TRANSNATIONAL TIES AND PERFORMANCE
OF IMMIGRANT ENTREPRENEURS:
THE CASE OF IT INDUSTRY IN ITALY

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Short bio

Jan Brzozowski is an economist. He works in the field of international migration and socio-economic development. He studied International Relations at Cracow University of Economics and Ethnic and Migration Studies at Jagiellonian University. In his PhD dissertation at Cracow University of Economics he analyzed the implications of brain waste for the economies of the sending countries. His research focuses on the economic implications of international migration for the sending countries, especially at the regional level. His scientific work also focuses on the economic integration of migrant and return migrants on regional labor markets. He is assistant Professor at the Department of European Studies at Cracow University of Economics.

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Transnational ties and performance of immigrant entrepreneurs.
The role of home-country conditions.

Abstract

This study contributes to the recent empirical literature on the performance of transnational immigrants' firms by investigating the effect of transnational ties on the firm's growth. In addition to the effect of the ties, the paper shows that home-country's institutional and socio-economic characteristics and country-specific entrepreneurial factors have a crucial role in shaping the ties-performance relationship. The evidence from a sample of immigrant-owned firms in the Italian ICT sector in the period 2000-2010 confirmed the relevance of the proposed model and helped in understanding a potential channel of improvements in immigrant firms' performance through transnational ties. Our results show the limited relevance of a direct, or linear, impact of ties on the growth of sales in immigrant-run firms in the ICT sector, whereas supports the crucial moderating role of home country characteristics on the ties-performance relationship.

Keywords: transnational entrepreneurship, ethnic business ties, immigrants' firms' performance, ICT industry, Italy

1. Introduction

Studies on immigrant entrepreneurship show that there are striking differences in the propensity to start one's own business and in the economic performance of immigrant-run firms among various ethnic groups. Although some of those disparities can be attributed to the age, education, immigrant status and the length of stay in the host-country, ethnic background remains an important determinant of entrepreneurship (Fairlie and Mayer, 1996). It influences immigrant entrepreneurs' business aims and strategies (Chaganti and Greene, 2002), as well as their economic performance in the host country (Ley, 2006). Authors who have analyzed this issue often point at the cultural and ethnic characteristics as a major driver which makes some immigrant groups more entrepreneurial than others: some cultures are more risk prone than others and some ethnic groups are more able to use effectively the ethnic resources of their group (ethnic network, social capital) in the destination country (Curci and Mackoy, 2010; Chand and Ghorbani, 2011; Koning and Verver, 2013).

In recent years there has been a growing research interest in transnationalism and transnational economic activities of immigrants. Transnational activity involves individuals' acts of migrating and settling down in a new destination, while maintaining continuous and regular links with the sending country. As Guarnizo et al. point out: "it is the rise of a new class of immigrants, economic entrepreneurs or political activists who conduct cross-border activities on a regular basis, that lies at the core of the phenomenon that this field seeks to highlight and investigate" (Guarnizo et al., 2003: 2013). And in their seminal paper, Drori et al. argue that: "certain ethnic groups are able to acquire cultural resources which facilitate their entrepreneurship pursuit [in the transnational social environment – our remark]" (Drori et al., 2009: 1008). This strand of research portrays transnational migrants as active agents, able to reap the benefits of simultaneous presence in both business environments: in the sending and destination economies.

The literature addressing this issue is increasingly pointing to the role transnational ties play in the performance of immigrant enterprises. Drori et al.(2009) and Ambrosini (2012) stress that international networks that link an immigrant to the home country could be perceived as a source of the economic success and competitive advantage of transnational entrepreneurs. Chen and Tan (2009) show that cross-border networks could enable and facilitate access to such crucial resources as information, local knowledge, capital, market or technology. Sequeira et al. (2009) find that the degree of embeddedness in the home country might affect the likelihood of success of a transnational enterprise. Patel and Terjesen (2011) provide evidence that network density affects positively the venture performance, and network range positive impact on firms' performance increases with the tie strength. Kariv et al. (2009) find that transnational networking has a significant and positive impact on the firms' sales in entrepreneurial venture of five ethnic groups (Chinese, Italian, Jewish, Indian & Sikh, and Vietnamese) in three metropolitan cities in Canada (Toronto, Montreal and Vancouver).

Despite the emphasis put on the cross- border ties as a crucial asset for migrant business, the extant literature mostly analyses how ties foster competitiveness by integrating – or creating – distinctive and competitive assets for firms run by immigrants in destinations countries. Less attention has been devoted to the home

country conditions which are influencing the generation of those assets, and almost all recent studies fail to take into account the specific socio-economic context in which networks are created, sustained and used. Yet, according to a broader transnational paradigm, it's not the migrants themselves, but: "states and the policies conducted within their borders that fundamentally shape the options for migrant and ethnic trans-state social action" (Waldinger and Fitzgerald, 2004: 1178). Besides, entrepreneurial activity is irretrievably embedded in social and cultural norms which contribute to shaping entrepreneurs' behavior in a society (Krueger et al, 2012). Therefore, it becomes crucial to look at the institutional characteristics, together with the social and economic conditions of countries of origin, in order to have better understanding of the role and impact of transnational ties on the performance of migrant firms. This is where our paper strives to contribute.

In addition to the above limitation, the empirical literature on the impact of ties on firm performance has some further gaps. Firstly, all the aforementioned studies focus on the entrepreneurship performance of few selected ethnic groups in Northern America. Both Sequeira and associates (2009) and Patel and Terjesen (2011) use data from Comparative Immigrant Enterprise Project (CIEP, Portes et al., 2002), which includes transnational immigrants from Colombia, the Dominican Republic and El Salvador to the United States. While the results of those analyses are extremely stimulating, the focus is solely on the selected (three) ethnic groups and on one destination country (the US). Besides, those data sets and studies include only transnational entrepreneurs who have access to cross-border networks, thus making it difficult to verify to what extent cross-border ties are a unique source of advantage of transnational entrepreneurs over the rest of immigrant entrepreneurs. Secondly, some of these studies emphasize that recourse to transnational networking varies with the ethnic origin (Kariv et al. 2009), whereas other scholars highlight the fact that almost every immigrant operating in a sector uses the same transnational practices (Terjesen, O'Gorman and Acs 2008). Therefore, the correlation between sectors, transnational ties and ethnicity needs to be investigated further (Koning and Verver, 2013). Finally, in the aforementioned studies, the performance of transnational entrepreneurs is analyzed within the cross-sectional dimension of data, which makes it impossible to capture the dynamic aspect of cross-border ties influence on the firms' performance.

The aim of our study is to investigate the effect of transnational ties on the performance of migrant entrepreneurs by explicitly taking into account the moderating role of specific characteristics of the country of origin, i.e. its institutional and socio-economic characteristics, including entrepreneurial attitude. The empirical analysis is carried out by using a unique data set of 411 immigrant entrepreneurs (IE) running a company in the Italian Information and Communication Technology (ICT) industry. Specifically, we test if the impact of transnational ties on firm performance is affected by home country-specific factors which act as multiplicative factors of the basic relationship between ties and performance.

Our findings confirm the crucial role of home country characteristics as moderators of the ties-performance relationship, even if in absence of a direct impact of ties on firms sales performance. More specifically, home-country institutional socio-economic characteristics (such as macroeconomic stability, the level and quality of education, level of corruption and level of the entrepreneurial endowment) and entrepreneurial attitude (uncertainty avoidance, long-term orientation, the locus of control and need for achievements) play a role in explaining the differential impact of ties on firm performance, especially when specific home country characteristics are taken into account. This analysis models the ties-dependent performance of transnational entrepreneurs in a more nuanced and indirect way than the theoretical literature on transnationalism usually prescribes.

In addition to these results, our study contributes to the existing literature in several aspects. Firstly, we investigate the performance of immigrant enterprises in one of most important economies in Europe, i.e. Italy, where the presence of a very fragmented migrant population, settled in a territory rich of social, economic and demographic differences, makes the country 'the paradigmatic case of Southern Europe migration' (King 2002). Secondly, differently from most papers on transnational entrepreneurship that focus on informal and marginal sectors of the economy, or on ethnic niches, we study a sector of core significance for almost all industries of a modern economy, i.e. the ICT industry. This industry is one of the pillars of globalization, as ICT companies can easily span across international borders, and benefit from transnational ties aimed at creating and supporting technological and business assets and competencies which are at the core of the competitive structure of

the industry. Thirdly, we carry out a comparative, dynamic analysis of transnational ties in immigrant (IE) and transnational entrepreneurs (TE) firms' performance by exploiting the panel structure of our dataset. Finally, the sample used in the empirical analysis includes only firms run by an immigrant person, thus strengthening the connection between the potential exploitation of ties, wherever they are in the company (CEO, board, shareholders etc.) and the actual decision maker of the company. We are also confident that the analysis overcomes some limitations arising from the use of small samples: after cleaning the full sample from marginal business initiatives, the subsample of immigrant-run firms included in the empirical analysis comprises 411 companies, about 21% of the universe of ICT firms with at least one immigrant person filed in public registries.

