

Meccheri, Nicola; Pelloni, Gianluigi

**Working Paper**

## On the Role of Human Capital and Instruments of Assistance for Rural Entrepreneurship and Development: Evidence from A Case Study Mountainous Italy

Quaderni - Working Paper DSE, No. 504

**Provided in Cooperation with:**

University of Bologna, Department of Economics

*Suggested Citation:* Meccheri, Nicola; Pelloni, Gianluigi (2004) : On the Role of Human Capital and Instruments of Assistance for Rural Entrepreneurship and Development: Evidence from A Case Study Mountainous Italy, Quaderni - Working Paper DSE, No. 504, Alma Mater Studiorum - Università di Bologna, Dipartimento di Scienze Economiche (DSE), Bologna, <https://doi.org/10.6092/unibo/amsacta/1510>

This Version is available at:

<https://hdl.handle.net/10419/159345>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

**ON THE ROLE OF HUMAN CAPITAL AND INSTRUMENTS OF ASSISTANCE  
FOR RURAL ENTREPRENEURSHIP AND DEVELOPMENT:  
EVIDENCE FROM A CASE STUDY IN MOUNTAINOUS ITALY**

**By**

**Nicola Meccheri<sup>a</sup> and Gianluigi Pelloni<sup>b</sup>**

<sup>a</sup>Dipartimento di Scienze Economiche, Università di Pisa, Pisa, Italy

<sup>b</sup>Dipartimento di Scienze Economiche, Università di Bologna, Bologna, Italy

<sup>b</sup>Department of Economics, Ryerson University, Toronto, Ontario, Canada

5/December/2003

**ON THE ROLE OF HUMAN CAPITAL AND INSTRUMENTS OF ASSISTANCE  
FOR RURAL ENTREPRENEURSHIP AND DEVELOPMENT:  
EVIDENCE FROM A CASE STUDY IN MOUNTAINOUS ITALY**

**Abstract**

Fostering entrepreneurship as a tool for the creation and support of rural businesses is a crucial goal for the integrated development and survival of rural economies. Despite the recognition of entrepreneurship as one of the main determinants of rural economic development, empirical research in this field is relatively sparse and the concept of rural entrepreneurship remains largely unexplored. Thus, there is little evidence on the role and function of rural entrepreneurs, the driving force behind the birth, survival and growth of rural enterprises. The present work, emerging from a larger project on rural entrepreneurship in the mountainous areas of southern Europe, aims to provide a contribution to filling this gap in knowledge. In this paper we present and analyse the results emerging from a questionnaire submitted to a sample of 123 entrepreneurs and rural businesses in a mountainous area of central Italy. The paper focuses on the correlation between entrepreneurial human capital and the adoption of instruments of assistance, and provides an assessment on their role in stimulating entrepreneurship in the specific area. In the light of the empirical results, we examine and propose potential policies for fostering entrepreneurship and the development of the rural region under study.

***JEL Classification:*** M13, R51, R58

***Keywords:*** rural entrepreneurship, business survey, human capital, financial and non-financial business's support.

## **1. Introduction**

The main objective of contemporary rural development policies of the European Union (EU) is to ensure an economically efficient and environmentally sustainable agriculture and to stimulate the integrated development of the rural areas of the EU itself (cf. Commission of the European Communities 1997). Small and medium enterprises (SMEs) operating in the EU's most rural and lagging areas (RLAs) constitute an integral part of the local economy and a major source of employment. Recently, in different European countries, the dominance of agricultural activities in RLAs has been challenged by rural enterprises specialising in small-scale industrial production, handicrafts and in-service provision sectors. Furthermore, relentless pressure to maintain economic viability in small scale (capital intensive) agriculture has encouraged diversification to non-farm activities (Smallbone, North and Kalantaridis 1999; Skuras and Tzamarias 2000).

In this perspective, new issues are becoming of relevance: the re-allocation of rural labour from agriculture to other sectors; the need to stimulate new skills and areas of expertise (not merely of a technical-productive nature) in the rural workforce and the pursuit of institutional policies able to promote rural entrepreneurship (e.g. Laukkanen and Niittykagans 2003). However, despite the recognition that entrepreneurship is one of the primary determinants of rural economic development (Wortman 1996), empirical research on rural entrepreneurship is relatively sparse and the concept entrepreneurship in rural areas remains largely unexplored. Therefore, there is little available empirical evidence on the role and the function of rural entrepreneurs, and the driving force behind the birth, survival and growth of rural enterprises.

