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THE RETENTION OF HIGHLY SKILLED RETURNEES IN MOZAMBIQUE: An Institutional Approach

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This research combines Institutional Rational Choice (IRC), the Institutional Analysis and Development (IAD) framework, Return Migration theories and International Development theories to understand how Mozambican highly skilled returnees (HSRs) interact with the institutional setting in the home country while pursuing their personal aspirations. Institutional setting in this context is defined as a multidimensional space of factors – institutions plus other contextual variables co-evolving as they interact with each other – in which HSRs try to mobilize resources over time towards their personal goals. Factors impose elements of order in the context where they operate and they affect the distribution of preferences, incentives, and outcomes. A better understanding of the constraints imposed by these factors/elements on HSRs' behavior and personal satisfaction could allow governments in extremely poor countries to prioritize interventions for institutional development given the very scarce resources available. These could have the interacting effect of increasing the capacity of HSRs to contribute to the development of Mozambique and provide positive signals to encourage the return of more.

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THE RETENTION OF HIGHLY SKILLED RETURNEES IN MOZAMBIQUE:
An Institutional Approach

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ABSTRACT

This research combines Institutional Rational Choice (IRC), the Institutional Analysis and Development (IAD) framework, Return Migration theories and International Development theories to understand how Mozambican highly skilled returnees (HSRs) interact with the institutional setting in the home country while pursuing their personal aspirations. Institutional setting in this context is defined as a multidimensional space of factors – institutions plus other contextual variables co-evolving as they interact with each other – in which HSRs try to mobilize resources over time towards their personal goals. Factors impose elements of order in the context where they operate and they affect the distribution of preferences, incentives, and outcomes. A better understanding of the constraints imposed by these factors/elements on HSRs' behavior and personal satisfaction could allow governments in extremely poor countries to prioritize interventions for institutional development given the very scarce resources available. These could have the interacting effect of increasing the capacity of HSRs to contribute to the development of Mozambique and provide positive signals to encourage the return of more. Hypotheses around three specific types of factors/domains – professional opportunities, information and communication technologies (ICTs), and governmental programs – are tested. The methodology applied includes (i) a cross-sectional purposive sample of Mozambicans who recently returned to the home country after obtaining post-secondary education abroad; (ii) an online survey complemented with field interviews; (iii) bivariate analysis; and (iv) multivariate model-building. The results demonstrate, first, that all three factors tested are associated with retention. This finding supports the IAD's argument that new policies and institutions can be devised to shape those other contextual variables. Second, this research demonstrates that the degree of this association differs across factors. Third, this research shows that the degree of association also differs from urban to rural settings. Moreover, the first and foremost role played by professional-related elements in the capacity of a country to retain some of its most well-educated citizens supports previous literature. Further, this research supports the argument that institutional development precedes economic development. Also, this research does not find empirical support for the hypothesis that Mozambique has been facing increasing levels of the brain drain. In addition, the "Satisfaction With Life Scale" (SWLS) proxy for retention is among all proxies tested the one mostly associated with the institutional setting in the home country. More specifically, the possibility of achieving personal goals is the most important component of one's overall life satisfaction. Finally, there is a temporal "ripple-effect" on the association (i.e., progressively weaker) of the current institutional setting both with past and with the possibility of future behavior. The implications resulting from these findings are discussed and classified into three categories: (i) theoretical; (ii) practical for policy; and (iii) for future research.

Key Words: Highly Skilled migration, brain drain inversion, patterns of reintegration, institutional development, Mozambique

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THE PROBLEM

Introduction

The ultimate explanatory variable of development is the education level of communities and nations (Fukuyama 1992; Huntington 1993). More specifically, Fukuyama (1992) argues that knowledge is "the key to the directionality of history" (ibid., p. 72). This is so because "science regulates the direction of economic development by establishing a constantly changing horizon of production possibilities" (ibid., p. 77). Moreover, closely intertwined with this expansion of the technological horizon is an increasingly rational organization of labor favored by "an adequate supply of skilled labor" (ibid.).

As part of their continuing struggle with persistent, pervasive poverty, African countries have systematically been facing rates of emigration of well-educated citizens increasingly larger than the corresponding rates of immigration (Carrington and Detragiache 1998; Docquier and Marfouk 2004). This condition has been characterized as the "brain drain" phenomenon. Some 130 million people worldwide are living outside the country of their birth, and "in the context of globalization the number of migrants is generally presumed to be growing" (Black et al. 2003, p. 5). The authors also estimate that 30 percent of the most highly educated African nationals, defined as possessing a post-secondary education, live outside their countries of origin.

Although extreme poverty fell globally from 1.5 billion persons in 1981 to 1.1 billion in 2001, sub-Saharan Africa was not part of this positive development (Chen and Ravallion 2004). This region was the only one facing a dramatic increase – it doubled – and is currently the home of approximately 30 percent of those 1.1 billion.

The World Bank (WB) defines "extreme poverty" as living on less than US$1 per day (PPP)[1]. In general terms, and within the context of this research, "persistent extreme poverty" in Africa refers to situations where successive generations of families have not succeeded in increasing their living standards above that threshold in the post-independence period (Carter and Barrett 2006).

Mozambique has been facing increasing levels of the brain drain phenomenon with disproportionate levels of less educated living in Mozambique. From 1990 to 2000, (i) the percentage of educated emigrants to total population (25 years plus) in the country quadrupled from 0.04 percent to 0.16 percent; (ii) the percentage of educated emigrants to total educated population more than doubled from 36.26 percent to 82.24 percent (nearly 45 percent of all university-graduated Mozambicans live abroad), meaning that Mozambique has been increasingly losing its highly skilled, educated human resources; and (iii) the percentage of educated emigrants to total emigrants quintupled from 3.57 percent to 17.73 percent, suggesting that emigration opportunities were increasingly accruing to the most educated members of society, to the disadvantage of the less educated left at home (Docquier and Marfouk 2004)[2].

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[1] Purchasing Power Parity (PPP) theory suggests co-movements of changes in the exchange rate with the inflation differential of two countries. The average U.S. citizen earned $127 (PPP) per day in 2009 (IMF 2009).

[2] World Bank. Database on Brain Drain at http://go.worldbank.org/9YZ0EKSMT0.

The basic problem is that the welfare of nation and those left behind could readily diminish because the social return to migrants' education exceeds their private returns. Moreover, given that education is often partly publicly financed, the brain drain phenomenon has been recognized to be injurious to most African nations (Beine et al. 2001).

Countries of origin have to create incentive mechanisms to encourage their most well-educated and skilled citizens to return and remain in the home country, so they can more actively participate in its economic-social development. Within this context, it is important to understand the returnee's motivations, behavior, and patterns of reintegration (Patinkin 1968; Thomas-Hope 1999; Dustmann and Kirchkamp 2002; Cassarino 2004)[3]. This process of return and retention of highly skilled citizens was a fundamental means for the development of some Asian nations in the 1960s, 1970s, and 1980s, such as Japan, Singapore, Republic of Taiwan, and Republic of Korea (Iredale and Guo 2001).

Patinkin's "Nationalist Model" of development specifically addresses the relationship between brain drain and opportunities for scientific activities in the home country. This author's emphasis in on "what the underdeveloped countries can themselves do to diminish the brain drain" (p. 95). This model encompasses three interrelated aspects: (i) the countries must encourage their trained scientific personnel to identify with the development of the country; (ii) the countries must show that these people can indeed fulfill a vital role in that development; and (iii) the countries must provide at least minimally for them to fulfill their scientific aspirations.

Algerian President Abdelaziz Bouteflika puts it this way: "We must find a way to reduce the brain drain. It is an open wound that infects our nation" (Nguyen 2006). The highly educated and skilled "are the very ones that Third World countries can least afford to lose" (Todaro 1985, p. 123). Referring to diasporas and returnees' initiatives, Riddle and Nielsen (2011, p. 23) observe "countries of origin should identify the key obstacles investors face."

Rodrik and Wacziarg (2005) addressed the potential role of returnees to improve a country's capacity to induce change and foster development. In their words, "the returnees would also bring home far more benefits than their wage alone: experience, entrepreneurship, funds to invest, and an increased work ethic" (p. 151). However, to make sure these benefits are realized, states must generate incentives for the workers to return and stay (Brown 2000).

Rodrik (1996) examined the clear success of Republic of Korea and People's Republic of China in the second half of the 20th century, in particular how "the sharp increases in physical and human capital as well as in labor-force participation account for virtually all the rise in output" (p. 13). Further, Cerase (1974, p. 259) argued more than 30 years ago that the returnee's "will, his means, and his belief are new and, strictly speaking, innovative." The returnee "aims to disrupt the old equilibrium in the local power structures" (ibid., p. 258). Iredale and Guo (2001, p. 1) agree, albeit on a more diffuse national context: "A study on the return migration of Yemenis from Saudi Arabia found that

[3] The term "development" here used refers to variations on the United Nations' (UN) Human Development Index (HDI) that measures a country's average achievements in three basic dimensions of human development: life expectancy, educational attainment, and adjusted real income ($PPP per person).

upon their return, many people invested in small business such as convenience stores, but there was no analysis of the processes or of the interaction between the returning migrants and the society at large." They call for study of the interaction of personal networks with contextual factors and they write, "there has been little work on impacts" of highly skilled returnees (ibid.). Harvey (2009, p. 2) concurs, "there has been a disappointing level of analysis of highly skilled migrants returning to their home countries."

The highly skilled returnee (HSR) interacts with the context at home because s/he is motivated to pursue personal goals that guided the return (Iredale and Guo 2001; Doreian 2006)[4]. These personal goals can be multiple, of any kind (e.g., finding a job, creating a company, having land, supporting the family), and change over time. Analyzing the factors shaping highly skilled returnees' adaptive inclination (e.g., what are the barriers, constraints, difficulties, favoring factors) should shed light on the reasons for which their patterns of reintegration at home and their capacity to adaptively invest their skills in the local context differ.

Complementarily, knowing how HSRs interact with the indigenous contextual structure to pursue their personal aspirations will inform governments about how to prioritize development policies towards HSRs' retention. These could have the interacting effect of increasing the capacity of HSRs to contribute to the development of Mozambique and provide positive signals to encourage the return of more.

