

University of Graz
Department of Economics

Master's Thesis

**The Styrian Vulkanland: A Case Study on
Innovation in Rural Areas**

Submitted in Partial Fulfilment of the Requirements for the Degree
Master of Economics by
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DECLARATION OF HONOUR

Unless otherwise indicated in the text or references, this thesis is entirely the product of my own scholarly work. Any inaccuracies of fact or faults in reasoning are my own and accordingly I take full responsibility. This thesis has not been submitted, either in whole or part, for a degree at this or any other university or institution.

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EXECUTIVE SUMMARY

The major objective of the present thesis is to investigate the innovative potential of rural areas as well as the importance of territory, proximity and relational assets in the knowledge generation process and consequently in the pursuance of innovative activities. On basis of the concept of the ‘milieu innovateur’, the current case study accounts for the economic peculiarities of rural environments which may prohibit the full exploitation of the innovative potential of regional actors and the implementation of an innovative milieu.

Table 1: Case Study Area, the Styrian Vulkanland

<i>Styrian Vulkanland</i>	
<i>Core competence</i>	<i>Services, handcraft and tourism</i>
<i>Area</i>	<i>Approx. 1.050 km²</i>
<i>Inhabitants</i>	<i>Approx. 100.000 (2007)</i>
<i>Administrative unit</i>	<i>77 municipalities [Gemeinden] located in [NUTS3] AT224 Oststeiermark</i>
<i>Association</i>	<i>Association for the promotion of the Styrian Vulkanland</i>

Source: KIRSCHNER et al. 2008, pg. 5.

Taking the Styrian Vulkanland located in the South-East of Styria as representative example for a peripheral region, the present thesis tries to address the following issues:

- Firstly, the innovativeness of eleven firms (small and very small enterprises) situated within the Styrian Vulkanland should be examined. The data used for this purpose was generated via semi-structured interviews on co-operation, knowledge generation, labour force, competitiveness and location.
- Secondly, it should be analysed whether the Styrian Vulkanland fulfils the pre-conditions for the creation of an innovative milieu or not. These conditions are based on the existence of spatial proximity, a coherent internal and external regional image as well as on the exploitation of collective learning processes.
- Thirdly, the main economic problems and the specific characteristics of rural areas should be identified, accounting for their influence on innovative activities.

- Finally, it should be scrutinized whether the concept of the ‘milieu innovateur’ can generally be applied to rural areas, considering the elements necessary for the creation of an innovative milieu and the specific socio-economic structure of peripheral environments.

Under consideration of the empirical results generated by the conducted survey within the Styrian Vulkanland, the case study yielded the following results:

- The majority of the interviewed enterprises are innovating in an irregular or sporadic manner due to a lack of internal resources. Learning patterns at this stage of ‘innovative maturity’ are dominated by learning-by-doing or interactive learning with a strong focus on competition via price. A first exploitation of collective learning processes was observed in about one third of the interrogated firms.
- The Styrian Vulkanland can only partly be regarded as an innovative milieu. Despite the existence of spatial as well as organisational proximity and the creation of a coherent regional image, collective learning processes are only partly implemented within the case study area. One significant problem is the availability of human resources. The interviewed enterprises especially referred to a lack of technical experts and trainees. Crucial within this respect is the high share of commuters which are attracted by better paid jobs within city-regions.
- The rural nature of the case study area is one reason why not all elements essential for the creation of an innovative milieu are given. As rural areas are generally characterized by a more strained economic situation than their urban counterparts, certain difficulties might always inhibit the implementation of an innovative milieu. Therefore it is unlikely that the concept of the ‘milieu innovateur’ can be applied with all its pre-conditions to peripheral regions.

Although the Styrian Vulkanland still has to solve certain difficulties (i.e. insufficient transport connection, restricted supply of human resources), its development plan is a first step towards a restructuring of the regional economy.

1 INTRODUCTION

The Styrian Vulkanland was always regarded as a remote area located in the South-East of Styria. A low income level, a lack of entrepreneurship, a small local market, infrastructural deficits as well as a low population density are just a few of the problems rural environments have to deal with (CORNADO *et al.* 2008). In contrast to city-regions which are often regarded as super-agglomerations characterized by interrelated economic activities with high levels of productivity and innovative potential (SCOTT AND STORPER 2003), peripheral regions are often accused of a lack of agglomerative advantages and a dominant agricultural sector (CORNADO *et al.* 2008; STEINER 2002). Under consideration of the strained economic situation prevailing in rural environments, the initial situation of firms within peripheral regions seems to be more unfavourable than of enterprises located in urban areas. While the firms' innovative potential is promoted in city-regions via the existence of relational assets and a dense local labour market (SCOTT AND STORPER 2003), innovation seems to be more difficult to pursue in remote areas.

However, a discussion on innovation within peripheral environments is inevitably connected to a question of definition. According to the Oslo manual (EUROSTAT 1997; EUROSTAT AND OECD 2005), innovation is described as the introduction of a novelty or as a significant improvement in products, processes, marketing and/or design. The introduction of any type of innovation can either occur at the level of the world market, a certain region or at the level of an individual firm. The minimum coverage of innovation – the innovation at firm-level – is central for the present thesis. The industrial structure of rural areas is mostly dominated by small and medium sized enterprises which are mainly characterized by restricted internal capacities. Due to lacking human and financial resources, small firms are often not able to confront the risk of the creation and the introduction of a worldwide novelty (CORNADO *et al.* 2008), whereby the pursuance of innovation at firm-level gains in importance.

In context of the demanding situation predominant in peripheral regions, the present thesis aims to investigate the innovative potential of enterprises located in rural areas, taking firms situated within the Styrian Vulkanland as representative example. Based on semi-structured interviews with eleven entrepreneurs and the concept of the 'milieu innovateur', it should be questioned if the Styrian Vulkanland fulfils the pre-conditions for the implementation of an innovative milieu and whether the concept of the 'milieu innovateur' can generally be applied

to peripheral regions. Moreover, the present case study should identify the major problems arising in rural areas that may prohibit the full exploitation of a region's innovative potential.

According to the motivation of the present thesis, the case study comprises four main chapters. The following, second chapter presents the theoretical framework on which the case study within the Styrian Vulkanland is based on. The focus of this part lies on the concept of the 'milieu innovateur' and respectively on collective learning. The theory of innovative milieus which is mostly associated with the European research network GREMI ('Groupe de Recherche Européen sur les Milieux Innovateurs'), originated in course of the investigation of the relationship between territory and innovation. The creation of innovative milieus is, however, demanding and rests upon certain pre-conditions which are difficult to fulfil for rural environments. Therefore chapter 2 also tries to scrutinize whether the concept can be applied to peripheral regions or not.

