

The determinants of transnational entrepreneurship and transnational ties' dynamics among immigrant entrepreneurs in ICT sector in Italy

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Abstract

This paper contributes to the rapidly growing literature on transnational immigrant entrepreneurship by analyzing the determinants of transnational entrepreneurial engagement among the immigrants in the ICT sector in Italy. Additionally, we investigate which factors influence the rise or decline of transnational entrepreneurial involvement in a home country. Our results indicate that the longer residence in Italy is associated with smaller propensity to become transnational entrepreneur. Moreover, we demonstrate that the type of transnational ties and the network size have a substantial impact on the dynamics of transnational entrepreneurial engagement.

Keywords: transnational entrepreneurship, immigrant business ties, Diaspora's transnationalism dynamics

JEL: F22 (International Migration), F23 (International Business)

1. Introduction

Transnational immigrant entrepreneurship has become an increasingly popular area of research within the international business and immigrant and ethnic entrepreneurship studies. It has been found that some immigrants are able to conduct their businesses across international borders, developing activities in both socio-economic fields: at home and in the host country. It can be expected that due to globalization process such forms of economic transnational engagement should become more widely spread and more intense in the nearest future (Drori, Honig and Wright 2009). Moreover, the recent studies indicate that transnational involvement might be associated with the improved economic performance of the immigrant-owned enterprises (Wang and Liu 2015), although home-country socio-economic and entrepreneurial characteristics might play a moderating role in this aspect (Brzozowski, Cucculelli and Surdej 2014).

Still, there is a limited knowledge about factors that differentiate transnational immigrant entrepreneurs from the remaining immigrant entrepreneurs (i.e. those immigrant entrepreneurs who are not involved in economic cooperation with their home country). Early research on transnational entrepreneurship has indicated that immigrants involved in transnational entrepreneurship might constitute - depending on location and ethnic group surveyed - from 37.5 to 78.5 percent of immigrant entrepreneurs (Portes et al. 2002). The

existing empirical evidence is limited to the US (Ibid; Wang and Liu 2015) and Canada (Lin and Tao 2012) and it shows that compared to non-transnational immigrant entrepreneursⁱ they have a longer residence experience in host country, better education and have experienced faster occupational advancement. Thus, transnational immigrant entrepreneurs seemed to be on average better integrated in economic terms than non-transnational immigrant entrepreneurs from the same ethnic groups.

Unfortunately, very little is known about the temporal dynamics of transnational entrepreneurship. The most popular definition of this phenomenon portrays transnational entrepreneurs as "individuals who migrate from one country to another, concurrently maintaining business-related linkages with their countries of origin and with their adopted countries and communities" (Drori, Honig and Ginsberg 2010: 3). The emphasis in this description is put on the creation and stable maintenance of transnational ties. Consequently, most of research on the linkages that transnational entrepreneurship keep between host and sending country remains static and analyzes the conditions of such activity at a given point in time. Moreover, a clear predominance of case studies can be seen, which makes the generalization on this topic less plausible (Riddle, Hrivnak and Nielsen, 2010; Mustafa and Chen, 2010). Very little is known about the dynamic transformation of this form of entrepreneurship (i.e. after the transnational links with the home country have been activated) and the sustainability of the transnational networks in particular. Thus, the fundamental questions remain unanswered: can the transnational entrepreneurship be sustained or even strengthened over the time, or it is bound to lose on intensity and disappear due to the gradual economic (but also socio-cultural) integration of migrant(s) in the host country? What is the importance of the ties' characteristics for the dynamics of transnational entrepreneurship?

The aim of our paper is to fill existing gaps in knowledge on transnational immigrant entrepreneurship (henceforth: TE) by examining the determinants of TE and the factors that influence the expansion or decline of transnational entrepreneurial engagement in home country. Using the representative sample of immigrant entrepreneurs from developing and emerging market economies in the ICT sector in Italy, we compare non-transnational immigrant entrepreneurs and transnational immigrant entrepreneurs. We find that the older migrants who have the access to the ethnic network are more likely to become transnational entrepreneurs, but also that the length of residence in Italy is negatively associated with TE. Then we focus exclusively on TE, assessing which factors influence the expansion or decline of transnational ties in the period of 2009-2011. We investigate whether the characteristics of the transnational networks and its size have an impact on transnational involvement dynamics. We find that the usage of the networks that serve to maintain personal business contacts decreases the probability of declining transnational involvement, while the networks which provide technology and business information contribute to the increased probability of improving transnational involvement.

The structure of our paper is as follows: in the second section we review the empirical and theoretical literature on immigrant and transnational entrepreneurship, provide the basic definitions and formulate the hypothesis. We present our data set in the third section. The empirical analysis is shown in the fourth section. Fifth section concludes the paper, identifying directions, problems and puzzles for the further research on transnational and immigrant entrepreneurship and formulating most important policy implications.

