will be of special interest to the government of Ecuador to better understand how to work around this issue, if a new attempt to introduce such a system is ever made from the public sector.

In the end, a better comprehension of how these non orthodox factors interact with adoption rates of new payment systems introduced by public programmes can also enhance the opportunities for such implementations to succeed in Ecuador and other geographies.

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