This paper derives from a case study of rural entrepreneurship in a mountainous area of central Italy<sup>1</sup> and it aims to provide a contribution in empirical research on rural entrepreneurship. In particular, it presents and analyses some results emerging from the questionnaires submitted to a

sample of 123 businesses and entrepreneurs operating in the area. Our focus is on the role of human capital and instruments of assistance in stimulating entrepreneurship. Given the indications provided by the data, we suggest possible policies aimed at encouraging the development of this specific rural region.

The rest of the paper is structured as follows: in section 2 we briefly outline some theoretical insights on the importance of financial and non-financial assistance for rural SMEs and on the role of entrepreneurial human capital accumulation; in section 3, we present a general overview of the geographical and socio-economical features of the study area and illustrate our sampling procedures for data collection; in section 4 we organize and present the information emerging from our sample; we examine the characteristics of the selected enterprises and entrepreneurs; we analyse in depth the information concerning the role of human capital accumulation in enhancing the use of financial/non-financial instruments of assistance; in section 5, in the light of the previous results, we conclude discussing some possible “lines of action” for rural policies in the local area.

## **2. The importance of financial/non-financial support and entrepreneurial human capital for rural SMEs: Some theoretical insights**

One of the most important difficulties faced by entrepreneurs is the collection of appropriate financial funds in order to establish their businesses (the so-called start-up capital) and to expand them by means of new investments. For example, in their seminal paper, Evans and Jovanovic (1989) argue that, under certain assumptions, if there are liquidity constraints the probability of starting up a business is strongly connected to individual’s own assets<sup>2</sup>. Recent theories on asymmetric information in credit markets (Leland and Pyle 1977, Stiglitz and Weiss 1981) stress relevance of situations in which credit rationing

occurs when lenders artificially raise interest rates to account for higher risk on either investment projects proposed by smaller firms (adverse selection problem) or on uncertainty regarding the prospect use of funds (moral hazard problem)<sup>3</sup>. Finally, institutional theory (Thorne 1989) suggests that businesses operating in different areas and belonging to different industrial classes develop different financing practices.

Theoretical predictions clarify two important issues concerning rural SMEs: a) liquidity constraints and credit rationing are the norm in remote and lagging rural economies because of the low wealth conditions and the presence of strong informative constraints; thus, the creation, the functioning and the expansion of businesses is in general highly supported by personal funds and assets of the entrepreneurs or alternative financial practices (e.g. borrowing from suppliers and customers); b) given the modest extent to which personal funds amount in rural economies, institutional policies aimed at easing access to financial resources become extremely relevant<sup>4</sup>.

The fostering of rural entrepreneurship is also dependent on non-financial instruments integrating the financial assistance schemes. So far approaches to the development of rural businesses have relied on the use of traditional instruments such as grant aids, aimed at increasing invested capital and stimulating employment creation. However, rural entrepreneurs in local areas generally were unable to fully exploit such opportunities without any forms of non-financial assistance such as training, business administration, product development, marketing, accounting, financial management and technical assistance (e.g. Woolgar and Vaux 1998, Skuras, Dimara and Vakrou 2000). In this perspective, the EU provides an institutional framework furthering the development and adjustment of rural firms to the changing economic conditions<sup>5</sup>. In particular, by providing the correct set of rural development instruments, it ensures that an initial local rural development plan (bottom-up) for marginal areas would meet the actions available within the overall EU framework (top-down).

This paper focuses on the role of entrepreneurial human capital accumulation in relation to the

use of (financial and non-financial) assistance among rural businesses of the study sample. The human capital of the entrepreneurs could determine their ability to perceive and exploit economic opportunities. As is well known (e.g. Heckman 2000), skill formation in a modern economy is a dynamic process with strong synergistic components. Furthermore, theories of human capital and managerial efficiency (Becker 1964) are pointing out the importance of the temporal accumulation of formal human capital (i.e. years of education and formal training). In fact, higher levels of education are expected to have a positive impact on entrepreneurship and growth of firms by enhancing the entrepreneurs' ability to raise external funds. At the same time, learning-by-doing processes may work alongside formal education and training, but very frequently they replace lack of formal skills formation. In this sense, learning-by-doing and work experience (i.e. entrepreneurs with a previous experience in running a business) would support the development of managerial skills and facilitate access to external financial opportunities.

### **3. Characteristics of the area and sampling procedures**

The area under study includes two separate local economic systems: the Garfagnana and the Media Valle del Serchio. These two localities constitute the so-called area Valle del Serchio which belongs to the Lucca district in the county of Tuscany. Overall, the Valle del Serchio includes 21 municipalities extending over 89 918 ha, with a population of 60 283 inhabitants. It includes extensive hilly and mountainous areas and few flat areas. The average population density in the area is around 0.67 inhabitants/ha, although the aggregated data is partially misleading, since a large part of the population is concentrated in the valley floor and in the biggest municipalities.