This article is organized as follows. In the second section, we provide the basic definitions, present theoretical linkages between the variables of interest and derive theoretical propositions for the empirical analysis. In the third section, we describe our data set. Empirical analysis is carried out in the fourth section. The fifth section concludes and develops some recommendations for policy-makers in the sending and receiving countries.

2. Theoretical background and hypotheses

Our study is related to three distinct fields of research, namely the ethnic entrepreneurship, immigrant entrepreneurship and transnational entrepreneurship. In this section we will shortly present how these different research strands perceive the growth perspectives of enterprises, which in turn will allow us to formulate the hypotheses for our empirical research.

The earliest research is centered around the concept of the ethnic entrepreneurship, developed by the sociologists from the 1960s. According to most popular definitions, the ethnic entrepreneurs are such entrepreneurs that are members of the group that has "a common origin and culture" (Aldrich and Waldinger, 1990: 112) and "is known to out-group members as having such traits" (Zhou, 2004: 1040). Moreover, those are often the individuals who are both owners and operators of their own businesses. Ethnic entrepreneurs operate mostly either in their ethnic enclave[s],

serving co-ethnic population in a certain location or act as middleman minorities, using their ethnic resources to trade between the host society, their ethnic group and the country of origin (Koning and Verver, 2013). Those forms of entrepreneurship are often perceived as a kind of survival strategy used by the individuals who – having no viable economic alternatives – have to rely on the social capital of the ones' ethnic group (Drori et al., 2009). Consequently, the term ethnic entrepreneurship refers to such businesses run by immigrants that have to accept fierce competition, small profit margins and limited growth perspectives (Rath and Kloosterman, 2000), while the more successful immigrant enterprises lose their ethnic mark and get incorporated into the mainstream economy (Zhuo, 2004).

Studies on immigrant entrepreneurship are mostly interdisciplinary, located within such different disciplines as business economics, management studies, but also political sciences or sociology (Rath and Kloosterman, 2000; Aliaga-Isla and Rialp, 2013). To date, this strand of research has not generated a single theoretically based expectation as to the performance of immigrant enterprises and their development potential. On the one hand, the proponents of superior performance hypothesis claim that immigrant businesses fare better than the firms owned by non-immigrants. Immigrants are described as individuals positively self-selected from the home country population, highly endowed with human capital and entrepreneurial capacities. They are eager to take risks and to take the advantage of the possibilities that native entrepreneurs do not see or are afraid to make use of. Therefore, they exploit some underserved markets such as ethnic market, or are able to expand internationally, opening branches in the home country. Especially the access to ethnic and migration networks places immigrant entrepreneurs in the advantageous position, and facilitates import/export activities, which in turn enables the further enterprise growth. On the other hand, the proponents of underperformance hypothesis argue that immigrant entrepreneurs have worse economic perspectives than the non-immigrant businessmen. They are pushed to self-employment and survival oriented entrepreneurship by the unfavorable employment and labor market conditions in host country. They lack country-specific human capital (including language skills) and social capital (social networks, including business networks), their access to external financing is limited, they often face discrimination from the native customers (Neville et al., 2014). These deficiencies are

visible even among second-generation immigrant entrepreneurs and have a negative impact on their economic performance (Beckers and Blumberg, 2013). In general, for these firms ties are a substitute for missing individual or firm-specific capabilities. Thus, ties are beneficial to firm growth because they compensate the lacking human and financial capital required to compete in the host country.

Ndofor and Priem (2011) suggest that superior performance (overperformance) and underperformance hypotheses must not be mutually exclusive: the unskilled immigrants often chose self-employment in an ethnic enclave as the alternative to the poorly paid jobs in the secondary labor market, while the highly skilled immigrants engage in the successful forms of entrepreneurship in the dominant market. The ethnic enclave strategy does not necessarily imply poor performance of the immigrant enterprise, but for its success requires "strong ties of social capital within an immigrant community, because social capital maximizes the benefits of coethnic advantage" (Ibidem: 798), while the performance of the firms that adopt dominant market strategy depends on immigrant's access to the host country's human and economic capital. The significant role of ties is present, but it is mainly limited to the linkages with the ethnic community.

Curci and Mackoy (2010) provide a useful classification of immigrant entrepreneurship, which links the type of business with its growth potential. This typology comprises four basic categories of businesses: highly segmented, product-integrated, market-integrated and highly integrated. Firms from highly segmented sector offer ethnic goods and services and are targeted at their co-ethnic customers. These are mostly ethnic restaurants and shops: the development of such enterprises is hindered by the size of ethnic market and the pace of growth of ethnic community. Product-integrated category includes immigrant firms that provide mainstream products to the ethnic customers. Such enterprises provide for instance medical and real estate services or sell used cars. As in the previous category, the growth of those companies depends on the size and growth of ethnic market. Still, those companies have to compete against the mainstream businesses that also target the ethnic market. Immigrant enterprises from the market-integrated category are oriented toward non-ethnic customers by offering them the products and services linked to their ethnic culture. Therefore, they compete within the mainstream market against other companies that provide ethnic

products and services. Their growth potential depends on the preferences and the level of demand of non-ethnic customers for ethnic products and services. Within this framework, the ethnic entrepreneurship can be perceived as one of the manifestations of the immigrant entrepreneurship, which is a more inclusive term. The immigrant firms from the highly-segmented group are equivalent to the ethnic enterprises operating in the ethnic enclave, while the companies from the product-integrated and market-integrated categories are the counterparts of ethnic enterprises acting as middleman minorities. Finally, there are immigrant businesses in the highly-integrated category: the firms that are operating on the mainstream markets, providing non-ethnic products and services to the general customers. Those immigrant enterprises are the most integrated into the economy in [a] host country, but have to compete with the domestic and international producers. Therefore, their development potential depends on the creativity of the entrepreneur and one's ability to provide high-quality products or services. In this category there are represented firms operating in various economic sectors, including also the ICT sector (Hart and Acs, 2011). This last group of immigrant entrepreneurs is the closest to the group we are considering in this paper.

Finally, the transnational entrepreneurship is a field of study that has been initially developed by anthropologists and sociologists (Portes et al., 2002), but subsequently has been increasingly important for the economists within the domain of international business. Transnational entrepreneurship implies immigrant business engagement not only in the host country, but also in the country of origin. Thus, transnational entrepreneurs are peculiar immigrants, namely the "social actors who enact networks, ideas, information, and practices for the purpose of seeking business opportunities or maintaining businesses within dual social fields" (Drori et al., 2009: 1042). The focus of transnational paradigm is on the individual actor (i.e. transnational entrepreneur), who is able to exploit the opportunities that are either missed or unavailable for entrepreneurs active in one geographical location only (Walther, 2012). In this regard the studies on transnational entrepreneurship differ substantially from the research on transnational corporations, as in the latter the focus is on the firm, not the entrepreneur in person.

Initially, the research on transnational entrepreneurship has stressed the difficulties and obstacles that an individual must face in order to cross borders and face

new, different institutional conditions. The statement was that transnationalism and transnational entrepreneurship threaten the traditional integration and assimilation model of immigrants within the host country socio-economic structures. Less attention, however, has been paid to the performance of such enterprises. Still, the analysis of case studies and the first typology of such businesses suggested that the growth potential of transnational enterprises is rather limited. According to Landolt and associates (1999) these were: the circuit enterprises - offering courier services between host and home countries; cultural enterprises - offering ethnic food and cultural products (music, newspapers, books); ethnic enterprises - which have been maintaining transnational supply networks and the return migrant micro-enterprises. The first three types of transnational enterprises were operating in the ethnic enclave, while the fourth type were unstable businesses in the early phase of development. Again in this case, the focus of the ties effect research is on the benefits the firms have from interacting with the ethnic community or with ethnic related markets for goods and services.[1]

Saxenian (2006) argues that transnational entrepreneurs are highly visible and successful in the information and communications technology (ICT) sector in the US. The growing mobility of the capital, products, services, workers and information, as well as the the rise of global chains of production, falling costs of transportation and communication allow even small firms in this sector to internationalize. Most of the ICT firms in Silicon Valley are "born global", subcontracting manufacturing or software development and selling their products and services beyond American market almost immediately from the beginning of their existence. In this framework, Saxenian describes the immigrant transnational networks as the source of their unique advantage. In the ICT business nowadays the ability to quickly find a foreign partner is crucial; moreover building international working teams and managing them successfully requires cultural embeddness in dual social fields, language skills and mutual trust. This in turns is helped by the access to transnational networks. Transnational entrepreneurs which have ties with their country of origin, are able to hire skilled workers at lower

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[1] A more positive picture of transnational entrepreneurs is presented by Miera (2008). She describes some advantages of Polish entrepreneurs in Berlin, who have access to transnational networks, over traditional Turkish immigrant entrepreneurs. As Polish entrepreneurs are highly mobile, constantly circulating between Poland and Germany, they are able to identify the differences in prices and income and conduct cross-border trade. Also, the immigrant-owned firms in the construction and cleaning sectors can rely on a growing pool of transnational workers, who circulate back and forth between those two countries, thus making for them more likely to open branches in both countries.

cost, have an easier access to knowledge and technology and cheaper ways to finance their new projects.