In contrast, the third chapter describes the economic situation and the development plan of the case study area – the Styrian Vulkanland. This part of the present thesis represents a first step towards showing the probable weaknesses of rural areas and how these could be tackled by an endogenous regional development strategy, adapted to the region's peculiarities, traditions and value system. In fact, the Styrian Vulkanland's development plan aspires to promote the innovative potential of regional entrepreneurs by strengthening regional core competences instead of attracting external technological leaders to the region.

The fourth chapter comprises the main empirical results generated by the conducted semi-structured interviews within the case study area. In particular, this part of the thesis evaluates the co-operative profile, the knowledge generation process as well as the competitiveness of the interrogated enterprises and tries to provide an overview of the location's strength and weaknesses.

Under consideration of the results presented in chapter 4, the final part 'Conclusion' sums up the main findings of the present case study and tries to give an answer to the major questions of the present thesis. Accordingly, it should be answered on the one hand if the Styrian Vulkanland can be regarded as an innovative milieu or not. On the other hand this chapter will try to comment on the applicability of the concept of the 'milieu innovateur' to rural areas, accounting for the specific economic structure of peripheral regions.

2 THEORETICAL FRAMEWORK

2.1 Rural areas: characteristics and innovation

The location of a firm is widely perceived as an important factor regarding the pursuance of innovative activities and the attitude towards innovation. In consideration of specific regional factors such as communication, the availability of human resources, the generation of knowledge spillover effects and specialized services to firms, enterprises within urban areas tend to have a more positive attitude towards innovation than firms which are situated in peripheral regions (CORONADO *et al.* 2008; KIRSCHNER *et al.* 2008).

Unlike their urban counterparts, enterprises in rural environments face certain problems ranging from a weak economic activity, a lack of entrepreneurship, a small local market, lacking agglomerative advantages to an industrial structure dominated by small firms missing large, sophisticated leaders (CORONADO *et al.* 2008; KIRSCHNER *et al.* 2008). In addition to the difficult entrepreneurial conditions prevailing in peripheral regions, the economic and demographic situation in rural areas is mostly characterized by a low population density, a particular socio-economic structure, agrarian activities, infrastructural problems as well as a low level of income. From this point of view peripheral regions can be regarded as poorer than cities, at least according to the nominal level of income. Considering the disadvantageous economic situation within rural environments, the existing pre-conditions – hardly any positive externalities such as knowledge spillover effects or a labour market of significant size as a source of skilled employees – might be regarded as unsuitable concerning the encouragement of the foundation of small and medium sized enterprises (SMEs) (STEINER 2002). Although some authors observe an urban-rural shift in the formation of SMEs as well as a “*selective outmigration of entrepreneurs and greater enterprising behaviour among small firms in smaller settlements and rural areas*” (PHELPS *et al.* 2001, pg. 614), others argue that the settlement of SMEs in rural areas is not based on a real economic integration within the regional network of actors (STEINER 2002).

Crucial concerning the outmigration of entrepreneurial activities from metropolitan areas is the concept of ‘borrowed size’. The term borrowed size captures the idea of the ability of SMEs in rural areas to benefit not just from lower rents or less congestion prevailing in peripheral regions, but also to “*reap the advantages offered in larger settlements (e.g. access to sizeable markets, business services and expertise, larger and more diverse labour markets and cultural amenities)*” (PHELPS *et al.* 2001, pg. 614). This development has also been

observed within the Austrian province [Bundesland] Styria where firms increasingly tend to use knowledge created within the capital city. In this context, some studies also give reason to believe that clusters and networks cannot be regarded solely as an urban phenomenon, but also exist outside metropolitan areas benefiting rural environments and spurring innovation (STEINER 2002).

Although enterprises in rural areas also seem to retain advantages from clusters and networking activities of local actors, the initially described differences between peripheral and city-regions still give reason to presume that the innovation system as well as the attitude towards innovation in rural areas differs in several respects from innovation within urban clusters (KIRSCHNER *et al.* 2008). Following the reasoning of CORONADO *et al.* (2008), especially the attitude towards innovation, or more precisely the phase prior to the actual innovation process, seems to be of interest when analyzing the innovative behaviour of enterprises within rural environments. A favourable attitude towards innovation is the precondition for actually pursuing innovative activities. In this context CORONADO *et al.* (2008) proposes several factors that internally and externally influence a firm's attitude towards innovation. As far as internal factors are concerned the "*inventory concerns and attitudes of a company*" (CORONADO *et al.* 2008, pg. 1011) depend on the following aspects:

- i. The firm's size;
- ii. The costs of undertaking R&D and innovation;
- iii. The level of financial indebtedness;
- iv. The firm's market power and diversification of its product portfolio;
- v. A firm's openness to trade.

External factors that are relevant for the formation of a positive attitude towards innovation are the following:

- i. The degree of technological competition in the sector a firm operates in;
- ii. The location.

While a firm's willingness to innovate is mostly influenced internally by the costs of undertaking R&D (the higher the costs the greater the risk of undertaking innovative activities) and by its size reflecting the capacity to confront new risks, the external factor 'location' should not be neglected. As mentioned earlier, enterprises in rural areas often miss a suitable business environment, agglomerative advantages, communication facilities and

qualified human resources necessary for the formation of a positive attitude towards innovation. Moreover, the economic structure of peripheral regions is often dominated by small enterprises which show, according to the results of CORONADO *et al.* (2008), less favourable attitudes towards innovation.

2.2 Marshall's industrial organisation vs. the concept of the 'milieu innovateur'

Besides the possible impact of the previously described factors on innovative activities of enterprises and as a consequence on the innovative behaviour and competitiveness of an entire region, a large body of literature still focuses on the existence of local systems of relationships. These are often regarded as "*a major driving force of regional economic success and restructuring by favouring industrial innovativeness and competitiveness*" (FROMHOLD-EISEBITH 2002, pg. 1). Several theoretical concepts such as the industrial organisation (MARSHALL 1920) or the innovative milieu (i.e. CAPELLO 1998; FROMHOLD-EISEBITH 2002) tried to capture this idea in a particular way. In course of the following two sections, these two concepts should be presented, focusing especially on the 'milieu innovateur' which constitutes the theoretical basis for the case study on innovation in the Styrian Vulkanland. The reason for choosing the theory of the 'milieu innovateur' in contrast to Marshall's industrial organisation, is (as discussed later) the presence of innovative synergies and collective learning within an innovative or creative milieu which describes, in fact, much better the situation within the Styrian Vulkanland than industrial districts do.