Research Focus and Question

The return and retention problem just described emphasizes three critical features. First, it emphasizes the broad socio-economic, political, and cultural structure which HSRs are embedded in (i.e., the contextual factors of Africa and, more specifically, of Mozambique). Second, it emphasizes the HSRs' patterns of reintegration through which personal goals in Mozambique are pursued (i.e., HSRs' decisions and behavior in the home country). Lastly, it emphasizes the relationship that can be established between contextual factors and behavior.

Even though this research takes HSRs' return as a given and therefore not being directly about factors influencing that decision, factors influencing retention (e.g., job opportunities, education system, dynamic markets) may also encourage more to return[5]. This research proposes to address a single research question (RQ), which is broken down into four hypotheses introduced throughout the literature review (i.e. what factors affect retention of HSRs in Mozambique?)

Research Relevance

It is relevant from a conceptual point of view to study and bridge persistent poverty with contextual factors and HSRs. The trend to move from a macroeconomic to a more micro analysis of social,

[4] "HSRs" here used refers to those who have returned from overseas after earning an advanced degree (i.e., post-secondary education).

[5] Within the context of this research "retention" does not imply confinement of HSRs' operations to Mozambican geographic boundaries. It implies that HSRs have their residency in Mozambique but it includes situations of "brain sharing" (i.e., situation in which activities are carried out in and out of Mozambique) (Saxenian 2005).

political, and economic groups and individual behaviors has been defended by several authors that argue that studying social structures in discrete settings is a key to understand political and economic change and development (Granovetter 1973, 1985; Williamson 1985; Ostrom 1990, 2008).

This research is also relevant from a theoretical perspective. On one hand, it is a theory-exploring research viewed through four hypotheses; on the other, it bridges four different theoretical fields – Institutional Rational Choice, Return Migration Theory, International Development theories, and Happiness Studies – with the goal of explaining which are the factors most likely to affect retention of HSRs.[6] According to Cassarino (2004, p. 253) "the growing diversity of migratory categories – ranging from economic migrants to refugees and asylum seekers – necessitates a distinction between the various types of returnees". This author adds, "we still need to know who returns when, and why; *and why some returnees appear as agents of change, in specific social and institutional circumstances at home, whereas others not*" [emphases added]. Sun (1999) concurs that previous research on returnees has focused on the process of their return to the origin country, while how they were re-integrated as active members of society after their return has been assumed to be "problem free".

It is also salient from a policy-making standpoint to study and bridge persistent poverty with contextual factors and HSRs. The phenomena of technological, social, political, and economical globalization increases peoples' and societies' awareness of events and realities happening globally. On one hand, governments of developing countries are becoming increasingly exposed to the international community and to their own people, which raises new issues of political efficiency and accountability. On the other hand, governments and non-profits from more developed countries face an increasing pressure from their citizens and stakeholders to improve the efficiency of their foreign aid policies. For example, Hulme and Shepard (2003, p. 3) write:

> In the last few years national and international commitments to poverty-reduction have reached levels that could barely have been imagined ten years ago. Most world leaders have committed their countries to ambitious targets for reducing global poverty, national governments are drafting Poverty Reduction Strategy Papers (PRSPs), and international agencies are focusing their attention on mobilizing resources and influencing policies that will provide pro-poor growth and alleviate poverty.

Contrary to what was the aspiration of the UN's Millennium Development Goals (MDGs)[7], extreme poverty will not be eradicated by 2015. Therefore, we ask, on what terms, and under which principles and guidelines, will the international agenda on poverty for the period after 2015 be developed? The scholars around the world continue to learn from a century of research on development and growth, of policy experimentations, of successful and unsuccessful practices, and of desired and undesired

[6] For an emphasis on multidisciplinary approach to Policy Sciences, see Lasswell (1971).

[7] United Nations Development Program (UNDP) at http://www.undp.org/mdg/

outcomes (Samuelson 1954; Galbraith 1987; Putnam 1992; Herbst 2000; Sen 2006). This research aims to contribute to this global involvement towards eradication of extreme poverty and human suffering in sub-Saharan Africa, in general, and Mozambique, in particular, through the lens of HSRs.

This research is the first study ever developed about retention of HSRs in Mozambique. For the first time, Mozambican policy-makers will have access to a data-driven relationship with which to inform policies aimed at retaining some of their nation's most well educated citizens. Problems with the "Migration de Retour au Maghreb Projet" (MiReM) (2007) in northern African nations are instructive in this sense.[8] More specifically, in this report on return migration to Algeria, Morocco, and Tunisia, the statistical sources do not provide a comprehensive, precise vision regarding the socio-demographic characteristics of the returnees, nor do they allow the return migration phenomenon and the link between return migration and development in migrants' countries of origin to be properly understood and analyzed. Moreover, owing to the fragmentary nature of the data, used sources do not sufficiently inform the reader about return migration in at least two aspects: (i) the motivations, factors and circumstances that led migrants to return their country of origin; and (ii) the migrants' resources and patterns of reintegration in their country of origin, as well as their respective impact on the local and domestic economy.

Within the context of development policies, it is particularly relevant to focus on HSRs. As human capital is viewed as a major factor for development, a positive change in the stock of this factor should induce further development (Fukuyama 1992; Huntington 1993). Viewing HSRs as a positive flow of human capital back "home", attempts to study this phenomenon should contribute to illuminate certain development mechanisms. For Huntington, the ultimate explanatory variable for the democratization wave occurring in the last quarter of the 20th century was the political entrepreneur emerging from better educated and prepared elites. Referring to Africa, Guest (2004, 3) writes that it is "A continent in need of leadership". For instance, a survey of elite return migrants to Ghana and Ivory Cost revealed that being an "advocate for community" was perceived as the most important type of change they introduced in their home country after returning (Black et al. 2003).

From a methodological point of view, this research melds quantitative and qualitative research techniques to illuminate results and inform conclusions. From an empirical perspective, this research is the most complete effort to date to create a database of highly skilled Mozambicans (HSMs) who studied or are still studying abroad. More than fifteen hundred have been identified.

Summarizing, Ostrom (1999) seems to support research focusing on behavioral and contextual aspects of highly skilled people when writing, "Far more important is a deep understanding of … the capacity of citizens to learn entrepreneurial and to undertake important economic and social activities relying primarily on their own skills" (p. xv).

[8] MiReM Report at http://www.mirem.eu/datasets/datasets?set_language=en

THE THEORETICAL FRAMEWORK

Institutional Creation, Role, and Change in Institutional Rational Choice (IRC)

In IRC, institutions are created on the understanding that two or more people can be better off by acting together (i.e., cooperating), within an institutional setting (Buchanan and Tullock 1965; Ostrom et al. 1994; Axelrod 1997). There are five basic sources for these gains that apply to different degrees across all institutional designs (Beinhocker 2006): (i) the increments in productivity resulting from the division of labor (e.g., information-processing, cities, armies, factories); (ii) the new possibilities of trading mutual benefits as a result of a more heterogeneous pool of tastes and preferences (e.g., markets, civil organizations); (iii) the benefits of increasing returns on scale (e.g., knowledge sharing, friends, languages, hierarchies); (iv) the smoothness of uncertainties over time (e.g., trust, contracts, family); and (v) the reduction of transaction costs (e.g., agreements, laws, constitutions).

Given the natural tension between cooperation and self-interest (Wright 2000), two conditions must occur to encourage people to act together: (i) a distributive mechanism to allocate and share payoffs; and (ii) a management mechanism to deal with defection and free-riding (i.e., illicit benefit from a public resource either due to excessive consumption or unfair participation in its production costs). This tension between cooperation and self-interest, and the interconnection between institutions themselves, clarifies the critical role that the rule of law (i.e., mechanisms for enforcement and adjudication) plays for a well functioning of formal and informal institutions (North 1990). For example, Ostrom (1990; 2008) focuses on the institutional arrangements needed to address coordination problems in common-pool resources among potential competitive players in developing countries. Other authors argue that institutions are created to reduce participants' transaction costs in making deals or undertaking activities (Coase 1937; Buchanan and Tullock 1965; Moe 1984; Williamson 1985).

Within this context, institutional change mainly occurs as a result of the entrepreneur's comparisons of the gains from the existing framework with the gains from trying to alter that framework (March and Olsen 1995). This happens because, once created, institutions become factors with the potential of blocking and distorting or resolving "normal" economic processes. Institutions that hinder some, typically less powerful, individuals or groups may well do so by favoring typically others more powerful. The reason for this is that the stability of institutions leads to a filtering process of interests and preferences which mobilize political bias towards some and not others (i.e., institutionalization with and of bias) (Schattschneider 1960 [1975]). Examples of these inefficient institutions are revenue extraction, factor price manipulation, and political consolidation (Acemoglu 2005). This happens even in situations where affected actors voluntarily adhered in the past to now-binding institutions. If a given institution is subject to a process of competitive selection, it survives primarily because it provides more benefits to the relevant actors (e.g., lower transaction costs) than alternate institutional forms (Hall and Taylor 1996).

Kaufman (1985) views randomness rather than rationality as the key factor in institutional survival. Change, according to Kaufman, comes with time, as the complexity of evolutionary adaptation increases and leads to structural alterations and the assembly of new alliances. In this sense,

statistical probability must be recognized as a contributor to success or failure in institutions. This is so because, even though decisions may be based on the best information available at any given moment in time, conditions change, are unpredictable, and responses sometimes lead to different results from what was expected.

While accepting assumptions of an individual's utility-maximizing behavior, the IRC highlights the emergence and persistence of institutions in the face of cognitive limits, incomplete information, and difficulties in monitoring and enforcing agreements (Lowndes 1996). In this sense, IRC avoids three of the main criticisms Rational Choice Theory faces, in particular those applied to political sciences (Green and Shapiro 1994). First, IRC does not assume perfect information and individuals are modeled as bounded rationally. Second, in IRC, preferences are neither complete nor exogenously determined; they result endogenously as different actors adjust their own expectations and preferences based on other actors' expectations and preferences, and as actors interact with the institutional setting. Third, IRC does not focus only on outcomes. In IRC, results are the corollary of individual or collective bargaining processes assessing pay-offs from different possible solutions. Green and Shapiro (1994, p. 6) assert, however, that "in our view, the weaknesses of rational choice scholarship are rooted in the characteristic aspiration of rational choice theorists to come up with universal theories of politics."