Following the above discussion, transnational networks should have a direct, positive impact on immigrant entrepreneurs' performance, as those networks enable them to access financial and human capital needed to support firm competitiveness, or allow them to collect crucial information for the business activity (Massey et al., 1998). It could be expected that transnational networks should have beneficial effects on the immigrant's firm in the whole company's life cycle, i.e. from the phase of starting an enterprise, through its growth and evolution, in the process of overcoming existing obstacles (if they arise), but also when trying to seize new market opportunities (Walther, 1012). Moreover, as Saxenian (2006) argues, the access to transnational network in the ICT sector should improve performance by facilitating the recruitment of skilled workers at a lower cost, the setup of partnerships needed for the new project development, the exploitation of flows of knowledge and technology between the business partners – as compared to the immigrant entrepreneurs who do not have such cross-border ties. Therefore, we can formulate the following hypothesis:

Hypothesis 1: The access to the transnational networks should affect positively the growth of the immigrant enterprises, as compared to the immigrant enterprises that do not have access to such networks.

Still, some immigrant entrepreneurs, even if they retain transnational business ties with their home country, might not reap direct economic benefits from those linkages. Such a situation might arise for a number of reasons.

Firstly, the immigrants who engage in transnational entrepreneurship must not necessarily be motivated by purely economic factors. Theoretical literature that investigates the determinants of Diaspora economic engagement suggests that immigrants might invest in the home countries due to financial, but also the emotional and social-status expectations. Therefore, they also seek emotional satisfaction from their altruistic activities, hope to maintain social bonds, get social acceptance and recognition in the local community at home (Nielsen and Riddle, 2010). As Portes and Yiu note: "bounded solidarity and trust stemming from a common national origin

underlies many instances of risk-taking across borders" (2013:80). Therefore, becoming a transnational entrepreneur might be a decision based on moral and social considerations, and the economic purposes might remain a secondary factor.

Moreover, the immigrants can maintain business linkages with the home economy as a "backup option": an alternative market for their goods or services in case of economic difficulties in the host country. Home economy can be perceived as a safe haven in the case of a possible return migration, as many immigrant entrepreneurs do not intend to remain permanently at the destination (Stark and Bloom, 1985). This strategy is especially popular among the immigrant entrepreneurs with the homeland orientation, which retain homeland identity and language (Gillespie et al., 1999). In such situation, the current profitability of transnational entrepreneurship must not be the main concern, as the immigrant hopes to secure one's future income.

Nkongolo-Bakeda and Chrysostome (2013) have proposed a theoretical framework, in which they consider the main determinants of transnational entrepreneurship[2] and the development potential of such activities in the home countries. The most interesting group of factors that influence the creation, but also the success of transnational entrepreneurship is the institutional and socio-economic environment of the home country, which includes laws and regulations, economic conditions, receptivity of the national government toward Diaspora members and specific entrepreneurial culture in the home country. A similar set of factors that foster transnational entrepreneurship has been proposed by Newland and Tanaka (2010), comprising a strong economic dynamism of the home country, Diaspora engagement policies, access to financial capital, favorable socio-cultural perceptions of entrepreneurship, and finally, the availability of critical mass of human and social capital in the home country. As some of those determinants remain ambiguous, they need a closer attention and a more precise description.

A socio-cultural image of entrepreneurship in the home country is a major factor which can influence the performance of transnational entrepreneurs. As the literature on ethnic entrepreneurship suggests, some national cultures support risk proneness, and they shape attitudes which enable the use of their ethnic resources (including transnational networks) in the destination, but also home country (Curci and Mackoy,

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[2] We should note that they use expression "diaspora international entrepreneurs" instead of transnational entrepreneurship, but the meaning of the former is the same as the latter.

2010; Chand and Ghorbani, 2011; Krueger et al 2013). In the countries in which the cultural values do not support productive entrepreneurship, the economic success of new businesses is less likely. For instance, Nkongolo-Bakeda and Chrysostome (2013) describe the case of traditional sub-Saharan rural communities, in which the perception of wealth accumulation greatly differs from the capitalist one. In those communities, wealth is not accumulated for productive purposes, but it is rather spent for social events and consumption activities. In such communities, a transnational entrepreneur is expected not to increase employment or level of income of local population, but rather to share one's wealth with others during the ceremonial feasts.

The academic literature investigating the impact of the national culture characteristics on the entrepreneurship dynamics has provided several theoretical explanations of this relationship. The most well-known proposal is the Hofstede analysis of the dimensions of national cultures (Hofstede, 2001, 1993). According to Hofstede, the values that distinguish countries (rather than individuals) from each other can be grouped statistically into several clusters or dimensions, namely: Power Distance, Uncertainty Avoidance, Individualism versus Collectivism, Masculinity versus Femininity, Long-Term Orientation and Indulgence versus Restraint. Out of those, two variables seem to be particularly strongly correlated with entrepreneurial attitude of the population: Uncertainty Avoidance and Long-Term Orientation (Miller & Le Breton Miller, 2005)**.** Uncertainty Avoidance (RISK**)** deals with a society's tolerance of uncertainty stemming from an unknown future and cognitive ambiguity. Uncertainty avoiding cultures try to minimize the likelihood of such surprising and novel situations by creating strict laws and rules, safety and security measures. The opposite type, uncertainty accepting cultures, are more tolerant of opinions different from what they are used to and they try to have as few rules as possible. Studies conducted by Mueller and Thomas (2000) or earlier by Davidsson and Wiklund (1997) tend to confirm that cultures characterized by low level of uncertainty avoidance score high on entrepreneurial orientation and eventually foster a higher rate of new businesses.

Long-term orientation (LTO) is "defined as the tendency to prioritize the long-range implications and impact of decisions and actions that come to fruition after an extended time period" (Lumpkin et al., 2010). LTO fosters pragmatic virtues oriented towards future rewards, in particular saving, persistence, and adapting to changing

circumstances. Short-term oriented societies foster virtues related to the past and present such as national pride, respect for tradition, preservation of "face", and fulfilling social obligations. In a recent discussion of the research on the impact of LTO Lumpkin, Brigham and Moss (2010) concluded that "LTO will be positively associated with innovativeness, proactiveness, and autonomy but negatively associated with risk taking and competitive aggressiveness".

On average, it is reasonable to expect that the transnational entrepreneurs that operate in the home countries where the socio-cultural perception of entrepreneurship (as measured by Hofstede RISK and LTO dimensions) is favorable, have a better economic performance as compared to other transnational entrepreneurs.

Another important determinant of transnational entrepreneurship performance is the institutional environment of the home country. A burgeoning literature initiated in mid-1990s has studied the relationship between various dimensions of governance and the business dynamics (LaPorta et al., 1999, Djankov et al., 2002). On one hand all components of good governance (political stability, regulatory quality, rule of law and low corruption etc.) reduce business risks and increase the attractiveness to invest in a home country. On the other hand, the economic context of developing countries might generate ambiguous incentives for entrepreneurship: the lack of attractive dependent employment and less stable market environment might promote more entrepreneurship, but the less trusty regulatory environment might discourage more risk averse individuals from becoming entrepreneurs. For instance, the academic literature has empirically supported the thesis that corruption negatively impacts on productive entrepreneurship. The theoretical reasoning is quite straightforward: corruption is beneficial for an economic agent when a corrupt official can create or distribute special rents or privileges (Rose-Ackerman, 1999). Such rents are more likely when the economy is relatively closed, highly regulated and when the administration acts in a non transparent way without the efficient judicial control and beyond the control by democratic institutions (Bardhan, 1997; Treisman, 2000). Corruption is hence more likely to reduce the business efficiency of transnational ties, since it makes transactions in a corrupt environment more risky. Corruption is also highly correlated with the quality of legal system and the effectiveness of contract enforcement. The importance of legal factors has been confirmed in a myriad of empirical studies and theoretical reasoning (for a

review see Beck, 2012) and the contract enforcement is especially important for transnational business regulations, since an informal enforcement can never be a perfect substitute for the weakness of judicial institutions.