2.2.1 Industrial Organisation (Marshall)

The concept of industrial organisation or industrial districts is originally based on the theoretical work of Marshall. Following the reasoning of KEEBLE AND WILKINSON (1999), for Marshall industrial organisation comprises on the one hand differentiation or, as MARSHALL (1920, pg. 201) called it, "*an increased subdivision of functions*" within an industry (such as the division of labour or the development of specialised skills and knowledge) and on the other hand an integration of the separate parts of industry. Thus, market success grounded on a more effective industrial organisation and an increased specialization. The concentration of production in particular localities or the localization of an industry is described by Marshall as an 'industrial district' (KEEBLE AND WILKINSON 1999).

For MARSHALL (1920), the causes leading to the localisation of industries are mostly related to the physical conditions of a specific region such as climate, soil, natural resources as well

as the access to land and water. Just as metal industries, for instance, have generally chosen to settle near mines, iron industries preferred to stay in the neighbourhood of collieries. However, once an industry has chosen one locality suitable for its purpose it will stay there for a long time making use of the advantages generated in the industrial district (MARSHALL 1920). According to BARDI AND FREDDI (2005), the high degree of efficiency offered in such concentration of firms located in close geographical proximity “*is made possible by the presence of external economies that give enterprises the opportunity to enjoy advantages of economies of scale*” (BARDI AND FREDDI 2005, pg. 193) and as a consequence “*provide a real competitive advantage to the district*” (*ibid.*, pg. 193).

Another benefit of industrial districts or localized industries respectively, is the existence of a constant market for skilled labour. While companies are likely to settle in areas where they are able to find qualified workers with the special skills that they require, labour tends to migrate to regions where their special skills are demanded by potential employers. In addition to a constant market for qualified employees, new ideas tend to spread more easily in the near neighbourhood of people and firms to one another. By combining the idea of one actor with the suggestion of others, new sources of further ideas are created (MARSHALL 1920). Moreover, firms not only tend to benefit from the mutual reinforcement of ideas within the process of generation of new knowledge and information, but are also supported by the supply of specialised and even scientific services to firms often provided by formal associations (KEEBLE AND WILKINSON 1999).

Although the positive aspects of such localised industries are quite strong, MARSHALL (1920) also points at possible disadvantages. Districts which rely exclusively on one industry are much more vulnerable to depressions in the case of a decrease in the demand for its products or in the supply of the raw materials it uses. Such negative consequences can be avoided if several distinct industries are present within one specific region as the other industries can support indirectly the industry which failed.

Besides the advantages and probable risks connected to localized industries within an area, the central driving force for Marshall within industrial districts is the freedom of enterprises and entrepreneurial initiative. Although collective actions may enhance the individual success of an enterprise, these might also blunt new initiatives and even inhibit competition. The localization of production aims to create a suitable environment for entrepreneurial success, favoured by positive external economies generated by the mere geographical proximity of individual enterprises rather than by institutional restructuring. Firms being closely located to

one another within an industry have the opportunity to specialize themselves within one specific area of operation. Accordingly, enterprises can “*afford to stay small and concentrate their initiatives and inventiveness on what they do best*” (KEEBLE AND WILKINSON 1999, pg. 298). Thereby entrepreneurs create a favourable atmosphere enhancing the competitiveness of the locality and securing economies of scale for the whole industrial district (KEEBLE AND WILKINSON 1999).

Contemporary concepts of local clusters, however, put much greater emphasis on collectivism and an institutional basis. Also social relationships are stressed much more, focusing especially on the influence of the community, family, social norms and rules of behaviour. The importance of interrelationships of suppliers and customers, informal collaboration or other links between firms in a certain sector as well as of collective learning processes is dealt within the theory of the ‘milieu innovateur’ (KEEBLE AND WILKINSON 1999) described in the following section.

2.2.2 Innovative milieu

The concept of the innovative or creative milieu is mainly associated with the European research network GREMI (‘Groupe de Recherche Européen sur les Milieux Innovateurs’) created in 1984 by Philippe Aydalot. The union of various European and North-American researchers in the 1980ies was initially driven by the interest in the new spatial dynamics observed in developed countries. In fact, the observation of these new dynamics induced the research network GREMI to question the basis of the regional economic development and the role of innovation within this context. New was especially the interest in the role of the territory, or more precisely, the relationship between innovation and territory what the concept of the innovative milieu aims to describe (TABARIES 2005).

The main change within the theory of the ‘milieu innovateur’ consisted of the connection between the industrial and spatial analysis of innovation in order to understand the transposition of spatial dynamics originated in the mid 1970ies and 1980ies respectively. In addition, Philippe Aydalot introduced the assumption of a transformation of spatial hierarchies in conjunction with a new technological cycle largely observed within France and other developed countries. Particularly the role of territory and the milieu was emphasized, accentuating much more local dynamics than impulses given by large enterprises. Small and medium sized enterprises (SMEs) seemed to be of greater interest within the context of innovation and local dynamics than large firms. The superordinate question, however, was

why certain regions or territories advance and innovate while others remain industrially underdeveloped. Aydalot, therefore, made a further hypothesis concerning the attitude towards innovation of regional actors (TABARIES 2005):

Les comportements innovateurs dépendent essentiellement de variables définies au niveau local ou régional. En effet, le passé des territoires, leur organisation, leur capacité à générer un projet commun, le consensus qui les structure sont à la base de l'innovation. L'accès à la connaissance technologique, la présence de savoir-faire, la composition du marché du travail et bien d'autres composantes des milieux locaux déterminent des zones de plus ou moins grande innovativité (AYDALOT 1986, pg. 10 cited according to TABARIES 2005, pg. 3).¹

Following the reasoning of Aydalot, the attitude towards innovation or innovative activities in general are defined on a regional level largely influenced by the regional background, the organisation and the capacity of generating new common projects. Furthermore, the innovativeness of a certain region is dependent on the access to new technological know-how, the composition of the local labour market or simply on the components determining the local milieu (TABARIES 2005). Since the initial assumptions of Philippe Aydalot, however, much effort has been put in verifying the milieu characteristics, effects and main conceptual elements (FROMHOLD-EISEBITH 2002).