Breaking Down the Institutional Setting

Having proposed why, how, and in which circumstances a broad institutional setting may affect behavior, and vice-versa (i.e., they co-evolve), the next goal for this research is to delve in the identification of more specific contextual factors affecting HSRs, which are used to support the IRC concept.

In a fast-growing economy, such as the one of Mozambique, where the horizon of production possibilities has been changing swiftly for the last sixteen years (WB 2007), the possibilities for further development are viewed more as a function of evolving formal institutions than evolving informal ones (i.e., there is an urgency to swiftly move from informal to formal forms of organization of life in society). This research argues that further development will be more likely bounded by formal than informal institutions (i.e., there is an urgency to identify institutional voids). As such, three steps are here proposed. First, the general categories of variables important in any institutional choice setting are derived from the Institutional Analysis and Development (IAD) framework. Second, more specific structuring and contextual elements, and the direction of their specific effects on HSRs' retention, are derived from two fields of literature: (i) return migration theories; and (ii) international (Mozambican) development theory. Lastly, within the context of the international development literature, the extent to which institutions and other factors explored in previous sections differ from urban to rural settings, and vice-versa, is also discussed.

Institutional Analysis and Development, Contextual Factors, and Action Arenas

IRC tends to stress the formal (as opposed to informal), the dynamic (as opposed to stable and historical), and the strategic (as opposed to norm-governed behavior) features of institutions and

individual response. Rivera et al. (2009) are aligned with this conceptualization when arguing that one of the reasons why institutions exert a "moderation effect" between actors and the environments in which they operate is that the institutional setting also determines the availability of resources and how they are exchanged by the different agents involved (also Friedland and Alford 1991).

Ostrom's (1990; 2008) IAD is intended to provide guidance on the variables that may be relevant in any institutional action arena. As a framework, however, it does not posit theoretical cause-effect relationships among variables. Instead, the IAD, supported by over 5,000 case studies collected on common pool resources (CPR) (Fukuyama 2000), is open to working with different theories illuminating those relationships (e.g., in the case of this research, two other complementarily theoretical bodies are applied).

The IAD focuses more on the game theory dynamics of multiple principals revolving around a common institutional problem (Ostrom et al. 1994). There are several seminal works for the foundations of the IAD. The application of Kenneth Arrow's (1951) Social Choice and Individual Values to social welfare has generally been accepted as the first of those works. Second, Hardin's 1968 essay on the tragedy of the commons illustrates Aristotle's (*Politics*, Book II, ch. 3, p. 1261b) idea that "what is common to the greatest number has the least care bestowed upon it. Everyone thinks chiefly of his own, hardly at all of the common interest." Third, the prisoner's dilemma game (Dawes 1975) where, paradoxically, individual rational strategies lead to collectively irrational outcomes. Fourth, the logic of collective action (Olson 1965) challenges the presumption that the possibility of a benefit for a group would be sufficient to generate collective action to achieve that benefit.

To the extent that the HSRs' population is viewed as multiple actors pursuing individual goals within a common, resources limited, institutional setting, the IAD framework is particularly relevant for understanding how individual behavior relates to macro structures. The bargaining between interest parties is, in North's (1994) framework, the central element for the process of institutional change.

Ostrom starts by defining "action arena" as a multidimensional space where different actors (e.g., HSRs) interact around a common situation – the action situation (e.g., Mozambique). Actors, individuals or groups, are characterized by "(i) the preference evaluations that actors assign to potential actions and outcomes; (ii) the way actors acquire, process, retain, and use knowledge contingencies and information; (iii) the selection criteria actors use for deciding upon a particular course of action; and (iv) the resources that an actor brings to a situation" (Ostrom et al. 1994, p. 33). An action situation is the "social space where individuals interact, exchange goods and services, engage in appropriation and provision activities, solve problems, or fight" (ibid., p. 28), and includes the following elements: "*participants* in *positions* who must decide among diverse *actions* in light of the *information* they possess about how actions are *linked* to the potential *outcomes* and the *costs and benefits* assigned to actions and outcomes" (ibid., p. 29).

If, on one hand, action arenas are the IAD's focal unit of analysis, on the other hand, they are also viewed as dependent variables influenced by three different clusters of contextual/exogenous/explanatory factors. Ostrom (2005, p. 16) argues that "Rules, the biophysical and material world, and

the nature of the community *all jointly* affect the types of actions that individuals can take, the benefits and costs of these actions and potential outcomes, and the likely outcomes achieved" [emphasis added]. Only the cluster "rules", which also includes personal norms, social norms, and strategies (Crawford and Ostrom 1995), falls within Ostrom's concept of institutions.[9] Ostrom, then, conciliates three competing ideas up to this point. If, on one hand, Ostrom attributes primacy to the role of institutions in development, on the other, she also includes and bridges in her collective action problems, the macro neo-classic economics' infrastructures (i.e., biophysical and material conditions) and the micro ethnographic "functionings" (i.e., community attributes). This theoretical conciliation is not only in terms of a set of different independent variables *jointly* influencing a dependent variable. This theoretical conciliation also assumes that the independent variables – institutions, physical conditions, and community attributes – influence each other as they co-evolve. The IAD proposes a move from the logic of self-interest-centered approaches to the spirit of interdependence around those three broad clusters of factors.

It may be claimed that Ostrom's solutions are not governmental solutions, therefore falling outside of the scope of a research that explicitly debates the role government can play in attracting and retaining HSRs in its country. Ostrom's framework relies, however, upon the mediating role government can play either in creating the incentives for different actors to coordinate action (i.e., to condition patterns of pay-offs) (e.g., tax deductions for donations to non-governmental organizations [NGOs]), or in formally institutionalizing more sustainable practices (e.g., fishing quota for protection of species). Even though there may exist no government ownership in a particular common situation, the government can still change the underlying conditions around any given action arena (e.g., by influencing the contextual factors) to shape situations and direct behavior (Banana and Gombya-Ssembajjwe 2000).

Departing from this strong co-evolutionary dynamic and relationship between institutions (i.e., rules in place) and other contextual factors (i.e., community attributes and material conditions) the next three sections are dedicated to identify which specific types of institutional, community, and biophysical variables mostly affect the possibility of retention of HSRs in Mozambique. While the IAD, as a framework, points to general types of these variables, theories of international development and returnees are used to identify the specific variables to be tested. This set of variables is then used, as independent variables, for the formulation of four testable hypotheses. The expression "institutional setting" used throughout this research then refers to the landscape of factors (i.e., institutions plus other contextual elements co-evolving as they interact with each other) in which HSRs try to mobilize resources over time towards their personal goals.

[9] This is why it is inaccurate to identify Ostrom more with formal institutions, as she explicitly talks about diagnosing the "rules in use" which, even if occasionally equivalent to formal institutions, may also reflect shared strategies and norms (i.e., informal institutions). In practice, however, Ostrom has tended to measure and study those institutions that are rules in her definition of institutions, as well as shared strategies, but less so on norms. For a deeper understanding of the institutional diversity and, in particular, how rules can be further broken down into different sub-categories (i.e., position rules, boundary rules, choice rules, aggregation rules, information rules, payoff rules, and scope rules) see Ostrom (2005).

Return Migration Theories and Community Attributes

Given the high potential value of return migration to the society, many initiatives by national and international agencies have been directed at attracting their expatriates back – especially the highly skilled (Ghosh 2000; Lowell 2001; Wickramasekara 2002). Besides policies that encourage the return of skilled labor, governments can also "fight" the brain drain with retention policies, either through educational sector policies (e.g., Indian university budget increases) and/or economic development (e.g., Indian expatriate investment outreach).

Overall, the return migration literature broadly refers to the "Six Rs" (Papademetriou and Martin 1991; Lowell and Findlay 2002) when breaking down the range of possible policies vis-à-vis high skilled migrants, from a source/sending country point of view: (i) the *return* of migrants to their source country; (ii) the *restriction* of international mobility to nationals and foreign workers; (iii) the *recruitment* of international migrants; (iv) the *reparation* for loss of human capital (compensation); (v) the *resourcing* expatriates (diaspora options); and (vi) the *retention* through educational and economic sectors' policies (see Table 1 for a comparative analysis of the most relevant international migration theories).

One way of looking at and comparing these theories is by analyzing how they model the unit of analysis under consideration – the returnee. While the three first theories – the neoclassic, the new economic, and the structuralist – view the migratory process as a two-stage single cycle of leave and return, the remaining two view the migratory process as multi-cycles of leave and return (i.e., brain circulation).

The first three theories, however, value the decision to return very differently. While for the neoclassic approach, the return is an anomaly, if not a failure of the migrant experience, since the successful migrants maximize their experience abroad, for the new economic theory, the return embodies the successful migrant whose goals abroad were met. For the structuralist approach, the return is neither a reflex of success nor failure. Typically associated with inactive migrants (e.g., ill, old, retired) the return is more determined by contextual conditions in the home country (e.g., attachment to home or nostalgia) than to a calculated cost/benefit personal analysis. What distinguishes the transnational and the social network approaches is the degree of migrant circulation and the role played by networks. While the transnational approach embodies the successful migrant belonging to a dispersed ethnic group and continuously maintaining across-boarder mobility, for the social network approach, even though s/he experiences less mobility, the return is secured and sustained by effective cross-boarder networks of social and economic relationships.