Finally, an important determinant of the transnational entrepreneurs performance is the stock of human capital available in the home country. In order to reap benefits of transnational ties indicated by Saxenian (2006; i.e.: recruitment of skilled workers, easiness of forming new project partnerships, knowledge and technology spillovers), for immigrant entrepreneurs "there must be something to return to" (Portes and Yiu, 2013: 92). Therefore, the access to young and well-educated labor force at home is expected to support both transational entrepreneurs in the host county and their operations in the home country.

According to the previously mentioned theoretical discussion, the transnational entrepreneurship is a peculiar form of the economic activity of immigrants in the host and home country, which can be motivated not only by economic factors, but also by emotional and social ones. In view of this, ties can be maintained even if the current economic situation at home is - in a given moment - unfavorable, and the institutional socio-political constraints to transnational entrepreneurial activities remain substantial. Moreover, the performance of transnational entrepreneurs depends to a large extent on the set of factors associated with the socio-economic characteristics of the home country (law enforcement, democratic stability, economic freedom etc.), and the cultural characteristics of the ethnic immigrant group (including the favorable or unfavorable perception of the entrepreneurship by each national culture).

Consequently, the effect of the transnational ties on the performance of such enterprises must not be of a direct nature. The relationship between transnational ties and the growth of the enterprise can also can also have an option value: the "productive" activation of links may only occur when institutional and socio-economic conditions in the home country become relatively stable and more favorable for business operations. Thus, we could formulate the following hypothesis:

Hypothesis 2: The effect of the transnational network on the immigrant enterprise performance depends on the immigrant's country of origin characteristics

as summarized by its socio-economic and entrepreneurial characteristics of the original ethnic immigrant group.

3. The data set

Our empirical investigation starts from the universe of migrant firms in the Italian ICT industry. Data are gathered from the statistical archive of the Italian Chamber of Commerce, which represents the most complete and reliable source of information about entrepreneurship in Italy. The database contains all the positions held by people who conduct independent business activities (essentially owners/shareholders and administrators). The registration is based on the birthplace and not on the citizenship of persons. To focus on the group of migrants coming from the developing countries and emerging economies, we excluded people born in Western Europe or in other developed countries. Our choice allows us to reduce the heterogeneity of the migrant group and to focus on people who moved to Italy from the developing and emerging economies[3].

We selected only businesses belonging to the ICT industry - or related sectors - identified by the J62 code in the classification of economic activities proposed by the Italian Institute of Statistics (SIC code 737). The focus on the Information Technology industry introduces two elements of interest for the identification of the empirical model. Firstly, this sector is a tie-intensive industry, which perfectly fits the aim of assessing the impact of ties on performance (Nanda and Khanna 2010; Docquier and Rapoport 2012; Saxenian 2006). Secondly, the characteristics of the Italian IT industry - moderately declining in market size and heavily concentred on big players and large incumbents - provides an interesting framework to identify the role of cross border ties: because of this peculiar industry structure and dynamic, immigrant entrepreneurs are not easily able to exploit the benefits of a growing demand, or they cannot rely on a large demand from their ethnic community. Therefore, firm growth is greatly dependent on firm-specific factors among which transnational ties with home country play a crucial role.

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[3] On the other hand, by focusing on developing and emerging economies, we are able to investigate the possible impact of socio-economic environment on possible activation of transnational ties, as in those countries those characteristics remain more heterogenous than in the case of the developed economies.

The initial sample from the public registry consisted of 1,953 firms operating in the ICT sector, with a total of 5,927 positions, mainly shareholders (3,867) (see Table1). Most of these positions refer to shareholders, which account for 65% of total positions, whereas President and/or board members are only 110. We excluded 866 individual firms without financial information, or firms running marginal business, e.g. Internet coffee shops, thus remaining with 1,087 firms left. A telephone survey on all 1,087 companies collected 485 answered questionnaires; the response ratio is significantly higher than for most of the postal surveys (Rueda-Armengot and Peris-Ortiz, 2012). In this group of firms, shareholders account for 73% of total positions, whereas CEOs constitute only 24%. Also, 442 CEOs and 38 Presidents have a share in the company. As for the companies, 451 firms out of 458 are partnership or joint stock companies, whereas a minor part is composed of individual firms or sole proprietorship (34). A subset of this sample comprising only those firms run by an immigrant CEOs/administrators (411 companies) has been used in the empirical estimates. A descriptive analysis of this subsample is reported in the last column of Table 1 and in Table 2 and 3.

As for the questionnaire, after asking about the year of starting business and the details of the person currently managing the company, we asked about cross border ties Cucculelli, M. and G. Morettini. 2012. We investigated their existence and their intensity, as well as the temporal evolution during the firm's life cycle (Salaff et al. 2003). Table 2 summarizes the distribution of ties by year of activation and number of ties. About 69% of sample firms have less than 5 ties, and the majority of these ties (41% out of 69%) has been started in the most recent period. In general, almost half ties have been activated from 2005 onwards, thus showing how this phenomenon is a rather new one, at least in the Italian case. Also, the intensity of ties activation in recent years is larger for those firms that became active in international networking more recently. Table 3 summarizes some characteristics of the sample divided between firms with ties and without ties. Firms with ties show an export activity more intensely than firms without ties, in particular for destination markets different from home country: the share of export is 10.1% and 24.3% respectively for the home market and other markets. No significant differences for the CEO age and the number of activities run in the IT sector. More different the case of the age of arrival in Italy, which is significantly larger for

CEOs in tie-intensive firms (22 vs 14), and the firm age, which is significantly lower for tie-intensive firms. This aspect confirms the presence of a business model where ties are prevalently activated by younger firms, run by highly-educated CEOs who are able to set up a considerable number of ties to support the company competitive structure.

4. The Empirical Analysis

We first introduce the empirical model specification and the estimation approach. Then, we present the description of the variables used in the empirical analysis and the main results of the estimated regressions.

4.1 The estimation procedure

We adopted the empirical firm growth model which was first introduced by Evans (1987a & 1987b) and now is commonly used in firm growth studies (Das, 1995; Heshmati, 2001; Calvo, 2006; Coad and Rao, 2008; Cucculelli and Ermini, 2013):

$$\ln SIZE_{i,t} - \ln SIZE_{i,t-1} = \alpha + \beta_1 \ln SIZE_{i,t-1} + \beta_2 \ln AGE_{i,t} + u_{i,t} \qquad (1)$$

The growth of any firm i, which is measured by the logarithmic difference of size at time t and size at time $t\text{-}1$, is a function of past SIZE and AGE, taken as logarithm, whereas $u_{i,t}$ is a lognormally distributed error term. SIZE is measured as net sales, whereas AGE is the number of years passed since the firm's foundation; both of these variables are taken as logarithm.[4] According to Jovanovic (1982), age is expected to negatively affect the firm's growth to reflect the diminishing returns of learning on the firm's dynamics. Assuming unobserved heterogeneity among firms, we rewrite the error term of our model to obtain the following:

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[4] We follow Coad and Rao (2008) in adopting sales as dependent variable as sales growth is a particularly meaningful indicator of performance (Coad and Rao (2008, p 634), We also rely on sales instead of employees (as in the case of Henrekson, and Johansson,2010), because a productivity effect has been detected by a number of papers on the Italian economy. As far as the variable AGE is concerned, its use of the linear contribution is driven by our adoption of the Jovanovic model, whereas the exclusion of its quadratic term is driven by the results of a t-test that rejects the joint significance of the linear and quadratic variable coefficients.