2. Theoretical discussion

As the studies on immigrant and transnational entrepreneurship encompass various theoretical approaches, methods and differently defined concepts, we start by clearly defining the basic terms used in our research. In entrepreneurship studies on migration there are two distinct, but often mixed concepts, namely the immigrant and ethnic entrepreneurship. By immigrant entrepreneurs we understand the members of the first generation of immigrants (foreign-born) who have started their business in host country. The ethnic entrepreneurship on the other hand is a more vague term, encompassing either the second, third and further generations of immigrants originating from a given country (i.e. persons already born in host country), or the broader ethnic minority groups such as Latinos, Asians or Eastern Europeans. In addition, there is a third concept applied to study businesses: the transnational entrepreneurship. It encompasses both immigrant and (although on smaller scale) ethnic entrepreneurs which maintain regular cross-border operations, marking their economic presence (at least) in two countries: the host and home economy (Levie and Smallbone, 2009).

In our study, we focus on the immigrant entrepreneurs in the Information and Communication Technology (ICT) sector in Italy. As the ICT industry remains a key channel which enables transnational immigrant activities (Benítez, 2012), we expect that immigrant entrepreneurs in this sector would be particularly interested in taking the advantage of cross-border connections to develop their businesses. First, we compare non-transnational immigrant entrepreneurs and transnational immigrant entrepreneurs and we investigate which characteristics increase the propensity to foster transnational activities. Second, we analyze the evolution of transnational immigrant entrepreneurship, by assessing which factors contribute to the expansion or erosion of cross-border ties and hence the likely decline of transnational immigrant entrepreneurship. Thus, our empirical analysis relies on two theoretical strands of literature on immigrant transnationalism and transnational entrepreneurship: the emergence and the evolution of transnational immigrant (business) activities. Consequently, we review this literature in order to formulate hypotheses for our research.

Immigrant transnationalism has become an increasingly important research area in the field of migration studies. This approach challenges the traditional approach to immigrant

integration, based on the assimilation model and assumed gradual adaptation into the host country cultural norms and social environment (Gordon, 1964). The transnational paradigm, proposed initially by anthropologists and sociologists (Schiller et al., 1992; Foner, 1997; Vertovec, 1999), portrays immigrants as the active actors of the integration process. Within this approach the gradual erosion of the original ethnic identity to the benefit of a new one, connected to the host country, will not necessarily take place. Thanks to the multiple channels (economic, cultural, social etc.) which connect destination and home countries, those transmigrants are able to "live in several societies simultaneously", marking their active presence in two or more localities (Schiller et al., 1992: 11). Consequently, immigrant transnationalism is portrayed as an alternative form of integration in host countries, suggesting that immigrants that use this strategy might form double identities (of the home and host countries) instead of gradual acceptance of new ethnic identity at the expense of the former one.

The transnational paradigm turned increasingly popular in social sciences, spilling over other disciplines interested in studying immigration processes. Subsequently, it became a reference point in the economic studies on immigrant and ethnic entrepreneurship. In this perspective, transnational entrepreneurs (TE) are able to gain a competitive advantage over immigrant entrepreneurs (IE) and native entrepreneurs by quickly identifying new market opportunities and rapidly shifting the production across international borders (Levie and Smallbone, 2009). The access to cross-border networks facilitates circulation of information, knowledge spillovers, technology transfers and access to financial and human capital (Saxenian, 2006). Moreover, as transnationalism is a direct manifestation of globalization process, this phenomenon (i.e. transnational entrepreneurship) is expected to intensify thanks to decreasing costs of transport and communication, and development of communication technologies, such as the Internet and Skype. As a result, the transnational entrepreneurship studies are received with growing interest and even enthusiasm by policy-makers, especially in the countries of migration. Transnationalism opens a new perspective on Diaspora policies, aimed at encouraging and managing the involvement of expat communities in the activities that foster economic development in the home countries (Gammage, 2006).

One of the most important research questions in the studies on transnational entrepreneurship and in the studies on entrepreneurship in general is whether such business activities are necessity or opportunity driven. The proponents of the first approach portray transnational entrepreneurs as representatives of "transnational semiprotariat", i.e. individuals which engage in cross-border activities in order to secure basic economic and social needs, and are driven by pure survival strategy (Lin and Tao, 2012: 54). The example of such approach is the study of Landolt and associates (1999), in which the authors focus on transnational entrepreneurship developed by Salvadorans in the US. The socio-economic situation of this ethnic group in the US: politically-driven migration, dominated by poorly-educated farmers (*campesinos*) who work "in the unregulated, low-wage service sector of