Table 1: Theories of Return Migration

	Neoclassic Economics	New Economic of Labor Migration	Structuralism	Transnationalism	Cross-border Social Network Theory
Return Migration	Those who stay in receiving countries are those who have succeeded. Return is an anomaly, if not failure of a migration experience.	Return is part and parcel of migration project (seen as a "calculated strategy"). It occurs once migrant's objectives are met in destination countries.	Core/periphery dichotomy. Return to home countries occurs without changing or compensating for structural constraints inherent in peripheral origin countries. Return is also based on incomplete information about origin country.	Return is not necessarily permanent. It occurs once enough financial resources and benefits are gathered to sustain household and when "conditions" in home country are favorable. It is prepared. Return has a social and historical background.	Return is secured and sustained by cross-border networks of social and economic relationships that convey information. Return only constitutes a first step towards completion of migration project.
The returnee	Embodies the unsuccessful migrant who could not maximize the experience abroad.	Embodies the successful migrant whose goals were met in destination countries. The returnee is a financial intermediary and a target comer.	Neither a successful nor a failed migrant. Brings back savings to home country. Return expectations are readjusted and adapted to structural context at home. "Behavioral divergence" occurs on return. Only the ill, old, retired and untalented return, i.e., cost of return is limited.	Belongs to a globally dispersed *ethnic group* (i.e., a diaspora consciousness). Succeeded migration experience before returning. The returnee defines strategies aimed at maintaining cross-border mobility and linkages embedded in global systems of ethnic and kin relationships.	A social actor who has values, projects, and own perception of return environment. Gathers information about context and opportunities in origin countries. Resources are mobilized before return. Belongs to cross-border networks involving migrants and non-migrants.
The returnee's motivation	Migration experience failed. Need to return home.	Attachment to home and household. Goals are met.	Attachment at home and household, nostalgia. Motivations are readjusted to realities of home market and power relations.	Attachment to home and household. Family ties are crucial. Social and economic conditions of return are perceived sufficiently favorable to motivate return.	Embedded and shaped by social, economic, and institutional opportunities at home as well as by relevance of own resources.
Financial capital	No income or savings from abroad are repatriated.	Remittances constitute an insurance against misfortune. Assist household members.	Savings and remittances have no real impact on development in origin countries. Household members monopolize financial resources. No multiplies effect.	Pensions and social benefits are part of remittances. Financial resources are used according to institutional conditions at home. Transform economic and political structure of sending areas.	Remittances and savings constitute just one type of resources. May be invested in productive projects aimed at securing return.
Human capital	Skills acquired abroad can hardly be transferred to origin countries; they do not match local needs. Human capital is wasted.	Acquisition of skills varies with probability of return.	Skills acquired abroad are wasted owing to structural constraints inherent in origin countries. Social status does not change.	Improved skills and educational background gained abroad allow upward mobility.	Skills acquired abroad, as well as knowledge, experiences, acquaintances and values, are contributory factors to securing return.

Source: Cassarino (2004)

In a study about British and Indian highly skilled migrants, Harvey (2009) argues that the availability of professional opportunities in the home country (i.e., new job offers, or business ventures such as starting-up companies) is the most important factor for return and retention. Although income was also an important factor, the nature of their new job or business venture as well as the quality of their lifestyle was significant in their decision to return to and remain in their home country (Iredale et al. 2003; Saxenian 2006; IOM 2007).

Referring to HSRs, Saxenian (2006, p. 326) argues that "[t]hey serve as role models, mentors, partners, and investors for entrepreneurs in their home countries … they reject the familial, opaque, and frequently corrupt business practices that dominate in many developing countries.… Most are motivated by professional challenges as well as economic opportunity." According to Saxenian, HSRs represent and provide an essential mix of local knowledge (i.e., informal institutions) and global connections to markets and networks (i.e., formal institutions) required for developing countries to overcome problems of (i) being remote from sources of leading-edge technology; and (ii) being distant from developed markets and their interactions with users that late-developing economies typically face.

In spite of several policy initiatives within the African political agenda on migrations and development (e.g., "Migration and Development for Africa" program [MIDA] by the International Organization for Migrations [IOM], "Transfer Of Knowledge Through Expatriate Nationals" program [TOKTEN] by the United Nations Developed Program [UNDP]), there is still a very limited understanding of how public policy may affect micro level patterns of migrants' mobility (Dustmann 2003; Cassarino 2004).

In his approach to Italians returning from the U.S. to Southern Italy, Cerase (1974), arguably the most noted author in this particular issue, classifies them into four categories. The first, "return of failures", "for those who spent only one or two years in the U.S., life there was more often than not miserable: if they held a job at all, it was an unskilled job and one they disliked; rarely had they a "home"; more often than not they had lived in boarding houses, or even in factory barracks" (ibid., p. 251). "They are, then, the returned migrants who have failed, failed both to get launched in the new society, and – what is even more significant – to live up to their expectations of the advantages to be derived from emigration" (ibid., p. 254). The second, "return of conservatism", refers to "those who in the new society remained aliens with their minds fixed on their return home, hopefully with enough money to buy a small piece of land … however minimal they may have been, it required a certain number of years of hard work in the U.S." (ibid.). In this category "the immigrant continues to consider his earnings as well as his investments in terms of the traditional scheme appropriate to his own country" (ibid., p. 251). Cerase continues, "While in the U.S., they seldom acquired new occupational skills, and those they did learn were soon forgotten because of their discontinuous work experience" (ibid., p. 256). The third, "return of retirement", refers to

> those migrants who have returned to retire. America is not a land for old people. Their health was poor, their social security pension allowed them a more comfortable living in Italy than in the U.S., and, in addition, they had hardly any family ties in the U.S.… Retired returnees look upon their return as the beginning of the last stage of their life.… They have lived a full life in the U.S.… But their sense of belonging could not go beyond a certain limit (Cerase, 1974, p. 257).

According to Cerase, returnees from these three categories are not active in politics. Those from the first two categories are similarly apolitical because of their low skills levels, a lack of material resources, and the absence of social ties. Those from the third category are not engaged largely because they are too old. The fourth category, however, "return of innovation", refers to those who "look upon return as the beginning of a new stage of their life" (ibid.). In this category "the immigrant sees in his return home a possibility of a greater satisfaction of his needs and aspirations" (ibid., p. 251). Further "his will, his means, and his belief are new and, strictly speaking, innovative" (ibid., p. 259). Contrary to other categories, the "return of innovation" aims to disrupt the old equilibrium in the local power structures. Related with this research, Cerase confesses that "this research on return migration began with the innovative returnee in mind. The assumption was that he could have acted as a carrier of social change.… He considers himself an innovator" (ibid., p. 258).

Similarly to what is proposed in this research, Cerase also uses a single nation to formulate his generalizations. Even though his study was carried out 36 years ago, Cerase's special interest in the returnees more associated with change and innovation is highly supportive of the focus of this research on HSRs.

For Cassarino (2004), returnees' entrepreneurial capacity to secure reintegration "at home" lies at the intersection of patterns of resource mobilization (i.e., material, human, information about conditions at home, financial), return readiness, motivations, and contextual factors in origin countries. In this sense, the HSR's capacity to interact with the context in the home country is not merely the result of their educational levels and/or knowledge acquired. In a broader sense, retaining HSRs is not only about increasing the educational levels in developing countries. It is also about "importing" tangible (e.g., savings accumulated abroad) and intangible resources (e.g., professional networks) networked around the HSRs.

Overall, the literature and their attendant policies have focused on the economic aspects of the HSRs' retention process. More specifically, intimately related to the IAD's material conditions, special emphasis has been paid to resources available to HSRs (e.g., lowering HSRs' transition and transaction costs) and the rule of law (e.g., job/professional/entrepreneurship-related programs). Fukuyama (1992) argued that what drives men and women is the attainment of personal recognition based on a deep sense of self-worth.[10] If this is so, not only does it help to explain why so many Africans decide to return to communities deprived of material conditions, but it also shows that material-based explanations are insufficient to explain those decisions (e.g., the role of family, community, culture). Fukuyama states: "as populations become better educated people begin to demand not simply more wealth but recognition of their status" (p. vxiii).

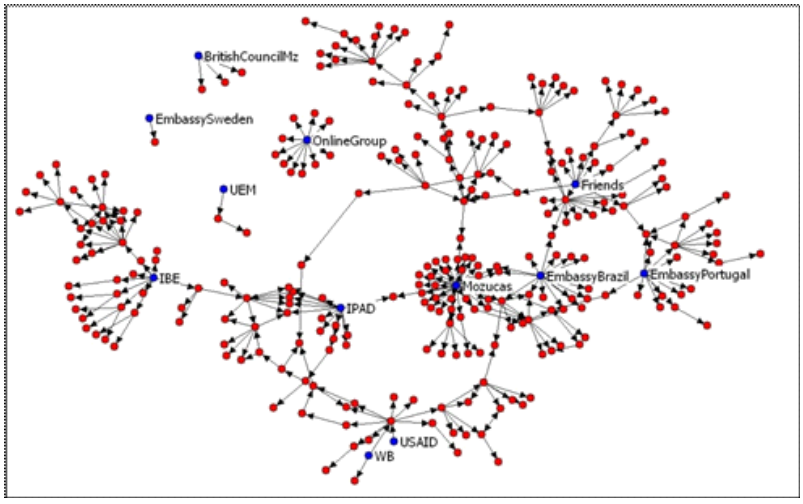
[10] See Maslow's (1943) hierarchy of needs for an earlier formulation of a theory of human motivation.

METHODOLOGY

Tools and Samples

A data-base of highly skilled migrants (HSMs) was developed for more than two years and now with 1,415 contacts it is the largest resource available listing Mozambicans with international academic and professional experience. Even though the majority of these individuals has not yet returned to Mozambique, all were targeted by this research. Of these, 217 – the study extended sample of HSMs – answered the survey, of which 100 had already returned – the study sample of HSRs. Even though this research focuses on those HSMs who have already returned (i.e., the HSRs)[11], data from those who have not yet done so was also gathered and analyzed to get a broader sense, for instance, of the reasons for leaving Mozambique, destinations chosen, degrees, skills, and training obtained, expectations about the future, perceptions of Mozambique while abroad, and satisfaction abroad.