$$\ln \text{SIZE}_{i,t} - \ln \text{SIZE}_{i,t-1} = \alpha + \beta_1 \ln \text{SIZE}_{i,t-1} + \beta_2 \ln \text{AGE}_{i,t} + \mu_i + \nu_{i,t} \qquad (2)$$

where μ_i is the unobserved time-invariant firm-specific effect and $\nu_{i,t}$ is the usual error term. In determining firm growth, in addition to age and size, we tested the role played by transnational ties by augmenting the previous model with the variable TIES, a dummy variable that takes the value of 1, if the firm started a new tie in year t and 0 otherwise. To capture the potential heterogeneity of the tie effect due to "external" structural factors, we controlled for sets of contingent factors which interact with the main independent variable: the effect of country-specific economic and social variables fostering entrepreneurship (COUNTRY) and the characteristics of the entrepreneurial endowment available at the country level (ENTREP).[5] The final model is given as follows:

$$\ln \text{SIZE}_{i,t} - \ln \text{SIZE}_{i,t-1} = \quad \alpha + \beta_1 \ln \text{SIZE}_{i,t-1} + \beta_2 \ln \text{AGE}_{i,t} + \qquad (3)$$
$$+ \beta_3 \text{TIES}_{i,t} +$$
$$+ \beta_4 \text{TIES}_{i,t} * \text{COUNTRY} +$$
$$+ \beta_5 \text{TIES}_{i,t} * \text{ENTREP} +$$
$$+ \beta_6 \text{COUNTRY} +$$
$$+ \beta_7 \text{ENTREP} +$$
$$+ \mu_i + \nu_{i,t}$$

The estimation method employed is the fixed effect panel data regression (Greene, 1993; Baltagi, 1995; Verbeek, 2000).[6] The choice of this technique has been guided by the result of the Hausman test, which points towards rejecting the random effect approach because there is evidence of correlation between the independent variables and μ_i. All variables are in logarithms; the only exception is TIES which is a dummy variable, that takes the value of 1 if the firm activated a new tie in year t and 0 otherwise. As for the control variables, estimates of Eq (3) reported in Table 4 include

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[5] A description of variables included in model (3) is given in Section 4.2 and Table A1 in the Appendix.
[6] This approach corrects the bias due to the presence of a fixed effect. We have also tested our empirical specification by a panel dynamic model to consider endogeneity (see Arellano and Bover, 1995, and Blundell and Bond, 1998, for econometric reference and Yang and Huang, 2005, for an empirical application to firm growth). Based on standard evaluation tests (Sargan and AR1–AR2 tests), in this paper we prefer to rely on the results of fixed effects panel model.

the impact of localisation in major hubs (Milano, Roma, Torino, Bologna, Napoli, Palermo), CEO gender, years elapsed from the activation of the first tie, firm age, and CEO education (dummy equal to one if the CEO has a university degree). CEO age and the CEO age at arrival in Italy has been excluded because of the potential collinearity with firm age. Finally, dummy variables for years (2000 to 2010) and geographical location of the company (North, Centre and South Italy) are included as control variables.[7]

We included all constitutive terms in the empirical estimates, as in the standard approach to moderation analysis. However, we have to note that the characteristics of most of the terms that we use as moderator in Eq (3) – i.e. social and economic aspects and entrepreneurial attitude in home country – hardly affect our dependent variable (i.e. firm growth) directly. They are more likely to affect the nature and the characteristics on firm ties, which probably are the better predictor of the impact these variables on individual firm performance. Therefore, Table 4 reports only the coefficients of the interaction variables, whereas the coefficients of main constituent terms are reported in Table A2 in the Appendix.

4.2 Variables

The firm growth model is estimated for the total sample of firms. To corroborate our model specification, we interact the main variable with variables summarizing i) the role of home-country features and ii) the characteristics of its entrepreneurial endowment. The detailed description of variables can be found in the appendix.

4.2.1 Home-country characteristics affecting entrepreneurship (COUNTRY)

An analysis of the immigrant entrepreneurs' home-country's features affecting entrepreneurship includes several economic variables, along with institutional, cultural, geographical, and relational factors. The main categories of the explanatory variables may be summarised as follows:

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[7] A t-test of the mean value of major variables has been performed by comparing the early and late respondents. i.e. mean values for the first 70 (about 15% of total sample) and the last 70 interviewed companies. These tests do not show any significant difference in the mean values of the following variables: sale growth, number of ties, average tie tenure, average firm age, employees. We have found moderately significant differences in the CEO education. The inclusion of this variable in the estimated equation help controlling for the sample heterogeneity.

- Economic and demographic variables, such as per capita income, the unemployment rate, the size and the age structure of the population;
- Measures of the socio-institutional environment, such as the degree of corruption and the perception of democracy.

As for the first set of variables, we consider the logarithm of population (POP), the GDP per capita (*GDP*) and the country unemployment rate (*UNEMPL*), in order to verify whether country size, income and job opportunities contribute as pull factors to foster the performance of migrant transnational business.

The education level and the demographic structure of the country may help increase the effectiveness of transnational ties. Migrants would benefit from ties with countries having a higher incidence of young (*YOUNG*) and educated (*EDUC*) individuals over total population. *EDUC* has been obtained as a country average from the last two waves of the World Value Survey: 2005 and 2010-12 (ref n.238 of the WVS).

The second set of variables is related to socio-institutional aspects: the level of corruption and the existence of a democratic political regime, aimed to evaluate whether the institutional framework of the home country has an impact on migrant businesses. All these variables have been obtained from the last two waves of the World Value Survey (WVS): 2005 and 2010-12. The variables are CORR, which is a measure of corruption drawn from the question V201 of the WVS and DEM, which is the mean value at a country level of question V163 of WVS that asks for an opinion about the democratic environment of the country.

4.2.2 Home-country entrepreneurial structure (ENTREP)

The second category of contingent factors which we interact with the main independent variable (TIES) are the characteristics of the entrepreneurial endowment available at the country level (ENTREP). The first group of those variables comes from the Hofstede analysis of the dimensions of national cultures (Hofstede, 2001, 1993). We have selected two variables: Uncertainty Avoidance (RISK) and Long-Term Orientation (LTO)**.**

When it comes to the entrepreneurial endowment, we additionally relied on a number of variables drawn from the WVS analysis. In order to reduce the number of variables to some principal variables directly connected to the entrepreneurial status of the country, we run a principal component analysis to summarize variables in a single index. Principal component analysis summarizes the information contained in an original set of variables into many fewer variables, and defines new variables (the principal components) that are a linear combination of the initial variable. In the analysis, our index is the first principal component which captures no less than 50% on the variance in the dataset. In our dataset, we haven't found any case with a principal component with less than 50% of total variance.

The first variable is the entrepreneurial tendency that children get from the family (FAM). We obtained the variable as a principal component among these variables (the WVS code in parentheses): autonomy/independence (V12), hard work (V13), sense of responsibility (V14), Creativity (V15), Commitment (V18). The second variable (TARGET) is the principal component among four variables indicating the definition of professional targets: make parents proud (V64), follow my instinct (V65), complacency (V66), self-confidence (V67).

Two variables have been directly extracted by the WVS dataset and they refer to the locus of control: LOCUS1 (V46) and LOCUS2 (V122). In addition to the locus of control, we also got a variable which proxies for the need for achievements (ACHIEVE; V48). Moreover, a principal components variable has been computed among five variables indicating the entrepreneurial environment (ENVIR; V116 – V121).

An additional set of variables is introduced to ascertain whether the performance depends also on differences in the level of entrepreneurial capital which affect the impact of ties on competitive position. As Yuengert (1995) finds that higher self-employment rates in the immigrant's country of origin correlate with higher self-employment rates among these immigrants in the US, we introduce the variable SELF which summarizes the self-employment rate at country level from question V241 in WVS. The faction of self-employment is defined as the number of self-employed in a country divided by total number employed (across the 2005 and 1020-12 waves for a given country).

We also include an average establishment size from the UNIDO database (SIZE), which reports, country by country, the number of establishments and total output for a set of manufacturing industries. Aggregating over the last two WVS surveys and all industrial sectors we compute the average output per establishment for each country and we use it as a time-invariant variable in our panel estimate. Finally, we include a variable FIRM / POP, which indicates the entrepreneurial structure of the manufacturing industry, as it mainly represents the intensity of small businesses in the economy.

Finally, a set of variables obtained from GEM dataset has been used in the empirical analysis to describe the entrepreneurial structure of the home country. The variables are:

- Nascent Entrepreneurship rate (SUBOAN) - percentage of population who are currently nascent entrepreneurs;
- Total early stage entrepreneurial activity (TEA) - percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business;
- Entrepreneurial orientation (FUTSUPNO) - percentage of the population who intend to start a business within three years;
- Entrepreneurship as Desirable Career Choice (NBGOOD) - percentage of 18-64 population who agree with the statement that in their country most people consider starting a business as a desirable choice;
- Perceived capabilities (SUSKIL) - percentage of 18-64 population who believe to have the required skills and knowledge to start a business;
- Perceived opportunities (OPPORT) - percentage of 18-64 population who see good opportunities to start a firm in the area where they live.