the urban economy" has profound influence on transnational migrant entrepreneurship, which "is too disparate, informal and lacks the wealth and institutional representation" (Ibid: 296 and 304). On the other hand, others perceive transnational entrepreneurs "in contrast to other modes of immigrant economic adaptation (...) [as] an elite group who are better qualified, more experienced, and more successfully established" (Lin and Tao, 2012: 53). The typical case is a seminal study of Portes and associates, which portrays Latino transnational entrepreneurs in the US as persons who have relatively higher social status, longer residence period in the US, are better educated and have better professional experience than domestic Latino entrepreneurs (Portes et al., 2002). Similar results have been found in the study of Lin and Tao, who have surveyed Chinese immigrant entrepreneurs in Toronto, operating in the technology field (i.e. IT, bio-tech, clean energy etc.). They have found that transnational entrepreneurs are usually older and better educated than domestic immigrant entrepreneurs (Lin and Tao, 2012).

One of the reasons for this diverging characteristics of transnational entrepreneurship might be the sample selection in most of the studies. Most of the research concentrates on few, selected immigrant groups - mostly Latinos (Landolt et al., 1999; Portes et al., 2002; Sequeira et al., 2009) and Chinese (Wong and Ng, 2002; Lin and Tao, 2012) and selected host countries - typically the US and Canada. Consequently, the surveyed respondents were homogenous in terms of ethnic composition and institutional factors operating both in the host and home countries. This homogeneity might have led to overrepresentation either of immigrant entrepreneurs operating in the ethnic enclave or elite immigrant entrepreneurs attracted to host country by specific recruitment programs targeting foreign investors. Founding an enterprise in a host and being able to take business advantages from ties with the home country, it seems thus justified to expect that if transnational entrepreneurship is an "alternative form of immigrant economic adaptation" (cf. Portes et al., 2002: 278), it is mostly pursued by the older and better-educated individuals and those immigrants who have longer residence in the host country.

Therefore, we can formulate the following hypothesis:

Hypothesis 1: The transnational immigrant entrepreneurship occurrence depends on the migrants individual characteristics.

In the second step of our empirical analysis we investigate which factors influence the dynamics of transnational immigrant entrepreneurship. Our dependent variable describes both the change of transnational ties intensity (decrease, stability or increase in the last 3 years before the survey) and at the same time the dynamics of transnational entrepreneurial involvement among immigrants in the ICT sector in Italy. Therefore, in order to derive the next hypothesis we turn to two distinct strands of literature: first, the studies on the determinants of social capital and the role of networks in international entrepreneurship, and second, the studies on the dynamics of transnational economic engagement and its linkages to integration process of immigrants.

In her seminal paper on network dynamics in international entrepreneurship, Coviello (2006) proposes a set of hypotheses on the evolution of ties used by international new ventures in software industry, suggesting that change in networks depends on its size (range) and the nature on ties (social vs. economic), but this effect is different at various stages of firm's internationalization. On the other hand, while focusing on transnational entrepreneurial engagement Patel and Terjesen (2011) suggest that typically the ties which connect close friends and members of family are the basis for the strongest networks that immigrant entrepreneurs can use. Additionally, in their study the tie strength has been found as the crucial factor for the TE performance. However, in their empirical analysis they have used the CIEP sample - the same one as Portes and associates have made use of in their classical study (2002). This sample is hardly comparable with the sample of highly-skilled immigrants from the ICT we consider in our paper, as CIEP dataset comprises mostly semi-skilled immigrants from Colombia, Dominican Republic and El Salvador.

In their study on Indian entrepreneurship in software industry, Prashantham, Dhanaraj and Kumar (2015) point out at the crucial role of social networks in the internationalization of new ventures. They emphasize that the role of such ties evolves over time, and that in the process of the international growth the transnational ethnic ties that connect entrepreneurs with Indian partners in the Diaspora are less important than other, non-ethnic networks. Moreover, they show that partner characteristics matter in this process, as only for the firms located within clusters (in Bangalore or Hyderabad) the usage of transnational ethnic ties does pay off.

The role of the network nature and its composition in transnational entrepreneurship has been stressed in few empirical studies. In their qualitative research on immigrant entrepreneurs in Malaysia and Singapore, Mustafa and Chen (2010) analyze the role and temporal dynamics of familial ties in transnational entrepreneurship. They argue that in the case of transnational entrepreneurs the role of family networks is not only crucial in the "start-up" phase of the business development, but remains very important in later stages of business activity. Different results were obtained by Smans, Freeman and Thomas, who studied the transnational practices of Italian immigrant entrepreneurs in Italy (2014). In their case, they have found entrepreneurs rather reluctant to use the familial networks in their transnational business engagement in Italy, fearing about the threat of damaging such kinship relationship. Thus, they preferred to rely on the social non-family ties instead.