Figure 1: Social Connectivity in Sample Construction



Source: Author's own contruction

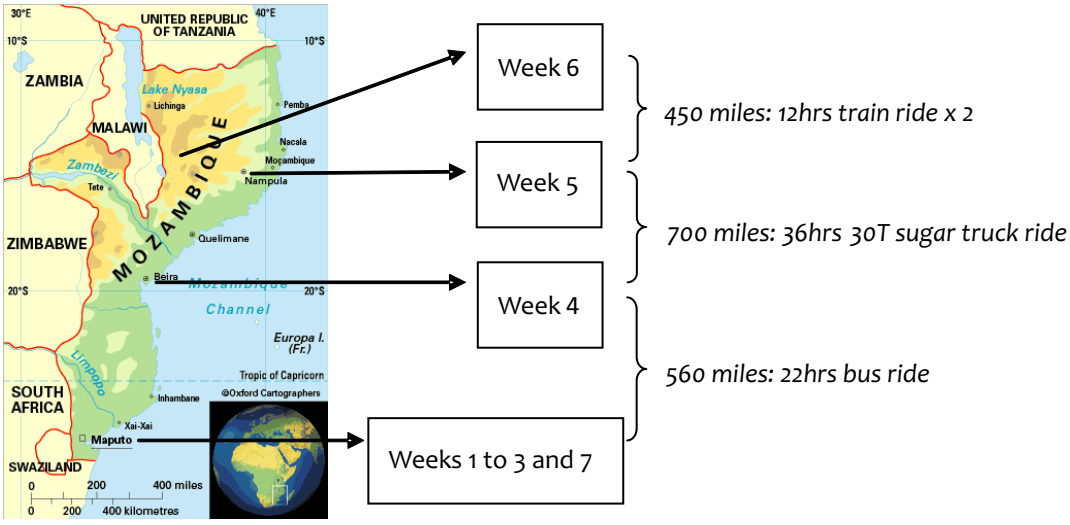
Figure 1 represents the social relationships between entities that directly contributed to the construction of the sample (labeled nodes)[12] and HSMs that participated in this study (non-labeled nodes), either as sample members and/or as providers of HSMs' contacts. In total, there were 278 actors (i.e., nodes) involved, entities and individuals combined, establishing between them 316 ties (i.e., names' nominations).

The survey tool was designed in the Portuguese language, disseminated using the web tool "Survey Monkey" and was on-line during the period of field research in Mozambique - between November 17, 2009, and January 11, 2010. Figure 2 illustrates when and where the ethnographic experience occurred during the field research. A final visit occurred in July 2010 for presentation and discussion of results with a sub-group of 17 HSRs.

[11] HSMs = HSRs + HS not-yet-Returned.

[12] Even though, several other organizations not mentioned here also collaborated, in many cases contacts provided or mediated did not generate new sample members.

Figure 2: Map of Field Research



Source: Google Maps

Note: The return from Nampula to Maputo after the 6th week was done in a 2hrs flight.

Variables and Model Building

Overall, the multivariate analysis was used to explore variations of the baseline model of the type:

$$y_n^{(k)} = \beta_0^{(k)} + \beta_1^{(k)}\overrightarrow{x_{1n}^{(k)}} + \beta_2^{(k)}\overrightarrow{x_{2n}^{(k)}} + \beta_3^{(k)}\overrightarrow{x_{3n}^{(k)}} + \beta_2^{(k)}\overrightarrow{x_{4n}^{(k)}} + \varepsilon_n^{(k)}$$

where,

k = 1, … , 6: different regression models considered.

y: retention of HSRs.

n = 1, … , N: sample size (100).

β = 0, … , 4: regression parameters/coefficients.

$\overrightarrow{x_1}$: vector of professional-related variables [H_1].

$\overrightarrow{x_2}$: vector of ICTs-related variables [H_2].

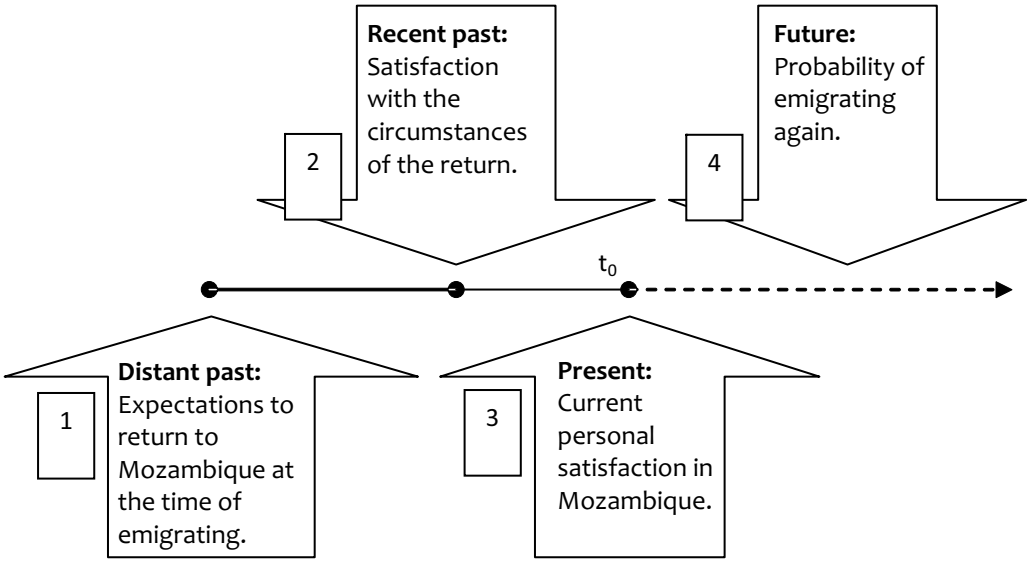
$\overrightarrow{x_3}$: vector of governmental programs-related variables [H_3].

$\overrightarrow{x_4}$: vector of controlling variables.

ε_n: residual error term for y_n.

The several approaches formulated for the dependent variables can be represented in a time line associated with the HSRs' migratory cycle (see Figure 3).

Figure 3: HSRs' Migratory Cycle's Time Line



Source: Author's own contruction

This research considers two different types of independent variables (IVs): (i) socio-demographics (control variables); and (ii) contextual factors (testing IVs). Socio-demographics, such as gender, age, religion, ethnicity, marital status, number of dependents, education level, political affiliation, geographic location of birth and current residence, life experience abroad, year of return, and reasons to leave and return to Mozambique, were selected based on a large survey developed and applied by the Robert Schuman Centre for Advanced Studies, European University Institute, on return migration to Maghreb countries (MiReM 2007).[13]

Data, primarily quantitative, on contextual factors seek to capture (i) HSRs' access to and use of more specific contextual variables/elements; and (ii) the assessment of HSRs' experience with these variables/elements. The expected direction of association between dependent and independent variables is of the type "the more HSRs access and use the contextual factor or element considered, the higher is the likelihood of remaining in Mozambique." The three contextual factors considered are professional opportunities, ICTs, and governmental programs. Tables 2 to 4 illustrate how survey questions relate to contextual factors, variables and hypotheses, and how these relate to Institutional Rational Choice (IRC) testing.

[13] Complete description of this field survey at http://www.mirem.eu. Survey tool applied and results at http://www.mirem.eu/datasets/survey/survey?set_language=en.

Table 2: Hypothesis 1 (H_1)

Increased access to professional opportunities favors retention of HSRs.

#	Contextual Variables	Information for Public Policy
	Contextual factor: Community Attributes / Example: Professional Opportunities	
1	Current professional situation	Rate of profession integration, unemployment rate, entrepreneurship rate
2	Duration of the situation	Temporal reference
3	Personal aspirations	Professional mobility, labor supply, human dynamics
4	Professional aspirations	Job market (e.g., jobs demand, professional mobility, opportunities)
5	Factors hindering professional expectations	Institutional opportunities/constraints (e.g., priorities)
6	Current employment situation	Industrial and regional dynamics
7	Entrepreneurship	Social and economic dynamics/trends, market forces
8	Factors constraining entrepreneurship	Institutional opportunities/constraints (e.g., priorities)
9	Entrepreneurship aspirations	Trust, economic confidence, social attitude
10	Factors constraining Entrepreneurship aspirations	Institutional opportunities/constraints (e.g., priorities)

Table 3: Hypothesis 2 (H_2)

Increased access to ICTs favors retention of HSRs.

#	Contextual Variables	Information for Public Policy
	Contextual Factor: Material Conditions / Example:ICTs	
1	Current use	Technological penetration/culture
2	Potential use	Potential for technological penetration
3	Factors preventing use	Institutional opportunities/constraints (e.g., priorities)
4	Potential access	Potential for technological dissemination and for new/expanding markets
5	Factors preventing access	Institutional opportunities/constraints (e.g., priorities)

Table 4: Hypothesis 3 (H_3)
Increased access to governmental programs favors retention of HSRs.

#	Contextual Variables	Information for Public Policy
	Contextual Factor: Rules in Place / Example: Governmental Programs	
1	Information about conditions in Mozambique	Institutional opportunities/constraints (e.g., communication channels, diasporas involvement)
2	Information about programs/initiatives	Attraction, return, and retention of highly skilled citizens
3	Access to specific programs/initiatives	Institutional opportunities/constraints (e.g., priorities, government image, international networks, internet)
4	Sources of information	Governance, priorities, partnerships, innovation
5	Benefit from programs/initiatives	Attraction, return, and retention of highly skilled citizens
6	Benefit from specific programs/initiatives	Institutional opportunities/constraints (e.g., government priorities, bureaucracy, housing)

CONCLUSIONS AND RECOMMENDATIONS

Introduction

By assuming that the ultimate explanatory variable of development, thus of the alleviation of suffering, is the educational level of communities and nations (Fukuyama 1992; Huntington 1993), the contribution of this research is materialized on a policy-making tool addressing (i) the role Mozambican highly skilled returnees (HSRs) can play for the development of the country, and (ii) the constraints they face in the processes of their reintegration in the home country. This contribution was prepared with three different types of audiences in mind. First, the Mozambican government who could design better policies to attract and retain a larger number of its well-educated citizens. Second, the civil society and private sector that search of highly qualified and highly motivated professionals for their organizations. Third, the international organizations and donors committed to a post-2015 Millennium Development Goals' (MDG) renewed plan.