4.3 Results

Table 4 reports the results of the estimation exercise for the entire sample of firms. The first model (column 1) tests the Gibrat–Jovanovic assumptions for the growth of the firm. The dependent variable is the annual growth rate of sales. Regressions include time and firm dummies and the intercept. According to the reported results, smaller firms seem to grow faster than larger ones (which is in contrast to

Gibrat's law), whereas a firm's age–growth trend emerges which seems to favor older firms; however, this relationship is not statistically significant.

In the second model (column 2), we considered the impact of the HUB. The variable HUB indicates the location of the company in the largest metropolitan areas in the country (Milano, Roma, Torino, Bologna, Napoli, Palermo). Both the absolute value and statistical significance of the coefficient are significant and show that hubs play a leading role in explaining the firm's growth.

Column 3 describes the complete interpretative model of the firm's growth, which includes the dummy for the existence of transnational ties (TIES). At this stage, the picture already presented of the effect of size and age remains statistically unchanged: smaller firms grow faster than larger firms, whereas age does not affect the firm's growth. On the contrary, the coefficient of ties is positive but not significant.

The following specifications of the model (columns 4 and 5) include an additional set of home-country characteristics affecting entrepreneurship, which have been interacted with our main independent variable (TIES). In the fourth column, we examined the joint effect of ties and several demographic and institutional indicators on the sales growth. The interactions of TIES with GDP per capita, education (EDUC) and proportion of the young in the country's population (YOUNG) have been found positive and statistically significant. On the other hand, the combined effect of TIES and unemployment (UNEMPL) in the home country of the immigrant entrepreneur is negative and significant. Those results clearly demonstrate that the macroeconomic situation in the home country matters for the transnational entrepreneur: only when this situation is favorable, can the transnational links be beneficial and have a positive impact on the company's sales.

Column 5 demonstrates the impact of TIES and institutional indicators of the home country of IE on sales. Only the interaction of TIES with CORRUPTION has been found highly significant (at 1%) and negative. The sign of the interaction of TIES with DEMOCRACY was according to our expectations – positive, but it turned out to be insignificant. Therefore, these results suggest that a high level of corruption prevents TE from activating the links in a positive way. Moreover, as immigrants maintain transnational networks with the country where the level of corruption is high, TIES have a negative effect on sales; this is a price that TE pays for maintaining the

commercial contacts with the home country, hoping to reap the benefits of this investment in future.

Table 4 includes additional model specifications, reporting the results of the estimation of the impact of TIES and home-country's "entrepreneurial infrastructure" (ENTREP) on the firm's sales. In column 6, an interaction of TIES with two Hofstede's cultural dimensions has been inspected: Uncertainty Avoidance (RISK) and Long-Term Orientation (LTO). Both interactions exhibit signs according to our expectations and are highly significant (at 1% level). These results clearly indicate that the beneficial potential of transnational networks can be activated when a particular TE comes from the country where the dominant culture is less uncertainty-avoiding and more long-term oriented, i.e. future rewards and increased level of savings.

Column 7 shows the impact of TIES and entrepreneurial endowment of the home country on the firms' sales. Out of six interactions of entrepreneurial status indicators with cross-border ties, only two have been found positive and significant: one indicator which refers to the locus of control (LOCUS2, significant at 1%) and the proxy for the need for achievements (ACHIEVE).

In column 8 we considered the alternative set of variables on entrepreneurial endowment of a home country, taken from GEM dataset. The joint impact of those indicators and TIES has been found significant and positive in the case of: Nascent Entrepreneurship rate (SUBOAN), Total early stage entrepreneurial activity (TEA), Entrepreneurship as a Desirable Career Choice (NBGOOD) and Perceived opportunities (OPPORT). Basing on these results we can say that the entrepreneurial endowment of the home country matters for the positive activation of transnational networks potential.

In the final model specification (column 9), we considered the joint impact of TIES and the level of the entrepreneurial capital in the home country of IE. Out of these factors, only the interactions of TIES with the self-employment rate (SELF) and intensity of small business in the economy (FIRM/POP) have been found positive and significant, while the combined effect of TIES and the average firm size is not significant (and negative). Therefore, our results give additional support to Youngert's findings (1995): higher self-employment rates at home help in activation of transnational networks of immigrant entrepreneurs. TIES do have also positive impact

on sales when they are combined with the economic endeavor in the home country, in particular when there is a high intensity of small businesses.

Table 5 provides further elements to study the impact of home country characteristics on the ties-performance relationship. Two intuitions provide the basis for a more in-depth analysis.[8] Firstly, many migrants may have less business linkages with their country if they have moved to the host country early (Guarnizo et al., 2003). Therefore, the CEO age of at his/her arrival in Italy can explain some heterogeneity in the behavior of sample firms. We have used the median age of CEO at his/her arrival in Italy to split the sample. Secondly, the connection of the firm with foreign market can facilitate the activation on new ties, and/or can improve the performance effect of existing ones. We therefore have split the sample by the exporting status of the firms.

As our basic model estimates an average effect of ties on performance across firms, we split the total sample to allow coefficients to vary by firm groups, to estimate how much each group deviates from the mean effect. This can help in addressing the heterogeneity issue in our sample. Regression results are reported in Table 5. The main interest of this Table is to check if estimated coefficients are stable across different breakdowns of the sample or if they change. If they are stable and close to those of the baseline, we can affirm that the variable is relevant for all the firms in the sample. Conversely, if we observe differences between subsamples, we can identify variables that are selectively relevant for different groups of immigrant firms. To save space, Table 5 only reports estimated coefficients and their statistical significance. Our main comments are the following. Firstly, CEO age at the arrival in Italy provides a better predictor of different firms behavior than the firm exporting status. The size and the statistical significance of estimated coefficients are larger in models (2) and (3) than (4) and (5). Secondly, almost all the variables have similar size and statistical significance in the different subsamples, thus suggesting a limited heterogeneity between the subsamples when the variables described above are considered. Thirdly, corruption prevents ties activation especially when CEOs arrived in Italy with a limited set of established connections (at early age) or have left their country since many years. Fourthly, entrepreneurial endowment as described by the nascent entrepreneurship rate (SUBOAN) and the early stage entrepreneurial activity (TEA) seems to play a crucial

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[8] We thank one referee for suggesting us to explore this issue.

role when CEOs arrived in Italy with a consolidated experience in the home country, i.e. older than the sample median age. Also, a favorable economic endeavor in the home country is less relevant for ties activated by CEOs who arrived in Italy at old age than for younger ones: this is probably due to the easiness for more experienced CEOs to activate a solid international network without relying on pre-existing ties with their home country.

5. Concluding remarks

In this study, we have investigated the effect of transnational ties on the performance of immigrant entrepreneurs in the information and communications technology (ICT) industry in Italy, by using institutional and socio-economic characteristics of the country of origin and the ethnic entrepreneurial attitude of immigrant entrepreneurs as moderating factors. Our empirical analysis was carried out in order to test if the access to the transnational network directly affects the growth of the immigrant's enterprise. Furthermore, we checked the role of some home-country features - socio-economic characteristics and entrepreneurial orientation – in explaining the impact of transnational network on the immigrant's enterprise performance. Our results show the negligible relevance of a direct, or linear, impact of TIES on the sales of immigrant-run firms, but confirm the crucial moderating role of home country characteristics on the ties-performance relationship. We have found evidence that supports strongly hypothesis 2, thus indicating that the impact of TIES on Transnational Entrepreneurs' performance is more nuanced and indirect than the theoretical literature on transnationalism predicts. The activation of positive effects of transnational networks on performance depends to a large extent on two main factors related to the home-country i) socio-economic characteristics (such as macroeconomic stability, the level and quality of education, level of corruption and level of the entrepreneurial endowment) and ii) its entrepreneurial attitude (uncertainty avoidance, long-term orientation, locus of control and need for achievements). These home-country moderating conditions are crucial in the identification of the otherwise ambiguous impact of ties on performance.

Besides, our findings suggests that transnational entrepreneurship might be beneficial for both the receiving and home countries since: firstly, it discovers and activates business initiatives which would not otherwise exist and secondly, it accelerates the capital accumulation helping transnational entrepreneurs to become the source of seed capital for business initiatives back in their home countries. Yet, this potential can be fully exploited only when the advantageous political and institutional conditions exist especially in home countries, that should design special policies aimed at Diaspora members, facilitating their investments and firms creation. One example of good practice is El Salvador, where the government has created special Vice Ministry of Foreign Relations for Salvadorans Abroad and Social Investment Fund for Local Development. The former institution's aim is to integrate Salvadorans abroad with their source country and to secure their interests and needs, while the latter promotes joint investment projects of home-town associations abroad, municipalities in El Salvador and NGOs (Gammage, 2006). The Salvadoran case shows that in order to reap the benefits from transnational socio-economic involvement of Diaspora members, the sending country needs to adopt active measures that leverage the home-country conditions enabling successful tie-based immigrant firms.