The linkages between transnational economic engagement and integration process are more nuanced and have been addressed only in most recent contributions. In their paper on Chinese transnational entrepreneurship in Singapore and in the US Zhou and Liu (2015) develop an analytical framework that stresses - among other factors - the role of social capital formation in Diasporic engagement in transnational activities. According to their reasoning, the more integrated and highly-educated immigrants are, the more likely they become transnational entrepreneurs in high-tech industries. Moreover, the individuals with

a better access to transnational networks are those that might develop those activities over time. Therefore, we should expect that the number of transnational ties (i.e. network size) that an immigrant has access to should positively affect the dynamics of transnational entrepreneurship.

As the empirical and theoretical literature on transnational networks temporal dynamics in transnational immigrant entrepreneurship does not offer a coherent suggestion on relationship between ties type and its intensity over time, we can formulate the following hypothesis:

Hypothesis 2: The direction of change of transnational entrepreneurial involvement depends on the quantity and the nature of transnational ties used by immigrant entrepreneur.

However, the mixed embeddedness perspective in research on immigrant entrepreneurship suggests that not only the usage of social capital by immigrants is crucial to start and develop a business, but also that such businesses depend on "time-and-place" specific opportunity structure (Kloosterman, 2010: 26). This means that immigrant entrepreneurs do not act in social vacuum: they are strongly influenced by economic and institutional factors operating both in the host and home countries. Consequently, in our empirical analysis we will also include the home-country specific factors (quality of governance, level of economic development and Diaspora policies) as moderating factors in assessing the dynamics of transnational entrepreneurial involvement.

3. Data-set description

Our study focuses on the immigrant entrepreneurs from developing and emerging countries staying in Italy and operating in the information and communications technology (ICT) industry (J62 code in the classification of economic activities proposed by the Italian Institute of Statistics). We have identified the immigrant entrepreneurs from the statistics of the Italian Chamber of Commerce (ICC). By immigrant entrepreneurs we mean foreign-born persons who are conducting independent business activities in companies included in ICC statistical archive; these are mostly owners and main shareholders, but also administrators (CEOs and Directors). The choice of ICT sector was motivated by the fact the immigrant entrepreneurs are starting to become much more visible in high-tech (Mueller 2014) and knowledge-intensive (Hart and Acs 2011) industries both in the US and in Europe. Moreover, the ICT is a tie-intensive industry, in which activities often span over international borders, so there was an expectation that the incidence of transnational entrepreneurs in the sample will be substantial (cf. Hart and Acs 2011). Moreover, it is a mainstream sector of the Italian economy, dominated by relatively large companies, so the immigrant entrepreneurs cannot rely on the ethnic enclave and demand from the co-ethnic population while developing their

business activities. For the same reason, we have excluded all marginal and small businesses such as internet points/cafes, which are usually aimed at clients from the same ethnic group as the owner, and which are run in the ethnic districts and neighborhoods.

Our initial sample taken from the ICC registry included 1953 enterprises. After the exclusion of firms without financial information and those running marginal businesses, the sample remained with 1087 cases. The telephone survey carried out between April and May 2012 resulted in 484 answered questionnaires, so the response ratio is significantly higher than for most of the postal surveys (Rueda-Armengot and Peris-Ortiz 2012). After checking the sample composition bias by comparing the most relevant variables (the size of the company, intensity of ties and firm age) between responding and not-responding entrepreneurs, we have not found any significant difference. Therefore, we are confident that our results are representative of the entire Italian migrant entrepreneurial group from emerging market economies and developing countries, which operates in the ICT sector.

For the purpose of empirical analysis, the data-set has been cleared of outliers, and the final sample included 480 immigrant entrepreneurs. Out of those, 33 per cent (158 entrepreneurs) were transnational entrepreneurs, so the immigrants that have declared that their company maintains business ties with their country of origin. We have defined transnational ties with home country as personal (including family), financial, technical, R&D and institutional (i.e. universities and/or other R&D institutions) linkages which were important for the current business activity, but the simple trading relationships were excluded. The descriptive statistics of our sample are presented on table 1.

TABLE 1 (descriptive statistics)

In our sample transnational immigrant entrepreneurs are on average younger than non-transnational immigrant entrepreneurs and this difference is significant (4.6 years). There is an obvious male predominance among all immigrant entrepreneurs - a situation which is typical for most of the studies on gender differences in entrepreneurship, which point at smaller female participation rates in entrepreneurship than in the case of males (Arenius and Minniti, 2005). Still, in the case of TE the overrepresentation of males is even more pronounced, as they comprise almost 3/4 of this group. However, the most substantial difference is the length of Italian residence - the non-transnational immigrant entrepreneurs stay on average 11.8 years longer in Italy than the TEs.