2.2.2.1 *Conceptual elements*

The notion of an innovative milieu is in some respect quite different to that of an industrial district introduced by Alfred Marshall. It stresses the importance of personal and trustful relationships for a development towards a successful regional economy and innovation system (FROMHOLD-EISEBITH 2002), whereas MARSHALL (1020) regarded collective activities as a possible barrier inhibiting competition. According to Camagni, a member of the research network GREMI, an innovative milieu can therefore be defined as a *“set of, or the complex network of mainly informal social relationships on a limited geographical area, often determining a specific external ‘image’ and a specific internal ‘representation’ and a sense of belonging, which enhances the local innovative capability through synergetic and collective*

¹“The innovative comportment especially depends upon the variables defined at local or regional level. In fact, the territories’ past, their organisation, their capacity to generate a common project and the consensus which structures them constitute the basis of innovation. The access to technological knowledge, the presence of know-how, the composition of the labour market and also other components of the local milieu determine the zones of great or small innovativeness” (AYDALOT 1986, pg. 10 cited according to TABARIES 2005, pg. 3, translation).

learning processes” (CAMAGNI 1991, pg. 3 cited according to FROMHOLD-EISEBITH 2002, pg.3). On basis of Camagni’s definition, three sets of conceptual elements can be identified making up an innovative or creative milieu (FROMHOLD-EISEBITH 2002):²

- i. Effective relationships between regional actors eased by spatial proximity;
- ii. Learning as well as collective learning processes enhanced by social contacts;
- iii. The existence of a regional image and sense of belonging.

2.2.2.1.1 *Spatial proximity*

The first set of milieu elements refers to the advantageous effect of proximity in the case of co-operative interactions and the generation of new knowledge (FROMHOLD-EISEBITH 2002). Although some researchers still highlight the importance of spatial proximity in the exchange of information as frequent face-to-face contacts are required, other dimensions of proximity seem to be equally important.

BOSCHMA (2004) for instance describes four further forms of proximity besides the spatial dimensions: cognitive, organizational, social and institutional proximity. In this context, especially two of these, the cognitive and organizational proximity, should not be neglected. The cognitive dimension highlights the necessity of a common knowledge base between co-operation partners in order to make an effective communication and transfer of knowledge possible. However, some cognitive distance should be maintained as knowledge building often requires complementary pieces of information to trigger new sources of ideas and creativity (BOSCHMA 2004). But for actually being able to access these sources of innovativeness, actors of an innovative milieu need to be coming from different types of organisations such as universities, research institutions, manufacturing firms or public support services (FROMHOLD-EISEBITH 2002). Although complementary bodies of knowledge are necessary pre-requisites to enable an interactive learning process, organizational arrangements (such as networks) or organizational proximity are needed to coordinate the knowledge exchange between various regional actors (BOSCHMA 2004). The coordinative regrouping of productive assets is therefore one of the crucial qualities of innovative milieus (FROMHOLD-EISEBITH 2002).

² See also Tabaries, M., 2005, Les apports du GREMI à l’analyse territoriale de l’innovation ou 20 ans de recherché sur les milieux innovateurs, Université Paris: <ftp://mse.univ-paris1.fr/pub/mse/cahiers2005/R05018.pdf>, 1st July 2008.

Nevertheless, too much proximity, especially in the case of innovative milieus which are regionally bound personal networks, can also be harmful due to the risk of getting locked-in. To avoid this negative consequence, the local knowledge base should be diversified by allowing for inflows of knowledge from outside the region (BOSCHMA 2004; FROMHOLD-EISEBITH 2002).

2.2.2.1.2 *Collective learning processes*

The second aspect refers to the heart of innovative milieus – collective learning processes. Collective learning is somehow the “*territorial counterpart of learning within firms*”, so to speak “*a vehicle for temporal and spatial knowledge transmission*” (CAPELLO 1999, pg. 354). Although many authors provided several definitions for collective learning, it can be generally regarded as a “*social process of cumulative knowledge, based on a set of shared rules and procedures which allow individuals to coordinate their actions in search for problem solutions*” (CAPELLO 1999, pg. 354).

Collective learning and other socially embedded learning processes are especially favoured by mutual trust among regional actors benefiting good informal and private relationships. Following the reasoning of FROMHOLD-EISEBITH (2002), an effective combination of formal and informal contacts provides a better and in some cases an even costless access to new information as new know-how is often exchanged within a private atmosphere. Trust inherent to relationships among regional actors, not only fastens the diffusion of knowledge, but also reduces uncertainty and generates “*emotional support that backs up business decisions to innovate*” (FROMHOLD-EISEBITH 2002, pg. 4).

A trust basis, however, needs time to develop and cannot be regarded as a sufficient condition to guarantee the existence of collective learning processes. These are in fact depended on the certain pre-requisites described more precisely in a later section of this master’s thesis.

2.2.2.1.3 *Regional image*

The third and last element of an innovative milieu relates to the awareness of forming a coherent unit comprising all regional actors. As actors within an innovative milieu are explicitly coming from different types of organisations and therefore are characterized by different professional backgrounds and interests, a common regional image needs to be created in order to direct them towards a common direction. The importance of cultural resources (e.g. a common value system or specific traditions) should not be neglected within this context (FROMHOLD-EISEBITH 2002; TABARIES 2005). Some degree of institutional

proximity or more precisely, the existence of corporate regional values and habits positively influences learning and innovation (BOSCHMA 2004). Moreover, a common cultural background often plays a unifying role within the harmonization of the different interest of regional actors and the pursuance of common regional goals and strategies. A regional culture therefore motivates the creation of “*milieu relationships and joining forces*” emerging from “*shared objectives of regional development*” (FROMHOLD-EISEBITH 2002, pg. 4) with the aim of restructuring the regional economy (*ibid.*).

2.2.2.2 Strengths and weaknesses of the innovative milieu approach

Considering the qualities of an innovative milieu, FROMHOLD-EISEBITH (2002) particularly underlines the ability of innovative milieus “*to link previously unconnected information from structurally different sources*” (FROMHOLD-EISEBITH 2002, pg. 4). Within this context, the concept of the ‘milieu innovateur’ emphasizes the importance of private and professional relationships of various organisations based on trust, a common value system and language. The existence of these cultural resources not just reduces uncertainty within the transfer of knowledge, but also supports and improves the access to new know-how and information motivating firms to pursue innovative activities and to exploit collective learning processes. ‘Relational capital’ and the exploitation of collective learning, in fact, contribute significantly to positive economic externalities and feedbacks from innovative processes arising within a successful innovative milieu (FROMHOLD-EISEBITH 2002; CAPELLO 1999).

However, positive feedbacks from innovative processes and inter-firm linkages cannot be guaranteed in the long-run. Collective learning processes and the cumulation of knowledge may augment the risk for firms of getting locked “*into obsolete and increasingly non-competitive technological trajectories*” (KEEBLE AND WILKINSON 1999, pg. 299). The heart of innovative or creative milieus, namely collective learning processes which initially act as “*barriers to entry to outsiders*” may turn into “*barriers to exit for insiders*” (CAPELLO 1999, pg. 359). External knowledge inflows or simply external learning is therefore essential for innovative milieus to stay competitive and to prevent a lock-in (CAPELLO 1999).