This research used Institutional Rational Choice (IRC) to frame the first goal described above and to understand how Mozambican HSRs, in pursuit of their personal aspirations and goals, are affected by the institutional setting in their home country. To test IRC, the research question "What factors affect retention of HSRs in Mozambique?" was formulated. As the theory suggests, institutions and other contextual factors are of very different types and may affect behavior in a myriad of ways. New institutional perspectives on development and return migration theories served as the basis for selecting the contextual factors for the hypotheses-testing of this research. These hypotheses served as bridges between theory and policy. Three types of factors/elements were selected: professional opportunities, information and communication technologies (ICTs), and governmental programs. Each corresponded to a given hypothesis formulated to address the research question. A fourth hypothesis was considered to study the extent to which the three types of factors tested differ in their effects from urban to rural settings. A better understanding of the constraints imposed by contextual factors on HSRs' behavior and personal satisfaction could allow governments in extremely poor countries to prioritize interventions for institutional development, given the very scarce resources available. These could have the interaction effect of increasing the capacity of HSRs to contribute to the development of Mozambique and provide positive signals to encourage the return of more. This second goal was explored with the scientific community in mind. By building on existing theory and knowledge of the problem of persistent extreme poverty, this research aims at providing some answers but also at suggesting new questions for further research.

Why a study on HSRs and retention within the development field? If HSRs represent a variation (i.e., flux) of highly qualified human capital in Mozambique, which is a key variable for development, retention can be viewed as the stock of this variable needed to induce development.

Thus, while the identification and listing of contextual factors, and corresponding elements, affecting retention (i.e., behavior) was part of the task required to answer this research question, the determination of their relative importance was a much more useful and critical exercise. This is so because to be a useful policy-making tool this research should be able to guide the definition and prioritization of policies that could favor the retention of highly skilled Mozambicans (HSMs) in Mozambique. Consequently, this chapter is dedicated (i) to present the major findings of this

research; (ii) to discuss the major theoretical implications arising from those findings; (iii) to highlight political and practical implications towards HSMs' retention; (iv) to suggest future research; and (v) to offer both a brief summary of the entire research project and some thoughts on the possibility of a future global partnership for highly skilled migrants.

Major Findings

The major findings of this research result from hypotheses-testing. First, this research demonstrated that all three contextual factors tested are associated with retention of the highly-skilled Mozambicans. This finding supports the IAD's argument that knowing about the biophysical/material and community variables is still "policy relevant", given that new policies and institutions can be devised to shape those other contextual variables. Second, this research showed that the degree of association between contextual factors and retention differs across factors (i.e., the differentiated value of factors). Third, this research also showed that the degree of association also differs from urban to rural settings. Fourth, this research demonstrated that the primordial role played by professional-related elements in the capacity of a country to retain some of its most well-educated citizens supports previous literature reviewed. Fifth, this research clarified that the possibility of achieving personal goals is the most important component of one's overall life satisfaction, and thus retention. Implications resulting from these findings can be classified into three categories: (i) theoretical; (ii) practical for policy; and (iii) and for future research.

Theoretical Implications

The first major theoretical implication is that the combination of IRC and the Institutional Analysis and Development (IAD) proved to be a very valid theoretical framework to understand the problem of brain-drain and the possibility of its inversion (i.e., attraction and retention of HSMs). On one hand, this research demonstrated that institutions and other contextual factors do impose constraints on HSRs' outcomes and behavior (i.e., retention) (Arrow 1951; Olsen 1965; Buchanan and Tullock 1965; Tullock 2008). On the other hand, this research showed that institutions operating within a given action arena should be classified into different categories (Ostrom et al. 1994; Ostrom 1990; 2005; 2008), with each exerting different effects (Rivera et al. 2009) on HSRs. Consequently, but more interestingly and more specifically, this research constitutes a significant contribution for several other major current intellectual debates related to development and emerging economies. First, this research suggests, though not intended to explicitly tested it, that institutional elements, such as the rule of law, corruption, political stability, and functioning of the public administration are more significant for the decision to return than macro economic variables, such as the gross domestic product (GDP) or the human development index (HDI). In this sense, this research supports the argument that institutional development precedes economic development (Rodrik 2002; Barro 2003; Rodrik and Wacziarg 2005). While the contribution for the economic development of Mozambique is the main goal for the return, the return itself depends less on economic factors than on institutional quality (North 1994; North et al. 2003; Birdsall et al. 2005). Because this is so, this research also demonstrated, through the lens of the HSRs, that micro-level programs, at the individuals' incentives level, are very useful to foster retention and development (Dustmann 2003; Cassarino 2004). The direct corollary of this argument is that contextualized bottom-up approaches, HSRs-targeted, to policy-making, would be very useful for the development of Mozambique

(Lindblom 1959; McMillan 2004; Easterly 2006a). Actually, these HSRs-targeted policies may very well be what Sen (1981) calls the "functionings" allowing individuals to act out of personal choice. Additionally, the resilient nature of some inefficient institutions (e.g., corruption, political interference, and bureaucracy) may be explained either by (i) Kaufman's (1985) randomness associated with the idea that structural alterations need time to occur as the complexity of evolutionary adaptation increases; by (ii) Tullock's (2008) idea of public choice through which the rational political actor protects his/her own political interest; or by (iii) Acemoglu et al.'s (2002) historically-determined component of colonial and civil war institutions and volatility.

The second major theoretical finding, partly related to the first, is that the low economic development of a nation does not necessarily result in experiencing detrimental brain drain. This means that only when the threshold of social return to migrants' education exceeding their private returns is achieved should brain drain be viewed as detrimental for the development of a country (i.e., it is not because a relatively small number of highly skilled citizens do not return that brain drain is detrimental for development) (Beine et al. 2001). In the case of Mozambique, several indicators point to the surprising finding that, contrary to other countries (Todaro 1985), brain drain may not even be a problem after all. Thousands of highly skilled Mozambicans left the country at the time of independence in 1974, to avoid political uncertainty, the newly established communist regime, or a civil war that lasted for twenty years. The "simple" prospect of a better professional life abroad (e.g., Portugal, South Africa, Zimbabwe) was also a major factor for the exodus at that time. Even if until the end of the 20th century brain drain was, eventually, very substantial, that should not be the standard to measure current brain drain, and that should not be the standard to assess the impact of brain drain in current development. The question of how many highly skilled personnel are abroad without setting a time range is inaccurate for the purpose of assessing the impact of brain drain in current development. The question should be: "How long have they been abroad?" According to three HSRs interviewed, which referred to all other HSMs they knew, nine in every ten HSMs had returned. According to the quantitative data collected, current brain drain is at most 31 percent (i.e., 69 percent returned already). Actual brain drain, although not the primary subject of this research, might be lower than this because many of those who have not yet returned are still in the process of concluding their degrees/training and it is expected that some or many of them will end up returning.

Thus, it is important to clearly distinguish the brain drain stock from its variations (i.e., fluxes). The stock results from summing up all highly-skilled citizens who left their home country at some point. While the quantification of this brain drain stock may have some relevance from a historical and demographic perspective, both for the countries of origin and destination, it is significant neither to assess current brain drain variations nor to assess its impact on development. World Bank (WB) data, the only data of this kind available, used to formulate the problem of this research is of this type (Docquier and Marfouk 2004). The problem with this type of data is not only that it fails to consider recent trends in brain drain fluxes but also neglects major contextual changes and developments (e.g., the end of the Mozambican civil war in 1994). For the case of Mozambique, the current brain drain stock, inherited from decades ago, does not reflect current conditions in the nation.

The other component of brain drain results from considering actual brain drain only as recent fluxes of human capital (e.g., last ten years). The advantage of this type of data for countries, like Mozambique, which has recently come out from very unstable conditions (e.g., wars, revolutions,

ethnic conflicts), is that it makes a much more direct connection between current HSRs' behavior and the current institutional setting. These data were not found but will be invaluable for future research.

Regardless of the time frame chosen to define the boundaries for the fluxes, a certain initial number of years should not be counted either. For instance, a student that spends three to five years abroad to finish a degree (HSRs on average expect to remain four years abroad) should not be considered detrimental (i.e., irreversible, structural, long-term) brain drain, since s/he is still in her/his "normal" training period, after which will eventually benefit the home country. Within this context, a detrimental brain drain should not be a function of the brain drain stock, but of the percentage of HSMs that did not return, for instance, between the fifth and tenth years abroad.

There is some evidence that points to the fact that, in spite of the very low economic level, partly due to historical events, the most skilled and brightest Mozambicans are returning. Once again, the first theoretical implication discussed above is reinforced: institutional development precedes economic development (Rodrik 2002; Barro 2003; Rodrik and Wacziarg 2005). In summary, contrary to what the WB argues (Docquier and Marfouk 2004), this research did not find empirical support for the hypothesis that "Mozambique has been facing increasing levels of the brain drain". This research suggests the opposite. In fact, the overall improvement of the institutional setting may be the explanation for the brain drain inversion that Mozambique has been experiencing in the last ten or fifteen years. The actual "improvement" may, however, be illusory. HSMs returned to Mozambique, and now embedded within previously found (i.e., while abroad) institutional inefficiencies (e.g., power centralization, political preferences, trade barriers), may now simply perceive them as less discouraging.

Thirdly, while results from this research support studies in other countries in which professional-related factors play a fundamental role in the return and retention process (Iredale and Guo 2001; Black et al. 2003; Birdsall et al. 2005; Saxenian 2006; Harvey 2009), for the case of Mozambique, the role family-related factors play is ambiguous. As happens with professional-related elements, family definitely plays a key role in the return and retention decision, but it is not clear whether as a positive incentive to return (i.e., affective reasons) or as a negative incentive (i.e., an obstacle) to remain abroad (i.e., material reasons, such as, providing for the family). Birdsall et al. (2005) suggest that the more qualified one is, the more his/her focus shifts from family to public life. Nevertheless, the combination of both professional and family-related factors may be the reason why, as discussed above, Mozambique has not been facing "increasing levels of the brain drain".