Another important information which needs to be noted is the peculiarity of our data-set, which comprises a substantial share of immigrant entrepreneurs who - although being born in a foreign country - have at least one Italian parent (172 individuals, i.e. 36% of the sample). Having an Italian family might have ambiguous effect on TE propensity: on one

hand, we might expect faster assimilation at destination as compared to other immigrant entrepreneurs, which in turn could affect negatively links with the country of birth. On the other hand, the children of Italian migrants who decided to settle in Italy might have a natural easiness to operate in a double socio-cultural field of their home and host countries, as long as they have spent a considerable part of their former lives in a country of birth. This issue will be addressed in detail in an empirical section.

Most of the immigrant entrepreneurs in our sample have tertiary education (at least bachelor degree - 87%), which can be attributed to the peculiarity of the ICT sector, which is skill-intensive (and human capital-intensive) industry. Still, there are substantial differences between our two groups of interest. As compared to non-transnational immigrant entrepreneurs, TEs have on average more often received only education at their home country, and less often got MA or PhD in Italy.

Finally, transnational entrepreneurs have on average better access to the existing networks of their ethnic groups in Italy, are more often the founders of the enterprise which they are running and the companies of TEs more often operate as branches of international groups (or belong to Multinational Corporations, MNCs)ⁱⁱ.

4. Empirical analysis

To test our hypotheses, we carry an empirical analysis, aimed at estimation of two equations. The first equation is the transnational entrepreneurship propensity; as the dependent variable (i.e. being transnational entrepreneur) is binary, we use simple logit model and test it across various specifications. In the second equation, we focus on transnational entrepreneurs only. We investigate, which factors affect the dynamics of the transnational ties in the last 3 years before the survey was carried (i.e. period 2009-2011). As the dependent variable in our second equation (the evolution of TE) has 3 values (decrease of tie intensity, stability, increase), it has been estimated with multinomial logit model, in which the baseline category is the stability of ties.

The results of the first equation estimation are shown on table 1. The first specification includes our basic model and a full sample (480 observations). The most important positive determinants of transnational entrepreneurship are: the access to the co-ethnic network in Italy and the situation when a firm belonged to an international group. On the other hand, having Italian parents is negatively related to TE propensity and this effect is really strong. The sign of age variable is according to our expectations: the older immigrants are more likely to be transnational entrepreneurs, although this effect is non-linear. Surprisingly, the fact of having a MA or PhD diploma from Italian university is negatively associated with transnational entrepreneurship; this effect is strong and significant across all specifications. This finding apparently contrasts with the results obtained by Portes and associates (2002), who have found that the better education increases TE propensity. However, in our sample

87% of immigrant entrepreneurs have at least bachelor degree and are on average better-educated than Latino immigrants included in CIEP sampleⁱⁱⁱ. This predominance of tertiary-educated immigrants can be explained by the nature of the technology entrepreneurship and the ICT sector, in which the innovative activities constitute a key factor for the economics success (Mueller, 2014). In our case the acquisition of additional post-graduate higher education in Italy can be involved with increased cultural assimilation and gradual erosion of the emotional attachment to the country of origin. This effect in turn might have a negative impact on transnational entrepreneurship. Another surprising finding is that the sex of immigrants had no significant effect on transnational entrepreneurship. On the other hand, the fact of being the founder of an enterprise is positively related to transnational entrepreneurship, but this effect is relatively small and it is not significant in all model specifications. Finally, the national culture of immigrant has a significant, but surprisingly small impact on transnational entrepreneurship. Immigrants coming from countries in which the uncertainty avoidance (cf. Hofstede 1993) is high are less prone to be transnational entrepreneurs: this finding is rather logical, as TE is involved with higher risk.

TABLE 2 (transnational entrepreneurship propensity)

As a large fraction (36%) of our sample is composed by immigrants with Italian parent or parents we had to focus our attention on this particular group. As we have mentioned in previous section, having an Italian family might have ambiguous effect on TE propensity. In order to check for this potential bias, we first have split the sample into two categories: immigrant entrepreneurs with Italian background and the remaining group. Such exercise did not produce any significant changes in our results. Consequently, we have decided to exclude from our sample those immigrants with Italian parent(s) who have arrived to Italy before the age of 18. We have assumed that this group might not have important emotional and social ties with their country of birth, as their principal reference point in terms of ethnic identity is Italy. The results of this estimation is shown in specification (1a). The results do not differ much from specification (1): the signs and significance of all parameters remained stable; the only exception is variable sex which turns to be significant at $\alpha=0.05$. Moreover, the parameter for variable ITA_PARENTS in specification (1a) remained negative and significant. Therefore, we decided to keep the entire group of immigrants with Italian origins in former model specifications. Still, the reluctance of foreign-born entrepreneurs with Italian origin to become involved in transnational activities with their country of birth is very interesting and has important political implications, which will be discussed in the final section.