From a socio-economic perspective, the area under study has specific characteristics. It

encompasses features typical of an underdeveloped rural region together with trends in the industrial and tertiary sectors characteristic of a more advanced economy.

There are also other trends affecting the study area which should be taken into account. First, a trend in common with the rest of the country: A conspicuous drop in the number of local residents until the 1990s, which has led to an appreciable increase in the average age of the population. Some activities and some products, in particular those agricultural commodities which are unique to inland and mountainous areas, are becoming increasingly marginalised. The average levels of education and schooling of the resident population are, and tend to stay, low. Local entrepreneurship is oriented towards developing individual firms or family-run businesses, leading to the widespread setting up of a large number of small and medium-sized enterprises.

Some positive factors affect the area of the Media Valle del Serchio. They include a strong industrial orientation which has thus become one of the main industrial districts of the entire Lucca province. At the same time, the Garfagnana shows a marked development in the tertiary sector. The most active industrial sector, despite an overall decline over the past few years, is manufacturing. Over the past few decades, owing to abundant water resources, an important papermaking centre developed, complementing the one in the Lucca plain. Indeed, the concentration of manufacturing activity in the Media Valle can be considered part of the industrial district of the richer and more developed Lucca plain. As a consequence, economic industries strongly linked to nature and environment has been partially abandoned to fit that model of development. Other important manufacturing activities include the production of ferrous metals (particularly copper), which has stimulated a lively arts and craft sector. On the other hand, the Garfagnana has accentuated its tertiary vocation on the basis of a model in keeping with its natural and traditional resources. However, this local economic system is the most depressed area in the Lucca province in terms both of demographic trends and the main social and economic indicators, though the latter have improved significantly over the past few years.



With regard to our sampling procedures, due to the nature of our study, we direct our attention to the non-farm (non-primary sector) rural businesses operating in the area. Moreover, in order to obtain survey results most relevant for policy analyses, we decided to place major emphasis on businesses established in the study areas during the last twenty years. Furthermore, we decided to form the sample to be surveyed in proportion to the sectoral distribution of businesses operating in the area in order to maximise the survey's representative nature. Along these lines, a sufficiently exhaustive list of rural enterprises was drawn up. After conducting a pilot survey, certain minor adjustments were made to the questionnaire, and personal interviews started in the second half of January 2000 and ended in mid March of the same year. The survey yielded 123 fully completed and usable questionnaires. Non-response rate (around 55%) was due to different factors (i.e. wrong addresses or missed respondents). It is worth remarking here that the most common and important problem we met in collecting the data was the widespread diffidence that characterised the attitude of the enterprises towards an inquiry such as ours and towards institutional assistance more in general. In this perspective.

#### **4. Businesses, entrepreneurial human capital, and adoption of instruments of assistance: The sample's profile**

In this section we present a profile of the sample starting from enterprises and entrepreneurs' general characteristics.

*Insert table 1 about here*

In table 1 the businesses of the sample are classified in relation to their sector of activity and the

size of their (full-time) employment. Larger firms are clustered in the manufacturing sector where 21 out of 39 have more than 10 employees. In this sector we find also the only firm (a paper factory) in the sample with more than 50 employees. The size of the firms is also quite relevant in the construction sector: 8 out of 9 firms have more than 10 employees. On the contrary small or very small are the dimensions of the firms (micro-firms) active in the other sectors. This holds in particular for restaurants and hotels and businesses operating in tourism<sup>6</sup> and other services; this latter is the more heterogeneous of all the sectors since it contains firms running very different activities (cycle repair, mechanical, financial and real property consultant agencies, etc.).

*Insert tables 2 and 3 about here*

In tables 2 and 3, together with businesses' sector of activity, some information on entrepreneurs is reported. In particular, human capital variables, such as education, previous occupation and experience, are shown. From table 2 on education, one can evince that local entrepreneurship is scantily educated; almost 48% of the entrepreneurs have not graduated from high school and only 5% possess a degree. This result holds for all industries and is particularly strong in the construction sector. Manufacturing is the sector with the highest level of education. This outcome could be explained in terms of a generational turnover where relatively less educated parents at the head of old and consolidated firms could afford to provide the heirs with better and more sophisticated training.

Data on previous occupation instead show us that a clear majority of the entrepreneurs were either employees (48%) or unemployed (26%). On the contrary, only 11 out of 123 entrepreneurs have had a previous experience in running a business.