Additional to the danger of a lock-in, innovative milieus describe a sort of “*abstract entity, an ideal archetype*” (CAPELLO and FAGGIAN 2005, pg. 78) that is difficult to implement in reality. A milieu is a system that continuously evolves, strongly depending on its past. Its success is based on “*feedbacks and reciprocal causality relationships*” (*ibid.*) overlooking the

fact that firms are exposed to an unstable, changing environment with the need of stability and reliability (FROMHOLD-EISEBITH 2002).

2.2.2.3 The difference to Marshall's industrial districts

Following the reasoning of TABARIES (2005), innovative milieus or milieus in general are in some respect quite different from industrial districts. Industrial districts are specialised areas emphasising the importance of the localisation of production, entrepreneurial freedom, individualistic initiative (KEEBLE AND WILKINSON 1999) and processes of technological innovation strongly favoured by close geographical proximity of firms (TABARIES 2005). For Marshall, the quality of industrial districts or localised industries is the creation of an industrial atmosphere advantageous to the individual success of enterprises.

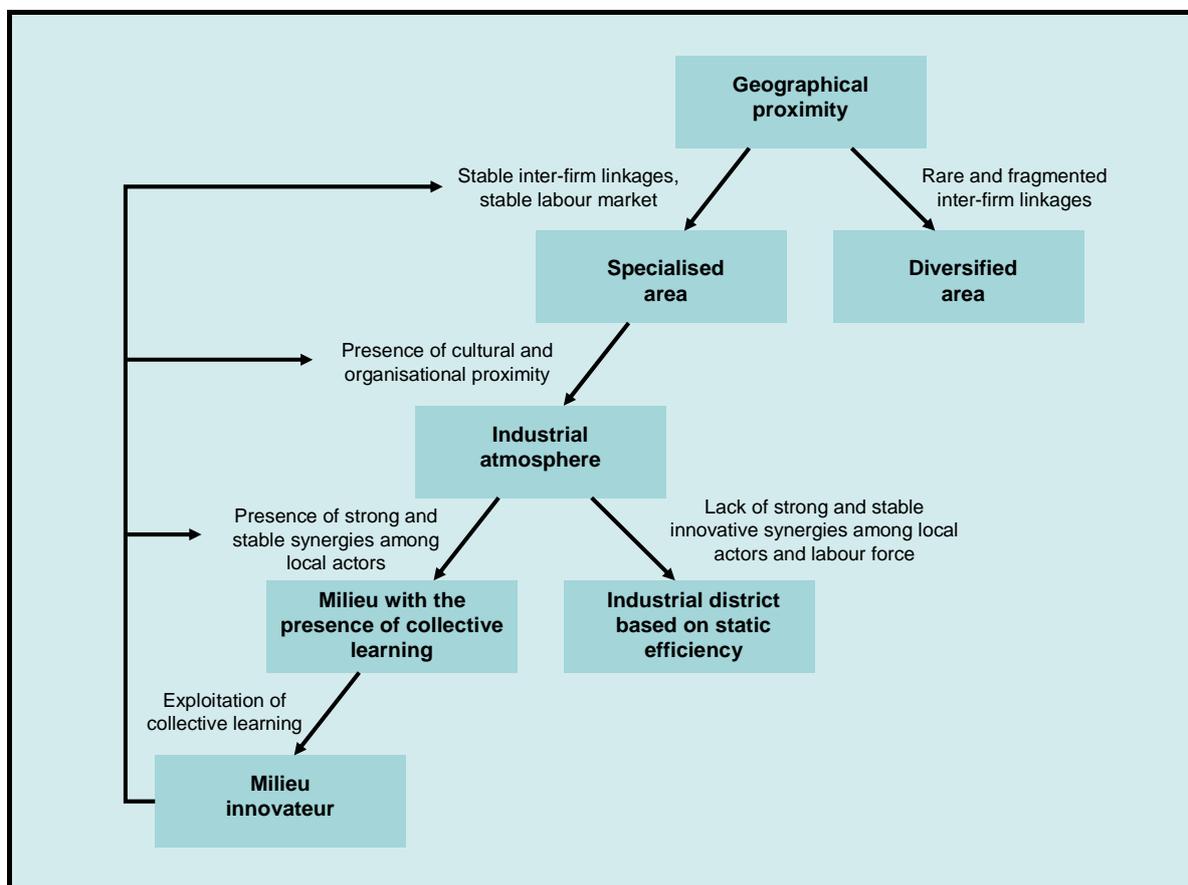


Figure 1: Different local systems (Source: KIRSCHNER et al. 2008; based on CAPELLO 1999, pg. 358).

Whereas Marshall opposes the idea of strong social relationships and collective actions as a strategy of fostering entrepreneurial success, the concept of the innovative milieu highlights the positive impact of supplier-costumer and inter-firm relationships as well as the inter-firm mobility of skilled employees within the localised labour market. While Marshall feared that too much collectivism blunts entrepreneurial initiative and may inhibit competition, the free

flow of knowledge and the existence of co-operative relations between regional enterprises may generate strong and stable synergies among local actors and hence support the creation of a milieu (KEEBLE AND WILKINSON 1999).

Within this context, CAPELLO (1999) provides a schema of how innovative milieus develop (see figure 1). The mere geographical proximity turns an area into a specialised area as far as stable inter-firm linkages and a local labour market assure *“the continuity over time of local technological and scientific know-how in the specific sectors on which the locality’s comparative advantage rests”* (CAPELLO 1999, pg 357). Under the pre-condition of close cultural and organisational proximity generating trust and encouraging the transfer of knowledge, an industrial atmosphere and consequently an industrial district develops. This industrial district is based on static efficiency or more precisely on the existence of an industrial atmosphere and the reduction of transaction costs. If the transfer of tacit knowledge and prevailing co-operations are then transformed into synergies and innovative capacity, a milieu, characterized by the presence of collective learning, is created. An ordinary milieu with the simple presence of collective learning, however, cannot be regarded as identical to a ‘milieu innovateur’. The main difference between these two local systems is the ability of innovative or creative milieus to exploit collective learning in order to develop new products and processes. An innovative milieu is therefore capable of turning *“collective learning into profits”* (CAPELLO 1999, PG.357).

According to Cappello’s schema, innovative milieus differ from industrial districts with respect to innovative synergies among local actors and the presence as well as the exploitation of collective learning. Collective learning is therefore the distinct feature of innovative milieus. However, collective learning processes do not appear automatically, but are, in fact, dependent on the existence of a specific regional framework described in the following section.