Various authors stress the importance of home-country socio-political environment in constraining or encouraging transnational activities of Diaspora (Hong 2012), among which

the active Diaspora policies play a key role (Délano 2010). Therefore, in our second specification, we added variables which indicate the policy of the country of origin towards its Diaspora members^{iv}. Those indicators have been taken from UN Population Policies Database (see the table 4 in the Annex for detailed description of all variables). Out of these, two have been found significant for transnational entrepreneurship: measures to attract investment by Diaspora (binary variable DIASPORA_INVEST) has a positive impact, while the existence of programs facilitating return to home country (binary variable RETURN_PROGRAM) is involved with negative effect on TE.

The third specification adds important variable, which is the years of Italian residence. Unfortunately not all respondents provided information on that aspect, so in this case the sample is smaller (424 obs.). This indicator is crucial, as in the aforementioned literature it has been claimed that immigrant transnationalism can be perceived as an alternative form of economic adaptation. Moreover, the study carried by Portes and associates (2002) has indicated that in the case of Latino immigrants in the US the years of residence at destination are correlated positively with transnational entrepreneurship. However, in our case the effect is just the opposite - the years of Italian residence are negatively associated with TE and this effect is significant $\alpha=0.05$. Oddly enough, the magnitude of this effect resembles the Portes and associates study (2002), but just in the opposite direction (the value of this parameter in their study is 0.036, while in our it is - 0.037). A potential bias which can explain this result is that there is a potential collinearity in our model, as the older immigrants usually have the longer residence periods in Italy (i.e. age and years of residence are positively correlated).

Therefore, we have added the fourth specification in which we have kept the variable on years of Italian residence, but we have dropped the age variable. In this case, the negative effect of the length of Italian residence is even more pronounced (-0.046) and the significance is higher ($\alpha=0.01$). This specification clearly shows that in our sample the longer residence in Italy is negatively associated with the propensity of being TE.

TABLE 3 (evolution of transnational ties intensity)

The results of the second equation estimation are presented on table 3. The basic model specification (1) clearly shows that the immigrant characteristics and home-country specific factors matter for the dynamics of transnational entrepreneurship involvement. The most important variables which contribute in significant and negative way to the decrease of transnational ties intensity are: the length of Italian residence, the fact of getting education only in home country (and none education in Italy) and the existence of the home country policy which allows to hold dual citizenship. Therefore, it seems likely that the transnational entrepreneurship might be - as suggested by Portes and associates (2002) an alternative

form of immigrant economic adaptation, which can be sustained over a longer period of residence at the destination. The factors that increase the likelihood of decreasing transnational involvement are: the logarithm of GDP pc of the home country (proxy for the average level of development) and the administrator role of the immigrant entrepreneur. It seems clear that the immigrants who have not founded the enterprise but have become major decision-makers in the course of the firm's development might be more inclined to introduce changes in the company, which also includes the decrease of transnational involvement. On the other hand, the as the level of the development of the home country increases, the potential of expansion on that market and the possibility to exploit relatively cheap pool of workers decreases.

In the second specification we added the variable number of ties, which accounts for the quantity of transnational ties (network size). The results are in line with the expectations - the bigger is the number of transnational connections created by the immigrant entrepreneur, the smaller likelihood of decreasing transnational involvement and - simultaneously - the bigger probability of additionally increasing transnational involvement.

Third specification includes the list of variables that describe the nature of ties used by transnational entrepreneur. The results are also in line with initial expectations: if the immigrant uses transnational ties for having personal contacts, it is very unlikely that transnational involvement intensity will decrease. The opposite effect can be observed when ties are used for financial purposes: once the immigrant entrepreneur gets the funding, the intensity of such cooperation should fall. On the other hand, the usage of ties that concern technology and information - assets crucial for the competitiveness in the ICT industry - affects positively the likelihood of further increasing the transnational involvement.

Finally, the fourth specification includes the full model. The most important results include the diverging influence of company's founders and administrators on transnational involvement. While the founders tend to maintain transnational ties and even try to expand them further, the administrators are much more inclined towards including changes in both direction. Also the nature of ties used by transnational entrepreneur has a diversified influence on the dynamics of transnational involvement: while the usage of personal ties decrease the likelihood of falling transnational intensity and financial ties are connected to eroding transnational engagement, the ties that concern technology and information contribute to the intensification of TE. On the other hand, the effect of the quantity of ties is mostly visible at the positive side: the immigrants who already have numerous connections to their source country are more likely to further strengthen their transnational economic involvement over time.

5. Conclusions

In this paper we have analyzed the determinants of transnational entrepreneurship and the factors that affect the evolution of transnational entrepreneurial involvement among immigrants in the ICT sector in Italy. The hypotheses guiding our research were as follows:

Hypothesis 1: The transnational immigrant entrepreneurship occurrence depends on the migrants personal characteristics.

Hypothesis 2: The change of transnational entrepreneurial involvement depends on the quantity and the nature of transnational ties used by immigrant entrepreneur.