*Insert tables 4, 5 and 6 about here*

Tables from 4 to 6 present an overview of data concerning the use of financial and non-financial instruments of assistance by surveyed businesses, distinguishing by the reason for the support (start-up, operation, new investment). In particular, tables 4 and 5 show the number of businesses of the sample that received financial and non-financial assistance respectively together with percentages at the total of surveyed businesses, while in table 6, for businesses which received some form of financial assistance, are reported mean percentages of such an assistance at the total of financial sources adopted.

As far as the use of financial support instruments is concerned, the entrepreneurs made a very limited use of subsidised instruments whether they were national or EU, public or private (only 18% have used banks' subsidised loans and an even smaller fraction have resorted to the national and EU grant-aid programs). The average amount of financial support obtained at the start up stage (table 6) bears out the modest recourse to financial aid schemes, not only in terms of the number of firms, but also in terms of the average size of these aids for those who have used them (only 25-30% of the total amount of the financial means required for starting up). Such a result confirms previous theoretical predictions (see section 2) that in the start up stage personal funds have been the major source of funding, while the other financial channels have been scarcely utilised. In this perspective, a crucial issue is this: Is this outcome due to lack of information and the inability of entrepreneurs to access these aids (maybe because of their low educational level) or are there inherent rigidities and inefficiencies in the credit/bank sector? In other terms, do we have constraints on the demand or the supply side of financial assistance? Or both?

When we look at the recourse to financial support for running the business and for new investments, we draw a different picture. Both the number of firms who accessed the schemes and the size of utilisation are higher. The reason for this outcome could be twofold: a) banks and credit institutions prefer to hand out their support to those firms who have already consolidated their position

on the market; b) the credit market for rural enterprises in Italy was more rigid and old-fashioned in the past (when most of the surveyed firms were born) than now (when they are trying to grow and expand).

Turning on non-financial instruments we can see that they have been scarcely used in all the stages of businesses' management. The present evidence would corroborate the result that the moderate use of financial aids does not depend entirely on the shortcomings of the credit channel.

In conclusion, as a first approximation, we can claim that the low utilisation of aid programmes and, possibly, their relatively inefficient application could have been determined by: 1) the inadequacy of the entrepreneurs in exploiting these instruments; 2) the presence of strong rigidities and inefficiencies in the credit and institutional channels.

The aspect of the problem emerging in point 1) could be linked to the low educational level of the entrepreneurs. As this issue occurs again and again as a recurrent theme through the analysis of the data, we can already start to point out the educational problem as one of the major factors holding back a fast and efficient development of entrepreneurial skills in the area.

The previous and other issues are analysed in more detail in the following tables. In particular, from table 6 to table 10 we present correlation between some variables relative to the use of financial and non-financial instruments and characteristics of enterprises and entrepreneurs of the sample.

*Insert tables 7, 8, 9, and 10 about here*

With respect to sectoral decomposition (table 7) we can see again that the “most educated” sector (manufacturing) is the one making the larger use of financial aids. On the contrary, construction, the “least educated” sector, employs more non-financial aids than any other sector. This sector also makes a reasonably large use of financial aids. The reason for this can be related to the fact that in the construction industry all the firms have a relatively large size and they need to make large investments

in physical capital. In table 8, data on the size of businesses suggests that larger enterprises have made greater use of financial assistance. A similar pattern emerges also for the non-financial instruments of assistance, though the largest business of the sample claims not having resorted to any instrument of this form. The last piece of information should be seen as an outlier and should carry little significance. In fact it could be due to idiosyncratic characteristics of the firm<sup>7</sup>. Our results confirm previous literature (e.g. Variyam and Kraybill 1994, Skuras, Dimara and Vakrou 2000) which stresses that for rural firms, the size of the firm, together with human capital characteristics (see below), is in general highly associated with adoption of support instruments. Theoretical explanations can be related to the fact that firm's size can be viewed as an adequate guarantee for the high transaction costs involved in the preparation stage of a support application, especially if external consulting services are carried out. Furthermore, when asymmetric information in capital markets is an issue (see section 2) which can result in the direct or indirect (by way of very low grants/loans or very high interest rates) rejection of the application, the size of the firm (together with the entrepreneur's human capital) can operate as a signal, reducing asymmetries and the risk associated with the new investments.

When looking at tables 9 and 10, it is important to stress the importance of general (education) and specific (learning by doing) human capital. In particular, the emerging data seem to confirm our previous findings about positive correlations between level of education and use of assistance instruments. This outcome is even more evident if we aggregate homogeneous levels of education (basic school or less and some high school; high school graduate and some university or other; university degree and post-graduate education). Furthermore, from table 10 it becomes apparent that those who make a larger use of financial and non-financial aid instruments have already been entrepreneurs in the past or have been previously employed (possibly within the same sector). While these results emphasise the importance of specific human capital, the behaviour of former students, together with the already stressed importance of education in the utilisation of aids, points out the

importance of generic human capital.