2.3 Collective learning and further learning systems

As mentioned within a previous section, collective learning can be defined as a *“social process of cumulative knowledge, based on a set of shared rules and procedures which allow individuals to coordinate their actions in search for problem solutions”* (CAPELLO 1999, pg. 354) and constitutes the heart of the concept of the ‘milieu innovateur’. Although collective learning can be regarded as an essential ingredient of transforming an ordinary milieu into an innovative one, other forms of learning play an equally important role within the regional

development towards a ‘milieu innovateur’. Therefore section 2.3 aims to discuss further systems of learning apart of the characteristics and pre-conditions of collective learning.

2.3.1 Collective learning

Learning is collective because it is cumulative on the one and interactive on the other hand (CAPELLO 1999). Following KEEBLE AND WILKINSON (1999), collective learning can come about via conscious or unconscious mechanisms. While examples for conscious mechanisms include co-operations between regional enterprises or between regional enterprises and R&D institutions in terms of interactive learning, unconscious mechanisms describe for instance the movement of ‘embodied expertise’ in form of skilled workers or managers (KEEBLE AND WILKINSON 1999). Collective learning, in addition, has a public dimension. The spatial transfer of knowledge is socially determined and strongly supported by common organisational and institutional routines which facilitate the sharing of new know-how and information. The results of innovative activities thereby rapidly become a public good, making creative knowledge accumulated outside the firm a club good. Collective learning therefore provides external economies exclusively to club members, whereas external agents “*are barred from access*” (CAPELLO 1999, pg. 356). However, collective learning requires the following regional pre-conditions in order to get activated within a geographically bound network.

2.3.1.1 Pre-conditions

2.3.1.1.1 Territorial relationships

The first pre-requisite refers to a social and institutional dimension. The milieu approach at this, particularly emphasizes the importance of territorial relationships between all actors, private and public respectively, and highlights the support of institutions which should encourage inter-firm relationships as well as relationships between firms and educational and/or research institutions (LONGHI 1999). These co-operative interactions and collective learning processes are especially favoured by a certain degree of social and institutional proximity. While institutional proximity refers to the idea of actors sharing the same culture and values as well as the same institutional rules and a common language, social proximity in this context should be understood as socially embedded relations between agents which involves trust based on friendship and positive past experiences. These trust-based, social relationships between regional actors not just facilitate the exchange of tacit knowledge, but also encourage a “*social and open attitude of communicative rationality*” (BOSCHMA 2004,

pg. 66) and thereby enhance collective learning. An effective collective learning process requires, however, durable and persistent relationships contrary to pure, quickly dissolving market relationships.

Nevertheless, too much social proximity even in the case of collective learning may be impedimental to the spirit of innovation as too strong emotional bonds may lead to an underestimation of opportunism. Even long-term relationships may have an adverse effect on an actor's innovative and learning capacity because the members of social networks may lock in practicing hindering routines. In contrast, too little social proximity may harm collective learning processes because of a lack of trust and commitment. BOSCHMA (2004) therefore suggests a U-form relationship between social proximity and the innovative performance of a firm (see figure 2).

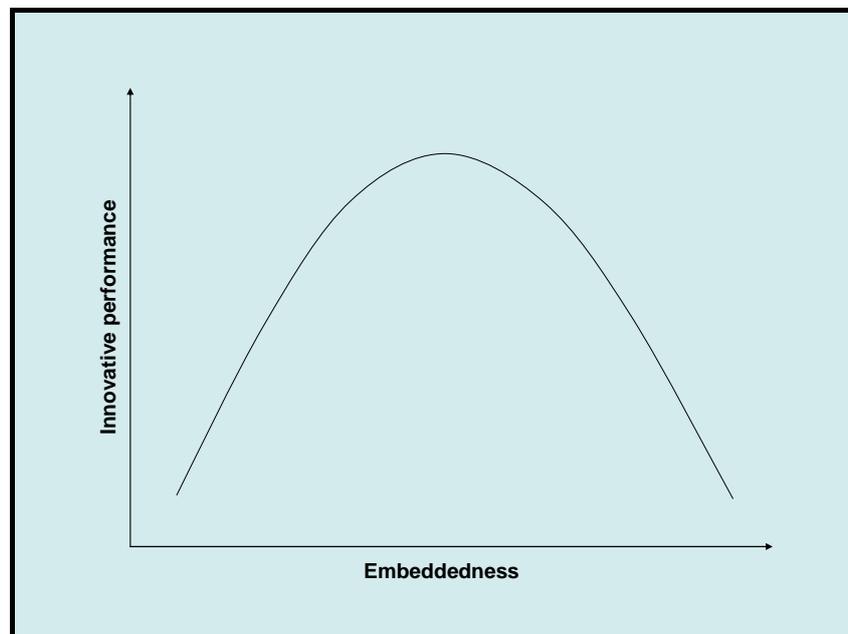


Figure 2: Relationship between the degree of embeddedness and the innovative performance of a firm

(Source: BOSCHMA, 2004, pg. 67).

The degree of social embeddedness has a positive influence on the innovative performance at firm-level up to a certain threshold, beyond this threshold too close social relationships can have a negative effect on a firm's innovative performance because of a probable lock-in and an underestimation of opportunism (BOSCHMA 2004).

2.3.1.1.2 Regional knowledge base

The second requirement focuses on the existence of a specific knowledge base within the region, so some degree of cognitive proximity described before. The development of

successful spin-offs of individual entrepreneurs from this specific, local knowledge base or technological resource base can be an essential driving force for collective learning. As a consequence, a common regional knowledge base is not just crucial for an effective communication and information exchange between local actors, but can also contribute to a sustainable economic development and a successful innovation system (LONGHI 1999).

Besides its importance within a successful regional innovation system, the existence of a regional knowledge base is also strongly connected to the development of regional core competences as well as of dynamic and combinative capabilities respectively. “A *core competence describes what a certain region is able to do better than others, whereas a dynamic capability refers to the ability of a region to renew and augment its core competences over time*” (KIRSCHNER *et al.* 2008, pg. 14). In contrast to the dynamic, the combinative capability relates to a region’s ability to combine and recombine its diverse and complementary resources. Such a capability can either be achieved by the mobility of skilled labour or through the direct establishment of co-operative relationships between individual firms. The knowledge transfer is in both cases connected to a common language within the network and above all to a regional knowledge base (LAWSON UND LORENZ 1999).