Fourth, even though it is not directly related to this hypotheses-testing, this research suggests that there is a social constructed reciprocity between social and scientific development (i.e., mutually complementary) that is not found between economic and social development. This means that the majority of those who chose social development (scientific development) as the main personal goal upon returning chose scientific development (social development) as their second most important goal. This reciprocity was not found between economic and social development since the majority of those who chose social development as their most important goal did not chose economic development as their second goal. Even though the literature reviewed for this research does not clarify the reasons for this finding, nor exactly what it means (again, this was not even the purpose of

this research), a few tentative explanations may be proposed. First, economics and science seem to be means (i.e., tools) to a higher end, social development. Second, for those giving priority to social development, this goal is more of a function of science than economics. The rationale for this may be related to the nature of some of the most critical Mozambican problems: health (e.g., AIDS, malaria), education (38.7 percent of adult [>15 years of age] literacy rate against the 59.3 percent in Sub-Saharan Africa), and food (e.g., low productivity crops, high weather uncertainty). These critical issues draw more attention to and expectations for scientific solutions to solve basic and immediate human needs, than on higher income levels for future material possessions. Another explanation may be found in some sample bias towards academic/scientific activities given HSRs embeddedness in academic/scientific contexts abroad. One way or another, scientific development is valued so highly by HSRs surveyed that one in every five HSRs wants a job on Education/Research field – the highest rated field. If, on one hand, this may be an opportunity for Mozambique, on the other, it may hinder retention if consonant professional opportunities are not both offered and found (Iredale et al. 2003; IOM 2007).

Fifth, this research demonstrated that HSMs' return process is characterized by aspects depicted from different theories of return migration. Far from the neoclassic economics approach, which sees return as an anomaly, if not a failure, HSMs' return combines the new economics of labor migration's calculated strategy (i.e., migration project), once goals are met abroad, with the structuralism's readjustment of motivations to institutional realities and power relations in the home country. HSMs' return is also described by some aspects of transnationalism and cross-border social networks. Return and retention are not necessarily permanent. The constant tension between family ties, the perception of reasonable socio-economic conditions in the home country, and the possibility of a new opportunity abroad, lead HSRs to develop and maintain socio- and professional international ties. Complementarily, improved skills and educational background gained abroad allow upward mobility, and the possible recognition of these by fellow Mozambicans is a contributory factor for securing return. Summarizing, this theoretical hybrid suggests that Mozambican HSRs' behaviors and interests are constrained by structural aspects of their home country (Cassarino 2004; Harvey 2009) and induced by cross-border networks (Saxenian 2006; Riddle and Nielsen 2008).

Sixth, all the theories of return migration analyzed seem to impose the need of some type of structural framework (e.g., family, networks) to explain return and retention (Xiang 2000; Cassarino 2004). Even though all these aspects were found to be very relevant for the Mozambican HSRs, none of these theories explicitly accepts the possibility of a decision based on one's subjective assessment of his/her happiness regardless of structural conditions, providing that some minimum conditions are met (e.g., the end of the civil war, the establishment of minimum democratic conditions). In this sense, retention would be more a function of individual motivation for accomplishing personal goals than of conditions offered by the outside context (Diener 1984; Fukuyama 1992). This personal motivation does not imply an atomistic realization, as if individuals operated in complete isolation, since it is also influenced by one's recognition in the community. It is true that perceptions about the possibility of fulfilling personal goals may be influenced by indigenous structural aspects (e.g., family, social ethics, rule of law), and the return moment determined by them. However, for the HSRs studied, once they return retention itself seems more a function of one's perception of his/her

empowerment to induce change (i.e., happiness, life satisfaction), partly as a result of the knowledge and skills obtained abroad, than to external conditions (Veenhoven 2001).

Seventh, the "Maputo effect", which this research identified, supports the idea that institutions and other contextual factors play a fundamentally different role depending on the location (i.e., urban or rural) of their jurisdiction (Lipton 1977; Bates 1993; Mamdani 1996; Boone 2003). This finding is particularly relevant for the case of Mozambique given its very high internal inequalities. The risk of ethnic divisions and conflicts associated with perceptions of discrimination in access to and benefit of certain resources may threat the integrity of the development process of Mozambique. To make the construction of the Mozambican nation viable, the government is called upon to design and implement unifying institutions capable of equally distributing resources and legitimizing power jurisdictions (Cahen 1994; Cabaço 1995; Macuene 2001).

Policy Recommendations

Constructing a decision-making tool for policy was one of the explicit goals formulated for this research. Thus, fifteen recommendations can be drawn from previous analysis and discussions, in particular from the results of hypotheses-testing.

Professional Opportunities-related

Employment-related

Donors and international non-governmental organizations (NGOs) are the main education grant providers in Mozambique. They should consider orienting their financial support to Mozambicans willing to study in areas that are a national priority. These would have to be defined by national and provincial authorities interacting with corporations and business associations. These scholarships could have the promise of a challenging employment upon concluding studies/training and returning attached to them. This research raises the question, however, of whether the overseas training programs are meeting the needs of the domestic economy. This hypothesis is suggested because of the difficulties HSRs face to find a job in spite of the widespread need of qualified personnel across the country.

Due to HSMs' propensity for political affiliation abroad, plus the role embassies and consulates can play in aggregating diasporas, it would also be possible for the government to have an updated database of some of its most well-educated citizens living abroad. This database could then be used for general information about conditions in the home country and to disseminate information about specific programs (e.g., participation of the diaspora in elections, returning support programs, jobs available, HSMs' profiles available, culture). Designed for online use, this new platform would allow HSMs to register by a procedure similar to the one developed to build this study sample. More than a list of registered HSMs, this new platform should be interactive enough (e.g., integration with YouTube for candidates' video presentations, facebook profiles) to have the diaspora engaged, for instance, in supporting local NGOs, networking for business, offering gifts and transferring remittances online, among others (the role the Mozambican diaspora has been playing was very negatively rated). Other sources of information for this database could be the list of registrations for visas, or requests for information to the government or international donors (i.e., information from

HSMs can be obtained at different levels of their interaction with the government and other organizations). This database and online tool should have enough information about Mozambique and about HSMs to increase the likelihood of a match between national needs (i.e., professional opportunities, geographic focus) and HSMs' aspirations (i.e., personal goals, interests, areas of education and training). For instance, initiatives for recruitment abroad were pointed out by HSMs as very important for their return.

Entrepreneurship-related

Since 90 percent of the HSRs want to have his/her own business, and friends and professional networks are listed as the main sources of new business ideas, the government should encourage, maybe even sponsor, events connecting HSRs with each other, with the private sector, and civil society. Lack of or difficulties in accessing capital are the main reasons not to open a business. Actually this has been a major critical factor for private sector development in Mozambique. According to the Asian Development Bank (ADB) (2008, p. 8), in the traditional Mozambican financial system "credit spreads and bank fees are abnormally high ... fee income accounted for 43 percent of the income of the banks in 2005 and 2006… The rates are only bearable for short-term, high margin trade operations – not for agriculture or industry." Paradoxically, these are the main economic activities in Mozambique. With interest rates fluctuating between 18 to 25 percent, plus the additional commissions and cost associated with the need of real guarantees, most of the small and medium scale enterprises (SMEs), who cannot afford these costs, are forced to limit investment to their own capital (Borgarello et al. 2004).

Current initiatives from the government and major international organizations (e.g., WB, International Finance Corporation [IFC], United Nations Development Program [UNDP]), such as incubators, seed capital, and venture capital should be disseminated and promoted to HSMs, which could have the double effect of increasing the probability of attracting and retaining them as well as inducing private sector development. Moreover, since one's recognition, mainly for those owing a personal business, by his/her community is strongly associated with professional-related elements very selective and local interventions, driven by an adequate ethnographic interpretation, and favoring entrepreneurship and empowering entrepreneurs, either carried out by governmental or non-governmental organizations, could have an additional positive effect on the strengthening and connectedness of institutional support networks for HSRs. Access to capital and opportunities to open a business could, partly, off set, the international vs. domestic wage differential discouraging return. Training programs should also be considered given that ten percent of the HSMs points to his/her own lack of initiative, risk aversion, and lack of experience the main reasons not to start a business.

It is important to point, however, that HSMs are very suspicious of government involvement. For 17 percent of the HSMs surveyed, governmental bureaucracy (e.g., average time of payment for services) and political preferences constituted major barriers to entrepreneurial activities. In this sense, the HSMs database could also be used for marketing a modernized and more efficient government (this overall positive improvement is actually what HSMs' perceptions reveal).

Finally, for private sector development, these findings highly recommend that the government revises its procedures for circulation of goods and services (e.g., complex and expensive imports

system), simplify its fiscal and taxing system, and make current complex labor and hiring regulations more flexible; all of which were noted to be major threats to business's achievements. For this to occur, purposely designed institutional inefficiencies, to protect some political interests, have to be corrected so as not to interfere with market rules.

ICT-related

While, on one hand, access to technology (e.g., computers, cellular phones) is being facilitated given that many packages offered by operators include free, or inexpensive devices, on the other, prices charged for the correspondent services are very high. Furthermore, many times, the quality was thought to be questionable by those surveyed. This research reinforces what the WB has been encouraging the government to do: to split "Telecomunicações de Moçambique" (TDM) into telecommunications backbone ownership and a service provider. Every service provider should compete for a market share under the same conditions. Currently, the TDM-service provider does not have to pay the price other operators have to pay to access the TDM-backbone.

Figure 4: Eastern Africa Submarine Cable System (EASSy)

Source: Muchanga (2008)

Additionally, the Eastern Africa Submarine Cable System (EASSy) (see Figure 4), currently being developed, together with the Seacon fiber optic cable in operations since June 2009, could allow prices for Mozambique's international connectivity to drop between five to ten times if cost projections are realized (Muchanga 2008).

The combination of these two technological developments – EASSy and Seacon – together with the political decision to split TDM would be a major achievement for further widespread access and use of ICTs in Mozambique. Moreover, the results from this research can be used as a reference point for further reflection on what satisfies HSRs with ICTs, and what constitutes barriers for their patterns of reintegration. Recommendations related to structural regional asymmetries are explored next when addressing the urban vs. rural dichotomy.