With regard to the latter issue, it is important to keep in mind that, in the presence of a scarcely dynamic entrepreneurship such as the area under examination, it is extremely difficult to trigger learning by doing processes. Thus it could be more feasible and more effective to pursue policies aimed at achieving higher educational levels for the population of the area simultaneously with targeted training schemes. In this way current and future generations of entrepreneurs could find themselves in a better position to appreciate and exploit the opportunities offered by the aid schemes.

## **5. Entrepreneurship and rural policies: comments and conclusions**

The most important result arising from our work is that entrepreneurs, in the area under study, are characterized on average by low levels of formal education while their vision of the world tends to be strictly tied up to their personal experiences. Thus, as main drawback, our average entrepreneur is unable to follow and adjust to recent technological innovations. Instead he/she is anchored to the formality of obsolete jobs and is not competitive in the market. This stylised fact is of overwhelming importance and may be envisaged as strictly endogenous to the type of economy under study (mountainous economy or rural economy in the “periphery”). In this scenario, many opportunities provided by technological change and by the processes of “Globalisation” and “Internationalisation” are and have been missed by local entrepreneurs because of their inadequacy in understanding and exploiting such phenomena. Thus, a strong effort is required to foster the development of human capital in the area. A primary objective of policy makers should be to guarantee enough support for large investments in general (education) and specific (training on-the-job) human capital. Obviously, given the long term perspective of such an investment, the results will be appreciated only much

later in the future. Furthermore, investment in specific human capital would be useful if and only if the area were to reach a sufficient level of general education. In fact, in the past many such programmes, run both by Italian authorities or by EU, have been in general unsuccessful because of thresholds too high for local entrepreneurs. A planned action is then required by local, national and EU authorities to help to increase the level and growth of local human capital. Failing to achieve these objectives would inevitably make any other policy intervention less effective, if not useless.

Together with cultural, educational and formational aspects, another critical point must be found in the presence of strong rigidities and inefficiencies in the credit and institutional channels that represents the other (supply) side of financial assistance. This problem has both a local and a national/European dimension (Acemoglu 2001). Credit market imperfections represent severe obstacles which have been constraining the capacity of European and Italian entrepreneurs from responding to technological innovations. When the access to credit is not flexible, a very important role played by institutional policies is to intermediate between financing opportunities and businesses (facilitating access to information, helping in dealing with administrative procedures, etc.) However, in the study area the “access facilitating policies” have been hindered by local inefficiencies. The allocation of responsibilities among institutional bodies, the relationships between them, and the required administrative procedures are often complex and confusing (Conversano, Meccheri and Pelloni 2001). Clearly, this fragmentation hampers the adoption and implementation of a coherent development policy, owing to the high costs involved in work co-ordination, and unavoidably, to each institution’s desire to represent its vested interests, which makes it almost impossible to pursue common interests and values. Moreover, the situation generates duplication of procedures and lengthens the time required to carry out normal administrative matters, thus seriously hampering the local economy. In summary, traditional sources of funding in the area (private credit and national/regional public funding) have not been usually very flexible, due to the criteria regulating State intervention in Italy. So, in spite of the

efforts of the different institutional agents and the variety of the available funding opportunities, the access to private credit has been highly impractical for a large majority of the local small businesses. As data seem to confirm, the current of affairs indicate that financial assistance has been highly selective, limited in scope and restricted to a small number of firms. Furthermore, this tendency is strengthening the reliance of local entrepreneurs on their own resources. As Italy in general is characterized by extremely high start-up costs (Fonseca, Lopez-Garcia and Pissarides 2001), the local credit difficulties summed up to the national ones have a strong discouraging effect on entrepreneurs.

In conclusion, the emerging picture is one where only a few dynamic entrepreneurs are really in a position to satisfy their needs completely. This evidence emphasises the strong correlation between inefficiencies of the two sides of the “financial assistance market”; low levels of education and experience, from the demand side, and rigidity of private credit and other financial channels, from the supply side. In this scenario new forms of financing offered by EU initiatives have represented opportunities that businesses were not always able to exploit. However, some qualifications must be traced for the different sectors. In particular, such considerations tend to hold more strongly for traditional sectors (commerce and constructions) while firms operating in tourism and manufacturing seem to be relatively more efficient in exploiting financial opportunities.