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Table 1 Distribution of firms by immigrant positions. Total firms in the ICT sector, firms with financial information, firms included in the survey and firms with immigrant CEOs included in the empirical analysis.

Positions	Total firms	Firms with financial data	Surveyed sample	Only immigrant CEOs
CEO/Administrator	1,950	1,086	484	411
President or board member	110	69	54	13
Shareholder	3,867	2,514	1,460	1,117
Total positions	**5,927**	**3,669**	**1,998**	**1,541**
CEO & shareholder	1816	901	442	408
President & shareholder	92	60	38	6
Sole proprietorship	322	150	34	29
Partnership/Joint stock companies	1,631	937	451	382
Total firms	**1,953**	**1,087**	**485**	**411**

Table 2 - Distribution (percent) of firms by number of ties and year of first activation. Sample of 411 firms with immigrant CEO.

	1990-95	1995-2000	2000-05	2005-10	Total
<5 ties	2.6	10.3	15.4	41.0	69.2
5 10 ties	2.6	2.6	10.3	7.7	23.1
> 10 ties	0.0	2.6	2.6	2.6	7.7
Total	5.1	15.4	28.2	51.3	100.0

Table 3 – Firm characteristics, by number of cross border ties. Sample of 411 firms with immigrant CEO.

	Firms without ties	Firms with ties	Breakdown by number of ties		
			<5	5-10	>10
Ties with home country	-	6.84	2.08	7.18	11.26
Share of sales to home country	0.7	10.1	7.0	14.6	14.2
Share of sales to other countries	4.7	24.3	22.9	22.4	27.2
CEO gender (male =1)	0.37	0.82	0.66	0.76	0.91
Age of the CEO (years)	46.7	45.2	42.7	41.1	42.4
Age of arrival of the CEO (years)	14.7	22.3	20.8	23.8	21.2
CEOs with university degree	8.5	17.6	8.8	14.9	22.1
Firm age (years)	13.6	9.8	11.1	9.2	8.5
Employees	7.6	19.0	11.1	16.9	42.4
Number of firms	215	196	104	72	20
Mean sales (x1000 Euro)	1,151	2,541	1,955	1,495	5,235

Table 4 - Firm Sales Growth Equation: Panel Fixed Effect Regression— Home-country's demographic and institutional characteristics affecting entrepreneurship

	(1)	(2)	(3)	(4)	(5)
SIZE	–0.422***	–0.414***	–0.462***	–0.466***	–0.438***
	(–6.19)	(–6.40)	(–7.29)	(–8.81)	(–6.40)
AGE	0.204	0.273	–0.109	–0.108	–0.222
	(0.73)	(0.49)	(–0.16)	(–0.21)	(–0.77)
HUB (dummy Yes=1)		0.674***	0.651***	0.638***	0.604***
		(4.33)	(4.19)	(3.33)	(4.12)
Gender (dummy male=1)		0.102*	0.100	0.110*	0.106
		(2.11)	(1.24)	(2.56)	(1.24)
Years from the first tie		0.123	–0.051***	–0.068***	–0.064***
		(0.08)	(–4.19)	(–4.52)	(–3.55)
CEO education (University =1)		0.255*	0.090**	0.086*	0.098**
		(2.05)	(2.18)	(2.11)	(2.60)
ICT activities (number)		–0.140	–0.221	–0.198	–0.211
		(–0.16)	(–0.49)	(–0.63)	(–0.51)
TIES			0.129*	0.106	0.087
			(1.78)	(1.08)	(1.21)
TIES*POP				0.130	
				(0.54)	
TIES*GDP per capita				0.037**	
				(1.89)	
TIE*UNEMPL				–0.455	
				(–1.57)	
TIES*YOUNG				0.412**	
				(2.11)	
TIES*EDUC				0.082**	
				(2.22)	
TIES*CORRUPTION					–0.250***
					(–3.60)
TIES*DEMOCRACY					0.800
					(0.84)
R2	*0.310*	*0.312*	*0.366*	*0.369*	*0.354*
N	*2582*	*2514*	*2164*	*2168*	*2100*

Legend: Each model includes the year, geographical localization (North, Centre and South Italy), firm dummies, and a constant. ***, **, and * represents statistical significance at the 1, 5, and 10% levels, respectively. Values in parenthesis represent the *t* statistics computed from heteroskedasticity robust standard errors.

Table 4 – Continued

	(3)	(6)	(7)	(8)	(9)
SIZE	−0.462***	−0.448***	−0.433***	−0.439***	−0.417***
	(−7.29)	(−7.41)	(−8.42)	(−9.50)	(−7.34)
AGE	−0.109	0.212	0.258	0.204	0.301
	(−0.16)	(0.33)	(0.04)	(0.89)	(0.66)
HUB (dummy Yes=1)	0.651***	0.587***	0.542***	0.564***	0.549***
	(4.19)	(4.81)	(5.90)	(6.59)	(4.37)
Gender (dummy male=1)	0.100	0.097	0.101	0.097	0.104
	(1.24)	(1.50)	(1.16)	(0.88)	(1.12)
Years from the first tie	−0.051***	−0.040	−0.063**	−0.046**	−0.039*
	(−4.19)	(−0.49)	(−2.34)	(−3.00)	(−2.29)
CEO education (University =1)	0.090**	0.116**	0.093*	0.080*	0.082**
	(2.18)	(2.60)	(2.00)	(1.87)	(2.33)
ICT activities (number)	−0.221	−0.138	−0.197	−0.224	−0.099
	(−0.49)	(−0.16)	(−1.29)	(−1.14)	(−0.79)
TIES	0.129*	0.140	0.098	0.177*	0.123
	(1.78)	(1.10)	(0.66)	(1.95)	(1.16)
TIES*HOFSTEDE (RISK)		−0.122***			
		(−4.90)			
TIES*HOSFEDE (LTO)		0.114**			
		(2.02)			
TIES*FAM			0.013		
			(0.19)		
TIES*TARGET			0.012		
			(0.80)		
TIES*LOCUS1			1.111		
			(1.14)		
TIES*LOCUS2			0.114***		
			(5.02)		
TIES*ACHIEVE			0.189*		
			(1.60)		
TIES*ENVIRONMENT			0.604		
			(0.97)		
TIES*SUBOAN				0.335*	
				(1.91)	
TIES*TEA				0.390**	
				(2.14)	
TIES*FUTSUPNO				0.691	
				(0.50)	
TIES* NBGOOD				0.388*	
				(1.73)	
TIES*SUSKIL				0.046	
				(0.90)	
TIES*OPPORT				0.200**	
				(2.43)	
TIES*SELF-EMPL					0.190*
					(1.89)
TIES*AVERAGE SIZE					−0.160

	(1)	(2)	(3)	(4)	(5)
					(−0.46)
TIES*FIRM/POP					0.199*
					(1.80)
R2	*0.360*	*0.431*	*0.363*	*0.357*	*0.310*
N	*2121*	*1794*	*1886*	*1988*	*1987*

Legend: Each model includes the year, geographical localization (North, Centre and South Italy), firm dummies, and a constant. ***, **, and * represents statistical significance at the 1, 5, and 10% levels, respectively. Values in parenthesis represent the *t* statistics computed from heteroskedasticity robust standard errors.

Table 5 - Firm Sales Growth Equation: Panel Fixed Effect Regression— Home-country's demographic and institutional characteristics affecting entrepreneurship. Sample firms split by the median age of CEO arrival in Italy and firm exporting status.