Specific regional knowledge, no matter whether this knowledge is related to technology, organisation or marketing, is therefore not just necessary for the further development of regional core competences (LAWSON UND LORENZ 1999), but also essential for the exploitation of collective learning.

2.3.1.1.3 *Local labour market*

The third and final pre-condition required by collective learning is the existence of a local labour market “*characterized by high levels of skilled labour mobility and the diffusion of embodied and tacit expertise and technological know-how*” (LONGHI 1999, pg. 336). The collection of new information usually takes place in a socialized way outside an enterprise in the local labour market as well as in customer-supplier networks of small and medium sized enterprises (SMEs). A stable labour market is therefore an important pre-condition for qualified workers to search for jobs within the existing milieu. The stronger the “*the social sense of belonging to a specific territory*” the higher the probability for “*a very low external labour force mobility*” (CAPELLO 1999, pg. 355). In addition to social and economic reasons inducing workers to stay within a specific region, a high degree of specialisation of such innovative or creative milieus restricts the “*market for local skills outside the area*” (*ibid.*),

constituting a barrier of exit to the local labour force. Specialisation, in fact, enhances the stability of a regional labour market (CAPELLO 1999).

The mere existence of a local labour market, however, is not a sufficient condition to guarantee the exploitation of collective learning processes. In order to achieve collective learning as well as the transfer of new know-how between actors within the boundaries of an innovative milieu, a high mobility of labour is required as well as an increase of interactions of various actors and the creation of local spin-offs (CAPELLO 1999).

2.3.1.2 The exploitation of collective learning at firm-level

Although a certain milieu may provide the pre-conditions required by regional collective learning, it is strongly dependent on the decision of each local actor. A firm's willingness to exploit collective learning processes is influenced by two factors:

- i. The type of innovation a firm pursues;
- ii. The sizes of an enterprise (CAPELLO 1999).

Following the reasoning of CAPELLO (1999), continuously innovating enterprises which concentrate their innovative capacity on radical product innovations are more likely to exploit collective learning as well as creative resources provided by the local labour market. In contrast, firms performing incremental process innovations tend to use knowledge accumulated within the enterprise and are therefore "*less oriented towards the exploitation of externally generated knowledge*" (*ibid*, pg. 358). Besides the type of innovation, also the firm's size plays a significant role within the participation of regional collective learning. Large firms are usually more oriented towards the utilization of internal innovative resources and knowledge generated within the enterprise. As a consequence, large firms are less likely to exploit collective learning as a potential source of new know-how because these, by definition, have more resources to spend on further knowledge creation. Unlike large firms, small enterprises are more inclined to participate within the process of collective learning once it has been established (CAPELLO 1999).

2.3.2 Further learning systems

Regarding the importance of firm-specific characteristics within the exploitation of collective learning processes as well as the regional pre-conditions required, firms which do not participate in the process of collective learning (either voluntarily or because collective learning has not yet been achieved within one specific area) usually utilize other learning

systems besides collective learning. Hence, within the following section four further systems of learning should be presented.

2.3.2.1 Learning-by-doing

The idea of the concept ‘learning-by-doing’ was first picked up in 1962 by Arrow who based his theory on empirical results within the aviation and shipyard industry. ‘Learning-by-doing’ generally describes the positive effects of experiences on productivity. A firm, for instance, which acquires physical capital in form of new machines or computer systems, generates learning effects by using the new capital within the production process and thereby accretes an increasing stock of experience. This, as a consequence, positively affects the firm’s productivity and cost curve (leading to decreasing per unit costs) and thus increasing the firm’s competitiveness. Learning in this context can therefore be regarded as a joint product of the production process without generating additional costs (STEINER AND HARTMANN 2006).

‘Learning-by-doing’, however, is not confined to a single enterprise. Spillover effects can lead to a rapid diffusion of newly gained experiences within a cluster of firms. Knowledge within this framework is therefore a public good with the characteristics of non-rivalry and non-excludability (STEINER AND HARTMANN 2006).

2.3.2.2 Interactive learning

The concept of ‘interactive learning’ or ‘learning-by-interaction’ dates back to Lundvall and is strongly connected to regional and national innovative systems. Learning within this concept is conceived “*a set of activities in which all kind of knowledge are (re-) combined to form something new*” (MEEUS *et al.* 1999, pg. 4 cited according to STEINER AND HARTMANN 2006, pg. 61) leading to innovative activities within or between firms. The knowledge parts recombined during this process of learning are usually complementary and regionally constrained. As these complementary parts of knowledge are mostly possessed by different regional actors, interactions are necessary in order to generate new know-how. Within the concept of ‘interactive learning’ interactions leading to innovation can occur between

1. enterprises operating in the same industry (in terms of product or process innovations),
2. costumers and producers (generating product innovations),
3. enterprises in different industries, but possessing complementary pieces of knowledge, or finally

4. between enterprises and universities or R&D institutions (STEINER AND HARTMANN 2006; KIRSCHNER *et al.* 2008).

In summary, learning within this concept can be understood as a comprehensive organisational communication process between variable actors possessing different knowledge endowments within one innovative system (STEINER AND HARTMANN 2006).

2.3.2.3 Learning regions

The expression ‘learning region’ exists until the mid 1990ies. The basis of the concept of ‘learning regions’ is ‘learning-by-interacting’ or ‘interactive learning’ which should be supported by a collective capability for innovation on an inter-firm and regional level. The pre-conditions for the development towards a learning region are on the one hand organisational innovations which should transform regional enterprises into learning organisations (how these organisational innovations should be achieved is not discussed within the concept of learning regions). On the other hand horizontal co-operations between regional enterprises should be established in order to get access to regional knowledge and to facilitate the diffusion of external knowledge within the existing network. Moreover, the concept of the learning region should prevent a lock-in of development caused by localised path-dependency. Cluster within this concept should therefore encourage the development of new perspectives in order to counteract path-dependency. However, how this regional development should be achieved is not mentioned by the authors promoting this concept (STEINER AND HARTMANN 2006).

On a theoretical basis, however, the concept of the learning region can hardly be differentiated from the concept of collective learning. Both theories emphasize the importance of horizontal co-operations and regional innovation systems (STEINER AND HARTMANN 2006).

2.3.2.4 Learning organisation

During the last few years the term ‘learning organisation’ or ‘organisational learning’ was often discussed in literature. Senge, for instance, defined a learning organisation as an organisation “*where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspirations are set free, and where people are continuously improving their personal capabilities*” (SENGE 1990, pg.15 cited according to STEINER AND HARTMANN 2006, pg. 71). According to this definition the basis of organisational learning is simply learning by each individual within the organisation. In the centre of the concept of the learning organisation are

therefore connections between the changing stock of knowledge of each organisational member and its effects on processes within the enterprise. However, organisational learning is not equal to individual learning or the aggregation of individual learning processes within the firm. The organisation learns through the experiences and actions of its individuals (STEINER AND HARTMANN 2006).