Finally, it is important to remark that this empirical study is inhibited with all the weaknesses of a questionnaire-based case study. As clearly stated in the Introduction, our aim has been to provide a contribution in empirical research on rural entrepreneurship, but our results are only indicative and should not be generalised to hold true for other rural marginal areas of the EU. As logical consequence, no general policy prescriptions may be based on the interpretation of our results. Instead, institutional support to rural businesses can only be targeted in terms of both geographic areas and type of businesses (e.g. Skuras, Castro Caldas, Meccheri, Psaltopoulos and Viladomiu 2003, Todtling and Wanzenbock 2003). Policies directed to enhance rural entrepreneurship and rural SMEs development



should be de-centralised in order to become more flexible and selective and match better specific local attitudes and needs. In order to learning more information on other local cases and their specificities, further empirical case studies are certainly welcome.

## **Acknowledgements**

We wish to thank Dimitri Skuras, all the other members of the EMASE (Entrepreneurship in Mountainous Areas of Southern Europe) project and participants to the 73<sup>rd</sup> European Association of Agricultural Economists seminar (“Policy experiences with rural development in a diversified Europe”) held at Ancona University in June 2001 and to the 2<sup>nd</sup> European Economics and Finance Society conference (“European integration: Real and financial aspects”) held at Bologna University in May 2003 for helpful comments and suggestions. Special thanks should go to Ciro Conversano for his invaluable help in collecting and organizing the data. The usual disclaimer applies. Financial support from the European Union under the EMASE project, Contract no. FAIR 6-CT98-41, is gratefully acknowledged.

## **Notes**

<sup>1</sup> Rural areas are not all equal. Rural areas in the “center” have higher population densities, greater proximity to the markets, low dependence on farming and a diversified economic base. On the contrary rural areas in the “periphery”, which generally include mountainous areas, are often characterised by severe remoteness, depopulation, infrastructure inadequacies, and high dependence on the agricultural sector.

<sup>2</sup> One of the most important difficulties faced by entrepreneurs in establishing and expanding their businesses is the collection of appropriate financial funds (the so-called start-up capital). As capital is essential for starting new businesses, either easy access to credit is feasible or entrepreneurial activity will be essentially restricted to the wealthier agents. Thus liquidity constraints may deter agents from starting their own businesses. In their seminal paper, Evans and Jovanovic (1989) argue that, when there are liquidity constraints, the probability of starting up a business is positively correlated with the level of assets of the potential entrepreneur. Since they also find a significant and negative correlation between entrepreneurial ability and assets, the presence of

binding capital constraints seems to be corroborated.

<sup>3</sup> In modern monetary theory credit rationing is explained as a result of asymmetric information. Adverse selection, agency/monitoring costs and moral hazard are the mechanisms which justify the existence in equilibrium of credit rationing and excess demand for loans (cf. Jaffee and Russel 1976, for a seminal work in this area).

<sup>4</sup> Liquidity-constrained firms are also supposed to have higher additional impacts on grant-aided investments and thus, it may be in the public interest to facilitate their process of private fund raising (Wren 1996).

<sup>5</sup> For examples, training was mainly provided by the EU's Social Fund in cooperation with either national or regional authorities, while in many EU countries product development assistance was provided by Leader groups and local development authorities.

<sup>6</sup> The sector "tourism" includes essentially agro-tourism, that is businesses operating in activities linked to tourism which are not hotels and restaurants.

<sup>7</sup> However, we must also take into account that largest businesses generally have a better-defined internal organisation that can provide non-financial services (i.e. accounting, personnel training etc.) without the need of external providers.

## References

Acemoglu, D. 2001 Credit market imperfections and persistent unemployment, *European Economic Review*, 45: 665-679.

Becker, G.S. 1964, *Human Capital* (Chicago: University of Chicago Press).

Commission of the European Communities, 1997 Towards a Common Agricultural and Rural Policy for Europe, European Economy, Report and Studies n. 5, Brussels.

Conversano, C. Meccheri, N., and Pelloni, G. 2001 Institutions and entrepreneurship in mountainous areas of southern Europe: A case study in Garfagnana and Media Valle del Serchio, EMASE, Report Series No. I05, Pisa, Italy.

Evans, D. and Jovanovic, B. 1989 An estimated model of entrepreneurial choice under liquidity constraints, *Journal of Political Economy*, 97: 808-827.

Fonseca, R. Lopez-Garcia, P., and Pissarides, C. 2001, Entrepreneurship, start-up costs and employment, *European Economic Review*, 45, 692-705.

Heckman, J. 2000, Policies to foster human capital, *Research in Economics*, 54: 3-56.