	Baseline	Arrival before 19	Arrival after 19	Non-exporting firms	Exporting firms
	(1)	(2)	(3)	(4)	(5)
TIES	0.101	0.090	0.090	0.090	0.090
TIES*POP	0.130	0.089	0.201	0.194	0.110
TIES*GDP per capita	0.037**	0.018	0.039**	0.201	−0.044
TIES*UNEMPL	−0.455	0.043	−0.551	−0.102	−0.216
TIES*YOUNG	0.412**	1.844**	0.333	−.011**	0.866
TIES*EDUC	0.082**	−0.080	0.211**	0.057	0.094
TIES*CORRUPTION	−0.250***	−0.304***	−0.228*	−0.227	−0.391
TIES*DEMOCRACY	0.800	0.806	0.808	−0.179	1.947
TIES*HOFSTEDE (RISK)	−0.122***	−0.106*	−0.180***	−0.044*	−0.160***
TIES*HOSFEDE (LTO)	0.114**	0.219*	0.097**	0.116**	0.110**
TIES*FAM	0.013	0.004	0.058	0.109	0.006
TIES*TARGET	0.012	0.197	−0.080	−0.066	0.208
TIES*LOCUS1	1.111	0.987	1.444	1.098*	1.227**
TIES*LOCUS2	0.114***	0.168*	0.102***	0.401**	0.222*
TIES*ACHIEVE	0.189*	0.222**	0.160**	0.444*	0.089**
TIES*ENVIRONMENT	0.604	0.812	0.544	0.190	0.871
TIES*SUBOAN	0.335*	0.212*	0.421**	0.149	0.909*
TIES*TEA	0.390**	0.224*	0.706**	0.127*	0.544***
TIES*FUTSUPNO	0.691	0.190	−0.087	1.041	0.286
TIES* NBGOOD	0.388*	0.158	0.431	0.411***	0.094
TIES*SUSKIL	0.046	0.060	0.188	0.039	0.084
TIES*OPPORT	0.200**	0.429***	0.187**	0.069	0.492
TIES*SELF-EMPL	0.190*	0.389*	0.133**	0.187	0.206**
TIES*AVERAGE SIZE	−0.160	−0.571	0.614	−0.380	−0.224
Firms	411	206	205	153	257

Legend: Each model includes the year, geographical localization (North, Centre and South Italy), firm dummies, and a constant. ***, **, and * represents statistical significance at the 1, 5, and 10% levels, respectively. Values in parenthesis represent the *t* statistics computed from heteroskedasticity robust standard errors.

APPENDIX: Table A1- Description of variables

Variable	Definition	Empirical counterpart	Source
SIZE	Firm's size	Net sales (log)	Data collected by authors
AGE	Firm's age	Number of years since firm foundation (log)	Data collected by authors
TIES	Cross-border ties	Activation of ties in a given year (dummy variable)	Data collected by authors
POP	Home country's population	Total number of population (log)	World Development Indicators (WDI)
GDP per capita	Home country's income per capita	Logarithm of the real per capita GDP of the country of origin (PPP 2007)	World Development Indicators
UNEMPL	Conditions of labor market at home country	Rate of unemployment	World Development Indicators
YOUNG	Incidence of younger population at home country	Dependency ratio in the country of origin in 2007	World Development Indicators
EDUC	Incidence of educated population at home country	highest educational level attained, country average V238	WORLD VALUES SURVEY (WVS)) 1981-2008 , (www.worldvaluessurvey.org).
CORRUPTION	level of corruption at home country	justification of a statement: "Someone accepting a bribe in the course of their duties" V201	WVS
DEMOCRACY	level of democracy	"how democratically is this country being governed today?", country average, V163	WVS
SELF-EMPL	level of self-employment	self-employment rate at country level, V241	WVS
AVERAGE SIZE	average firm's size at home country	average establishment size	United Nations Industrial Development Organization (UNIDO) database, available at: www.unido.org/data/regions.cfm
FIRM/POP	intensity of small business in the economy of a home country	Share of small business in population	United Nations Industrial Development Organization (UNIDO) database, available at: www.unido.org/data/regions.cfm
RISK	uncertainty avoidance	Society's tolerance for uncertainty	http://www.geerthofstede.nl/

FAM	entrepreneurial characters that children get from the family	Clustered indicators of: autonomy/independence (V12), hard work (V13), sense of responsibility (V14), Creativity (V15), Commitment (V18)	WVS
TARGET	definition of professional targets	Clustered indicators of: make parents proud (V64), follow my instinct (V65), complacency (V66), self-confidence (V67)	WVS
LOCUS1	locus of control	"how much freedom of choice and control you feel you have over the way your life turns out?" V46	WVS
LOCUS2	locus of control	assess the statement: "individuals can decide their own destiny" V122	WVS
ACHIEVE	need for achievements	WVS V48	WVS
ENVIRONMENT	entrepreneurial environment	Cluster analysis on V116-V121	WVS
SUBOAN	Nascent Entrepreneurship rate	Percentage of population who are currently nascent entrepreneurs	Global Entrepreneurship Monitor (GEM) http://www.gemconsortium.org/Data
TEA	Total early stage entrepreneurial activity	Percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business	GEM
FUTSUPNO	Entrepreneurial orientation	percentage of the population who intend to start a business within three years	GEM
NBGOOD	Entrepreneurship as Desirable Career Choice	percentage of 18-64 population who agree with the statement that in their country most people consider starting a business as a desirable choice	GEM
SUSKIL	Perceived capabilities	percentage of 18-64 population who believe to have the required skills and knowledge to start a business	GEM
OPPORT	Perceived opportunities	percentage of 18-64 population who see good opportunities to start a firm in the area where they live	GEM

APPENDIX -Table A2 - Firm Sales Growth Equation: Panel Fixed Effect Regression— Home-country's demographic and institutional constitutive variables affecting entrepreneurship *

	(4)	(5)	(6)	(7)	(8)	(9)
SIZE	–0.466***	–0.438***	–0.448***	–0.433***	–0.439***	–0.417***
	(–8.81)	(–6.40)	(–7.41)	(–8.42)	(–9.50)	(–7.34)
AGE	–0.108	–0.222	0.212	0.258	0.204	0.301
	(–0.21)	(–0.77)	(0.33)	(0.04)	(0.89)	(0.66)
HUB (dummy Yes=1)	0.638***	0.604***	0.587***	0.542***	0.564***	0.549***
	(3.33)	(4.12)	(4.81)	(5.90)	(6.59)	(4.37)
TIES	0.101	0.090	0.140	0.098	0.177*	0.123
	(1.08)	(1.21)	(1.10)	(0.66)	(1.95)	(1.16)
POP	1.986					
	(0.16)					
GDP per capita	22.101					
	(1.04)					
UNEMPL	-3.933					
	(-1.60)					
YOUNG	4.908*					
	(2.01)					
EDUC	0.094*					
	(1.69)					
CORRUPTION		0.250				
		(0.889)				
DEMOCRACY		6.112				
		(0.97)				
HOFSTEDE (RISK)			–0.122***			
			(–4.90)			
HOSFEDE (LTO)			0.114**			
			(2.02)			
FAM				11.445		
				(0.90)		

TARGET				0.478		
				(0.69)		
LOCUS1				4.999		
				(0.90)		
LOCUS2				1.908		
				(0.10)		
ACHIEVE				0.993		
				(1.15)		
ENVIRONMENT				3.508		
				(0.40)		
SUBOAN					10.99	
					(1.20)	
TEA					2.906	
					(1.09)	
FUTSUPNO					0.978	
					(0.25)	
NBGOOD					3.988	
					(1.60)	
SUSKIL					0.899*	
					(1.84)	
OPPORT					0.082	
					(1.09)	
SELF-EMPL						3.118
						(1.00)
AVERAGE SIZE						0.178
						(1.03)
FIRM/POP						4.600
						(0.97)
R2	0.369	0.354	0.431	0.363	0.357	0.310
N	2168	2100	1794	1886	1988	1987

Legend: Each model includes the year, firm dummies, and a constant. ***, **, and * represents statistical significance at the 1, 5, and 10% levels, respectively. Values in parenthesis represent the t statistics computed from heteroskedasticity robust standard errors.

* Note: In the standard regression analysis, the interaction term in the bi-variate equation: $Y_{i,t} = \alpha_1 X_{1,it} + \alpha_2 X_{2,it} + \beta X_{1,it} X_{2,it} + \varepsilon_{it}$ gives the *marginal effect* of the independent variable on the dependent as a function of the value, that is the *level*, of another independent variables: $\frac{\partial Y_{i,t}}{\partial X_{1,it}} = \alpha_1 \beta X_{2,it}$. In this paper we are interested in understanding if the independent variables are strategic complements (Aiken and West, 1991, Besanko et al., 2001; Brambor et al., 2006), that is if the impact of TIES is reinforced (or diminished) by other variables, and this is defined by the sign of the cross-partial derivative between two independent variables of interest: $\frac{\partial^2 Y_{i,t}}{\partial X_{1,it} \partial X_{2,it}} = \frac{\partial^2 Y_{i,t}}{\partial X_{2,it} \partial X_{1,it}} = \beta$. When $\beta > 0$, the two variables are (strategic) complements because the marginal effect of one variable is increasing in the value of the other variable. Besides, given the likely exogeneity of almost all constituent terms, we suggest to consider with caution the coefficients of the main variables reported in this Appendix, in order to avoid misinterpretation or spurious correlations.