We have not found evidence that would support the hypothesis 1. On the contrary, according to our results the transnational entrepreneurship is negatively associated with length of the residence experience in Italy, which suggests that the immigrants who stay longer at host country show lower propensity to become TE. This finding has important policy implications - as most sending countries are developing active Diaspora policies, those actions need to be taken quickly, to tackle most recent migrants at destination, before their assimilation process deepens.

Yet, we have found evidence that supports hypothesis 2 on the significant effect of the network size and its characteristics on transnational entrepreneurship dynamics. The immigrants that use the personal ties are the ones who are less likely to reduce the scope of transnational involvement in the future, while the number of ties used and the networks that concern technology and information tend to stimulate more intensive TE.

In our analysis we have also controlled for the level of assimilation of immigrants in Italy and for home country-specific factors. The length of Italian residence is not positively connected to the likelihood of decreasing transnational involvement, which clearly shows that this form of economic activity is more than a ephemeris curiosity and can be sustained by migrants for the longer periods of time. Still, the activities of the home countries matter for the dynamics of transnational entrepreneurial engagement - offering to Diaspora members a possibility to hold double citizenship visibly affects the stability of TE.

Apart from that findings, we our study offers an interesting policy implication for Italy as an important immigration country. For Italian government source of concern should be the fact that the immigrant entrepreneurs with Italian origins show very little, if any, willingness to become transnationally engaged in their countries of birth. Thus, this group constitutes an unexploited potential, which could be used in the benefit of the entire Italian economy, as those immigrants might act as transnational bridges linking Italy with their countries of birth and contributing to the internationalization of Italian enterprises. The reasons why those people are not becoming TE should be investigated in further studies on immigrant entrepreneurship in Italy.

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Appendix

Table 1

DESCRIPTIVE STATISTICS

Variable	Means/Proportions			comparision of means/proportions		
	overall	TE	non-TE			
N	480	158	322			
% of sample	100	33	67			
<i>Migrant characteristics</i>						
Age	45.1	42	46.6	T	4.35	***
Gender (male=1)	0.62	0.72	0.57	Z	-2.98	***
Years of Italian residence	26.80	19.10	30.90	T	8.50	***
Italian parent(s)	0.36	0.13	0.47	Z	7.21	***
Only home country education	0.24	0.35	0.16	Z	-4.52	***
MA or PhD in Italy	0.40	0.30	0.46	Z	3.33	***
Access to ethnic network in Italy	0.27	0.53	0.14	Z	-9.20	***
<i>Entrepreneurial information</i>						
Founder of enterprise	0.41	0.53	0.36	Z	-3.52	***
Firm is a part of international group	0.07	0.15	0.03	Z	-4.66	***
Administrator	0.47	0.34	0.55	Z	4.42	***

Test for equal means (t-test) for normal variables and proportion test for binary variables. Please note that for variable "Years of Italian residence" only 424 observations were available.

*, **, *** means respectively significance at 10%, 5% and 1% level

Table 2

Dependent variable: transnational entrepreneurship propensity (logit model)

	1	1a	2	3	4
AGE	0.774 (2.23)**	1.129 (2.71)***	0.858 (2.34)**	0.884 (2.20)**	
SEX (Male=1)	0.434 (1.56)	0.705 (2.17)**	0.210 (0.71)	0.530 (1.71)*	0.391 (1.31)
ITA_PARENTS	-1.577 (-4.99)***	-2.378 (-5.28)***	-1.787 (-5.09)***	-1.699 (-4.28)***	-1.584 (-4.12)***
FOUNDER	0.500 (1.88)*	0.636 (2.07)**	0.508 (1.82)*	0.465 (1.54)	0.478 (1.61)
INT_GROUP	2.091 (4.30)***	3.309 (4.16)***	2.026 (4.06)***	2.705 (4.11)***	2.478 (3.96)***
ETHIC_NET	1.882 (6.60)***	1.899 (5.72)***	1.903 (6.34)***	1.927 (5.99)***	1.888 (6.05)***
UNCERTAINTY_AVOID	-0.045 (-6.17)***	-0.054 (-6.07)***	-0.029 (-2.81)***	-0.054 (-6.33)***	-0.052 (-6.30)***
ITA_MA(PHD)	-0.688 (-2.56)**	-0.835 (-2.67)***	-0.828 (-2.91)***	-0.739 (-2.43)**	-0.808 (-2.72)***
AGE^2	-0.016 (-2.19)**	-0.023 (-2.63)***	-0.018 (-2.31)**	-0.018 (-2.09)**	
AGE^3	0.0001 (2.01)**	0.0001 (2.42)**	0.0001 (2.14)**	0.0001 (1.91)*	
ITA_YEARS_RESIDENCE				-0.037 (-2.47)**	-0.046 (-3.79)***
LDC_COUNTRY			0.673 (1.02)		
DUAL_CITIZENSHIP			-0.070 (-0.15)		
RETURN_POLICY			-0.656 (-1.40)		
DIASPORA_INVEST			0.645 (1.97)**		
DIASPORA_UNIT			0.146 (0.34)		
RETURN_PROGRAM			-1.094 (-3.26)***		
MIG_GOOD			-0.519 (-1.36)		
CONSTANT	-9.273 (-1.74)*	-14.335 (-2.24)**	-10.747 (-1.89)**		
R ²	0.357	0.429	0.387	0.426	0.4135