Jaffee, D.M. and Russel, T. 1976, Imperfect information, uncertainty, and credit rationing, *Quarterly Journal of Economics*, 90: 651-666

Laukkanen, M. and Niittykangas, H. 2003, Local developers as virtual entrepreneurs. Do difficult surroundings need initiating interventions? *Entrepreneurship & Regional Development*, 15: 309-331.

Leland, H.E. and Pyle, D.H. 1977, Informational asymmetries, financial structure, and financial intermediation, *Journal of Finance*, 32: 371-387.

Skuras, D. and Tzamarias, N. 2000 Job creation by assisted rural firms: A European north-south perspective, *Local Economy*, 1: 1-13.

Skuras, D., Dimara, E. and Vakrou, A. 2000 The day after grant-aid: Business development schemes for small rural firms in lagging areas of Greece, *Small Business Economics*, 14: 125-136.

Skuras, D., Castro Caldas, J., Meccheri, N., Psaltopoulos, D. and Viladomiu, L. 2003 Institutional support to strategic business orientations: An empirical analysis of rural businesses in four countries of southern Europe, *European Business Review*, 15: 235-244.

Smallbone, D., North, D. Kalantaridis, C. 1999 Adapting to peripherality: A study of small rural manufacturing firms in northern England, *Entrepreneurship & Regional Development*, 11. 109-127.

Stiglitz, J.E. and Weiss, A. 1981 Credit rationing in markets with imperfect information, *American Economic Review*, 71: 393-410.

Thorne, J.R. 1989 Alternative financing for entrepreneurial ventures, *Entrepreneurship Theory and Practice*, 13: 7-9.

Todtling, F. and Wanzenbock, H. 2003 Regional differences in structural characteristics of start-ups, *Entrepreneurship & Regional Development*, 15: 351-370.

Variyam, J.N. and Kraybill, D. 1994 Managerial inputs and the growth of rural small firms, *American Journal of Agricultural Economics*, 76: 568-575.

Woolgar, S. and Vaux, J. 1998 Abilities and competencies required, particularly by small firms, to

identify and acquire new technology, *Technovation*, 18: 575-584.

Wortman, M.S. 1996 The Impact of Entrepreneurship upon Rural Development, in Rowley, T.D *et al.* *Rural Development Research: A Foundation for Policy*, Contributions in Economics and Economic History, n. 170 (Greenwood Press: Westport, Conn. and London).

Wren, C. 1996 Reply to subsidies, additionality and financial constraints, *Journal of Regional Sciences*, 36: 387-410.

**Table 1. Sectors of activity and size of firms\***

<b>Size/Sector</b>	Manufacturing	Construction	Commercial activities	Restaurants and hotels	Tourism	Other services
0  — 2 employees	2	0	21	3	2	16
2  — 10 employees	16	1	14	4	6	7
10  — 50 employees	20	8	2	0	0	0
>50 employees	1	0	0	0	0	0
<b>Total</b>	<b>39</b>	<b>9</b>	<b>37</b>	<b>7</b>	<b>8</b>	<b>23</b>

\* We used the following weights to convert employment in full-time employees: full-time = 1; part-time < 50% = 0.25; part-time 50% = 0.50; part-time > 50% = 0.75; seasonal worker < 6 months = 0.50; seasonal worker > 6 months = 0.75.

*Source:* Business survey

**Table 2. Sectors of activity and levels of education of entrepreneurs**

<b>Education/Sector</b>	Manufacturing	Construction	Commercial activities	Restaurants and hotels	Tourism	Other services
Basic school, or less	4	2	20	2	3	9
Some high school	4	3	5	2	0	4
High school graduate	21	4	9	1	3	6
Some university	5	0	3	2	2	2
University degree	3	0	0	0	0	2
Post-graduated	1	0	0	0	0	0
<b>Total</b>	<b>39</b>	<b>9</b>	<b>37</b>	<b>7</b>	<b>8</b>	<b>23</b>

*Source:* Business survey



**Table 3. Sectors of activity and previous occupation of entrepreneurs**

<b>Previous occup./Adoption</b>	Manufacturing	Construction	Commercial activities	Restaurants and hotels	Tourism	Other services
Student	15	3	2	0	0	1
Unemployed	5	2	9	1	2	13
Empl. (in a similar type of business)	9	4	11	4	5	3
Empl. (in another type of business)	7	0	11	1	1	3
Running another business	3	0	4	1	0	3
<b>Total</b>	<b>39</b>	<b>9</b>	<b>37</b>	<b>7</b>	<b>8</b>	<b>23</b>