Governmental Programs-related

It could give the impression that by studying the role institutions play in influencing and constraining HSRs' behavior, this research was embracing DiMaggio and Powell's (1991) perspective of more autonomous (i.e., resilient) institutions. As discussed in the literature review, this is not the case. This research investigates the effect of institutions on HSRs precisely because it assumes that by understanding HSRs' attitude towards the institutional setting (i.e., the demand side), it may provide valuable signals for institutional change through government intervention (i.e., supply side).

Several professional opportunities-related governmental initiatives have already been suggested. With the goal of increasing the probability of attracting HSMs and retaining HSRs, government-led programs can include other areas of the institutional setting. In general terms, many initiatives have been suggested throughout this research. They lean more towards micro-level, bottom-up, type of interventions than on massive pushes. For instance, for firms, the government could introduce tax incentives for hiring abroad. For major NGOs and cooperating organizations, the government could create incentives for hiring HSMs as consultants, experts, technicians, so as not to rely so much on expatriates. This expatriate labor force not only charges higher salaries but also does not expend the money in Mozambique (Personal interview, January 2010). For Mozambican families and individuals in general, the government should continue its efforts towards modernization, decentralization, and transparency, since, in spite of the overall improvements, corruption, political interference, and bureaucracy are still major problems for the HSRs surveyed. Other initiatives highly rated by HSMs are housing programs, and support for technological and scientific activities.

In designing the post-2015 version of the MDGs, the Mozambican government and the UNDP should work together to include return programs for HSMs in their policies and initiatives. The International Organization for Migrations' (IOM) previous experience with the Migration and Development for Africa (MIDA) program could be a reference for an enhanced initiative.

As already introduced above, and to summarize the role government can have, this research showed that one is not just getting policy insights from the "institutional" category of variables/elements. All categories of variables considered offer policy insights for the design of new rules that will ultimately change those contextual factors and make the overall institutional setting more favorable for HSRs.

Urban vs. Rural -related

To say that Mozambique faces very severe regional asymmetries and because of that a stronger emphasis on regional development and budgetary decentralization should be considered is redundant when talking about one of the poorest countries in the world. Besides being redundant, there are already major policies in place in areas such as energy, education, and health. What this research can conclude more specifically is that HSMs in general, and HSRs in particular, are willing to move away from the capital city of Maputo and to embrace professional activities other than those for which they were trained. This propensity for mobility could encourage the government to increase the salary bonus for accepting jobs outside Maputo, since the current bonus of five percent has not proven sufficient. Locations such as Nampula, Tete, Manica, Quelimane are very highly rated in HSRs preferences. In more general terms, all policy recommendations suggested for professional opportunities and ICTs should factor this Maputo-bias in ways to mitigate the already prevailing

inequalities. Availability of information is crucial and firms or civil society could embrace this task of connecting HSRs with regional needs if the government cannot or will not.

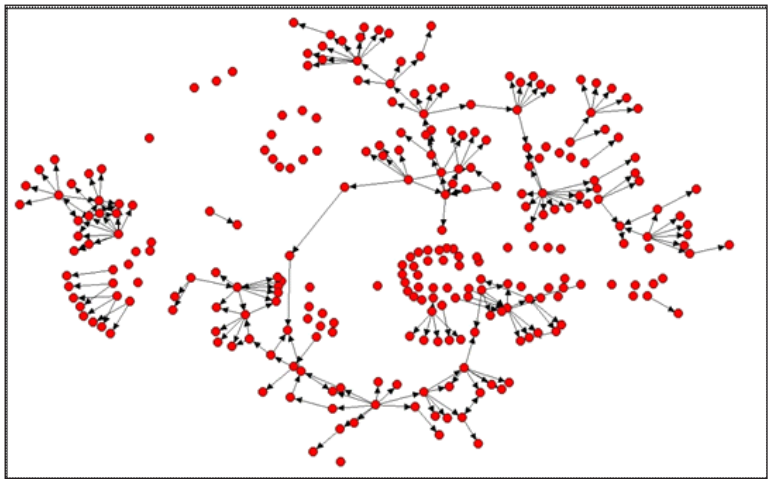
Future Research

In the light of the extant research, what more may be learned from further research on HSRs, institutions, and other contextual variables? What are the suggestions for the next generation of researchers? There are eight research avenues that derive naturally from this research. First, a parallel study could be conducted in other sub-Saharan Africa countries to assess both the extent to which contextual factors play similar (or dissimilar) roles on retention, and whether the results found are specific or not for Mozambique, namely in terms of the current high rate of return. Second, the same study, including the same sample, could be carried out within two or three years to factor in longitudinal aspects of HSRs' patterns of reintegration. Aspects to be covered should include institutional change (i.e., how did HSRs' perceptions of the institutional quality evolved?), dynamics in terms of individual's life satisfaction (i.e. happier or unhappier with life in Mozambique after returning), and, finally, to assess whether HSMs actually remained in the country or not. Conclusions about this last aspect would allow validating the usefulness of the proxies for retention used in this research.

Third, future research could delve further into the institutional diversity proposed by the IAD to study which sub-categories of rules better explain the results discussed throughout this research.

Central for the theory building of this research is the idea of collective actions towards some type of common interests eventually leading to institutional changes. In this sense, the social connectivity illustrated in Figure 5 (i.e., the network of relationships between HSMs that allowed building this study sample) can be viewed as the baseline of a social process either evolving towards a more cohesive or a more dispersed collective. Future research will deal with this question and its implications, in particular with the dynamics of ties within this community, and who, if empowered, could more likely lead change. For instance, as revealed by this study sample, the most important sources for business ideas are networking and contacts among friends.

Figure 5: HSMs' Social Connectivity



Source: Author's own construction

Agents' interactions can be modeled by networks evolving over time, with their evolutionary process of differentiation, selection, and amplification providing the system with novelty responsible for the growth in order and complexity. The focus will then be on the emergence of system regularities from local interactions between agents (i.e., system's evolution). Fifth, the study of this structural dynamics could be very useful to understanding how the demand side of institutional change behaves, and how it pressures the supply side for change. As suggested before, once rules of interaction are discovered, models can be constructed that will help us understand and predict political behavior (Moe 1984; Williamson 1985; Ostrom 2008).

Merging the fields of happiness studies with institutions and public policy proved very useful. Sixth, following Veenhoven's (2004; 2007) claims that governments should take happiness as an aim in public policy, research could also be carried across countries in order to create an index of HSRs happiness. This index would be calculated in the same terms that it was calculated in this research: the difference between Fukuyama's (1992) four items on the scale – those related with one's recognition by his/her community – and Diener's (1984) five items on the scale – those related to subjective assessment of one's well-being.

One of the aspects that this research was not able to address (neither was it the purpose of this research design) is the clarification of what *does not* constitute an "institution". Seventh, if institutions affect behavior, and if institutions differ in their capacity to affect behavior, as this research demonstrated, is there any threshold-level bellow which the value (i.e., capacity to affect behavior) of an "institution" is so low that should not be called institution? Which aspects of life are *not* institutions? What then are the conceptual and the material boundaries for the definition of "institution"?

One of the goals of the field research was to study aspects of extreme poverty in Mozambique. Surprisingly, however, only widespread very low material levels were found during the ethnographic experience in the field. These very low material levels translate, most likely, into a living standard of less than US$1 per day (purchasing power parity [PPP]). In this sense, they indeed reflect extreme poverty as defined by the WB. Nevertheless, the use of expressions such as "extreme poverty" has a much stronger connotation, namely related to human misery, starvation, and social anarchy. Even though these are the types of expressions that Western donors and international organizations use to create a sense of urgency towards intervention, they do not reflect the much more positive reality that both qualitative (e.g., research observations in the field across around two thousand miles) and quantitative (e.g., HSRs' perceptions of conditions in the home country as discussed throughout this research) data collected in Mozambique suggest. These organizations aim at reaching the goodwill of sponsors, tax payers, and other contributors to obtain financing for operations as well as for their own organizational existence. This research argues, however, that international cooperation lacks a deeper ethnographic interpretation of both indigenous conditions and their meaning for the human landscape and the well-being of the people.

Eighth, it would be interesting to investigate the mediating role these organizations (i.e., also a type of institution) play in mediating between reality in Africa, or in Mozambique in particular, and perceptions of that reality in the developed world. To what extent is this sense of (development) urgency, promoted by the international civil society, threateningly pressuring legitimate *but* fragile

governments? What motivates this sense of urgency? Could HSRs, empowered by their multicultural experience on both ends of the development ladder (i.e., developed and developing), play a role in smoothing this hypothesized asymmetry between indigenous reality and foreign perception of that reality?

Closing Notes

This research demonstrated that institutions do not operate isolated from other contextual factors for the political, economic and social development of an African state. But this research also demonstrated that (i) new policies and institutions can shape those other contextual variables if (ii) governments are informed of how interdependent variables are and if, *accordingly*, (iii) they prioritize interventions for institutional development given the very scarce resources available. More specifically, this research suggests that by promoting the retention, and also the return, of highly skilled citizens African countries can experience substantial growth in the stock of the education level of their populations in a much shorter time than if relying exclusively on the prospective of a better educated future generation.

While the focus of this research was on the relationship between individual behavior and contextual conditions in Mozambique, this research also suggests that in an era of "brain circulation" institutional design directed towards the highly skilled has a better chance of achieving its goals if conceived within a global partnership framework. Governments in host countries could alleviate nationalist and/or protectionist pressures related to the labor market and unemployment rates; even among highly skilled labor. Businesses in host countries considering exporting, opening offices abroad, or relocating their production infrastructure could, alternatively, more intensively hire highly skilled Africans. These have a very unique skill: the know-how both on modern business practices and ethics, and on the indigenous knowledge needed for success. International NGOs could also more intensively hire highly skilled African for their operations and consultancy in Africa. But above all the international civil society could lead the way towards the development of new platforms and standards for a global labor-market of circulating brains.

Fukuyama's (1999) evolutionary perspective of adaptation does not exclude the possibility of evolutionary systems experiencing collapse, dead ends, and poverty traps. A more proactive approach towards development in Africa in the tradition of Putnam (2000) must be taken; one that spans individual behavior, schools, governments, civil society, and the media.

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