NO. OBS	480	393	479	424	424
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Note: ***, ** and * represent statistical significance at the 1%, 5% and 10% levels, respectively.

Table 3. Dynamics of transnational entrepreneurial involvement (odds ratios reported)

	(1)			(2)			(3)			(4)		
	fall vs. Stable	base	rise vs. stable	fall vs. stable	base	rise vs. stable	fall vs. stable	base	rise vs. stable	fall vs. stable	base	rise vs. stable
no education in italy	0.233** (0.156)	.	1.967 (0.934)	0.269* (0.191)	.	1.378 (0.775)	0.246* (0.199)	.	1.478 (0.759)	0.240* (0.204)	.	1.171 (0.705)
ln of gdp per capita of home country in 2011	2.616* (1.307)		0.794 (0.275)	2.510* (1.375)		1.316 (0.509)	4.206** (2.861)		0.667 (0.255)	6.351** (5.081)		1.125 (0.493)
years of Italian residence	0.946** (0.026)		0.991 (0.022)	0.944** (0.026)		1.001 (0.026)	0.957 (0.028)		0.994 (0.024)	0.956 (0.028)		1.007 (0.028)
Founder	2.427 (2.763)		1.801 (1.338)	2.549 (2.974)		5.420* (4.895)	2.943 (3.859)		1.598 (1.238)	3.626 (5.036)		5.931* (5.972)
Administrator	9.289* (10.666)		3.259 (2.452)	7.592* (8.945)		15.832*** (15.302)	10.606* (14.533)		3.406 (2.659)	10.989* (15.964)		16.962*** (17.742)
dual_citizenship2011	0.166** (0.124)		0.551 (0.274)	0.139** (0.112)		0.976 (0.579)	0.141** (0.135)		1.278 (0.776)	0.085** (0.091)		2.080 (1.574)
change of corruption control 2009_2011	1.163 (1.074)		2.514 (2.188)	1.261 (1.221)		6.306* (6.542)	1.229 (1.651)		1.759 (1.397)	0.988 (1.280)		3.615 (4.447)
Number of transnational ties				0.236* (0.202)		7.276*** (3.158)				0.225 (0.254)		7.409*** (3.540)
ties concern personal contacts							0.174** (0.144)		1.557 (0.750)	0.203* (0.176)		0.742 (0.426)
ties concern financing							5.985** (4.875)		0.904 (0.520)	5.994** (4.800)		1.625 (1.106)
ties concern goods and services							0.783 (0.672)		1.433 (0.761)	1.368 (1.276)		0.802 (0.526)

ties concern technology and information					0.397	4.855***	0.582	3.617**
					(0.296)	(2.539)	(0.450)	(2.290)
_cons	0.000**		0.002		0.000**		0.000**	
	(0.001)		(0.007)		(0.000)		(0.000)	
o._cons	.	1.776	.	0.000**	.	1.461	.	0.000**
	.	(5.348)	.	(0.001)	.	(4.848)	.	(0.001)
Number of observations	145		145		145		145	
Adjusted R2	0.132		0.274		0.276		0.376	

note: *** p<0.01, ** p<0.05, * p<0.1 Standard errors reported in brackets.

Table 4. List of variables used (TBCompleted)

ⁱ Portes and associates (2002) apply different terminology, by comparing domestic and transnational immigrant entrepreneurs. However, in our sample the immigrant entrepreneurs who are not transnationally involved do not necessarily limit their activities to Italian market. For instance, 26% of non-transnational entrepreneurs reported at least some export activity. Thus, we have adopted an alternative terminology proposed by Wong and Ng (2002), who differentiate between transnational and non-transnational ethnic enterprises. Consequently, in our case the main categories of interest are transnational- and non-transnational immigrant entrepreneurs.

ⁱⁱ However, the number of the immigrant entrepreneurs whose companies belong to international group is very modest - only 35 out of 480 firms.

ⁱⁱⁱ In CIEP data-set slightly more than a half of immigrants (54.9%) graduated from high school (cf. Guarnizo et al., 2003).

^{iv} In this case one case is missing, as UN Population Policies Database does not have information on Tanzania. So the number of observations for this specification is 479.