Source: Business survey

**Table 4. Number of businesses which have used financial support\***

<b>Scheme of Financial Support</b>	<b>Support Directed to:</b>		
	Start – Up	Operation	New Investment
Subsidised interest rate	22 (17.89)	25 (20.33)	49 (39.84)
Grant-Aid (LEADER)	3 ( 2.44)	0 ( 0.00)	2 ( 1.63)
Grant-Aid EU programs	0 ( 0.00)	0 ( 0.00)	3 ( 2.44)
Grant Aid National programs	4 ( 3.25)	0 ( 0.00)	8 ( 6.50)
At least one of the above programs	26 (21.14)	25 (20.33)	53 (43.09)

\* Each cell shows the number of businesses that received financial assistance and (in parenthesis) its percentage at the total of surveyed businesses.

*Source:* Business survey

**Table 5. Number of businesses which used non financial support\***

Scheme for Non-Financial Support	Support Directed to:		
	Start - Up	Operation	New Investment
Training	14 (11.38)	7 (5.69)	5 (4.07)
Assistance in business administration <sup>a</sup>	12 (9.76)	4 (3.25)	1 (0.81)
Assistance in product development	2 (1.63)	0 (0.00)	0 (0.00)
Accounting	19 (15.45)	25 (20.33)	7 (5.69)
Financial management	17 (13.82)	9 (7.32)	16 (13.01)
Technical assistance	7 (5.69)	6 (4.88)	6 (4.88)
Assistance in marketing	2 (1.63)	1 (0.81)	2 (1.63)
At least one of the above programs	39 (31.71)	34 (27.64)	24 (19.51)

\* Each cell shows the number of businesses that received non financial assistance and (in parenthesis) its percentage at the total of surveyed businesses.

<sup>a</sup> Dealing with bureaucracy and organisation schemes.

*Source:* Business survey

**Table 6. Mean percentage of financial support\***

<b>Scheme of Financial Support</b>	<b>Support Directed to:</b>		
	Start - Up	Operation	New Investment
Subsidised interest rate	28.18	38.96	44.00
Grant-Aid (LEADER)	23.33	0.00	22.50
Grant-Aid EU programs	0.00	0.00	33.33
Grant Aid National programs	16.25	0.00	20.00
At least one of the above programs	29.04	38.96	46.43

\* Mean percentage of financial support at the total of financial resources for businesses which used financial assistance.

*Source:* Business survey

**Table 7. Utilization of instruments of assistance: Percentage of businesses by sector of activity**

<b>Sector/Adoption</b>	Financial instruments	Non-financial instruments	Both financial & non-financial instr.	Non-Adopters
Manufacturing	79.49	51.28	43.59	12.82
Construction	66.66	66.66	55.55	22.22
Commercial activities	21.62	21.62	16.21	72.97
Restaurants and hotels	57.14	14.29	14.29	42.86
Other tourism services	75.00	50.00	50.00	25.00
Other activities	30.43	21.74	13.04	60.87

*Source:* Business survey

**Table 8. Utilization of instruments of assistance: Percentage of businesses by size**

<b>Size/Utilization</b>	Financial instruments	Non-financial instruments	Both financial & non-financial instr.	Non-Adopters
0 — 2 employees	27.27	25.00	18.18	65.91
2 — 10 employees	50.00	33.33	27.08	43.75
10 — 50 employees	83.33	56.67	50.00	10.00
> 50 employees	100.00	0.00	0.00	0.00

*Source:* Business survey

**Table 9. Utilization of instruments of assistance: Percentage of businesses by education of entrepreneur**

<b>Education/Utilization</b>	Financial instruments	Non-financial instruments	Both financial & non-financial instr.	Non-Adopters
Basic school, or less	22.50	10.00	7.50	75.00
Some high school	61.11	66.67	61.11	33.33
High school graduate	72.73	43.18	38.64	22.73
Some university or other	42.86	35.71	21.43	42.86
University degree	60.00	40.00	20.00	20.00
Post-graduated education	100.00	100.00	100.00	0.00

*Source:* Business survey

**Table 10. Utilization of instruments of assistance: Percentage of businesses by previous occupation of entrepreneur**

<b>Previous occupation/Utilization</b>	Financial instruments	Non-financial instruments	Both financial & non-financial instr.	Non-Adopters
Student	70.00	50.00	35.00	15.00
Unemployed	15.62	12.50	9.37	81.25
Empl. (in a similar type of business)	63.89	36.11	33.33	33.33
Empl. (in another type of business)	39.13	26.09	17.39	52.17
Running another business	90.91	90.91	81.82	0.00

*Source:* Business survey