The term ‘learning organisation’, however, denominates not just firms but also networks. Organisational learning, in general, comprises three types of learning – individual, team and system learning – which take place simultaneously. “Such ‘integrative capabilities’ belong to the most important factors for networks as a pre-requisite for regional development” (STEINER AND PLODER 2007, pg. 6). Organisational learning therefore highlights the importance of the integration of different pieces of knowledge and institutional arrangements, generating new knowledge and a learning network (STEINER AND HARTMANN 2006).

The different systems of learning change, however, in course of regional development and the development of an individual firm. Dependent on the degree of innovative maturity, a certain type of learning will be prevailing within each individual enterprise and within a specific region.

2.4 Innovative maturity

Within a regional innovation system a firm has to pass different stages of ‘innovative maturity’, represented by the so called ‘innovation pyramid’ in figure 3. While the pyramid itself represents the stock of enterprises operating within a specific region, the smaller pyramid within comprises only those enterprises which pursue innovative activities. The firms’ innovativeness can be described according to one of the following three stages of innovative maturity (KIRSCHNER *et al.* 2008):

1. Irregular or sporadic innovating firms,
2. Emerging innovating firms,
3. The peak of innovation.

The first stage comprises all ‘irregular or sporadic innovating firms’. These constitute the basis of the smaller, light blue pyramid within and are usually small or medium sized enterprises which do not have the internal capacities to pursue innovation regularly. Characteristic for these firms is a small, specialized product portfolio and – in contrast to firms at the upper two levels – the pursuance of an application-oriented R&D. The second

stage includes the so called ‘emerging innovating firms’. Unlike their sporadic or irregular innovating counterparts, these pursue innovation regularly and in a project-based manner. Accordingly, ‘emerging innovating enterprises’ are on the threshold for permanent innovation (KIRSCHNER *et al.* 2008).

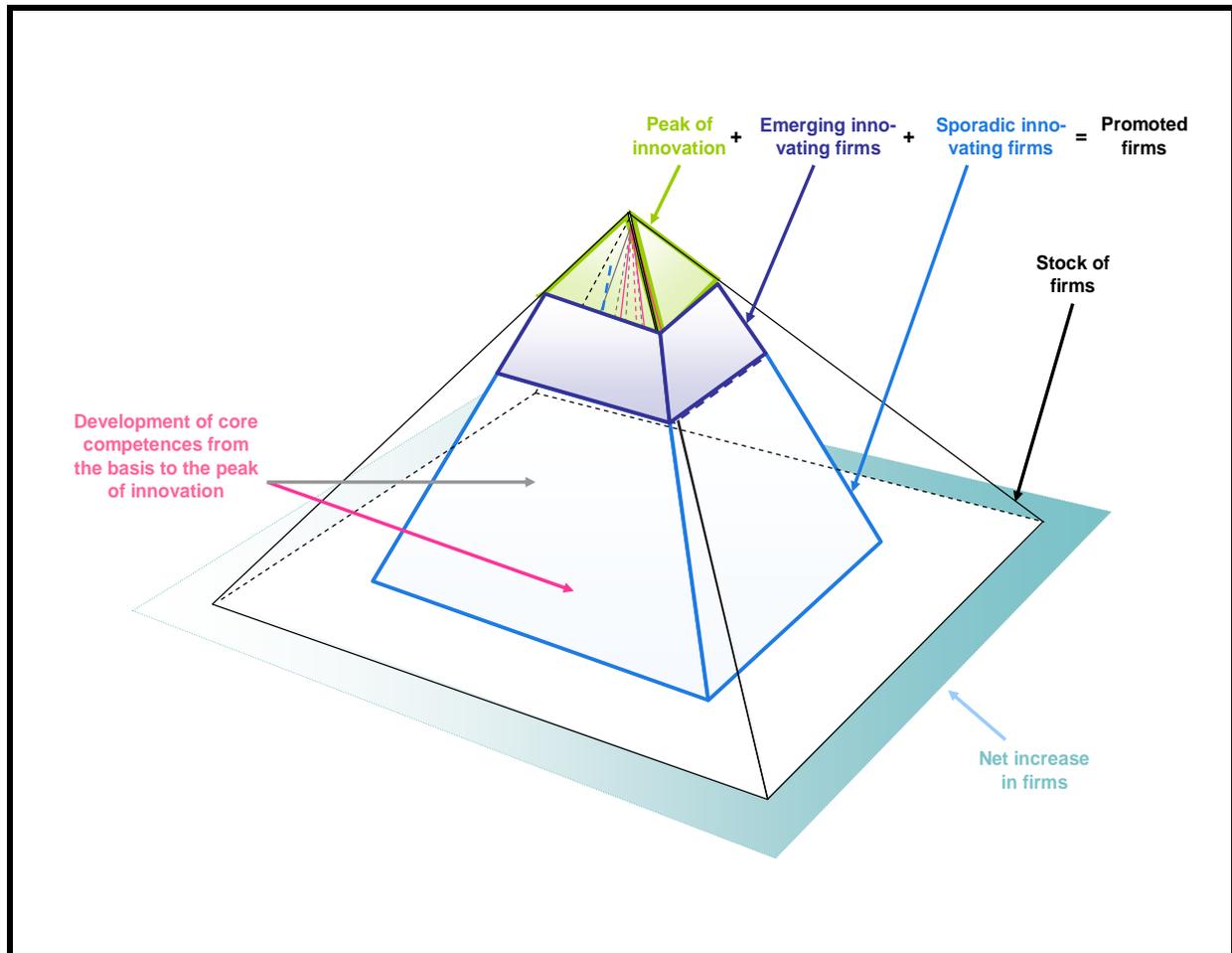


Figure 3: Innovation pyramid (Source: Joanneum Research – InTeReg by Ploder, Niederl, Kirschner 2008 in KIRSCHNER *et al.* 2008, pg.20).

The final stage, ‘the peak of innovation’, denotes all enterprises which pursue innovative activities continuously. As a result of their continuous research and development activities, firms located at the peak of the ‘innovation pyramid’ often possess an own innovation centre or R&D laboratory and usually employ skilled labour directly on R&D (KIRSCHNER *et al.* 2008).

2.4.1.1 Co-operations and learning patterns

Along with an increasing innovativeness, also the co-operative profile of each individual firm is transformed. Enterprises at the first stage of ‘innovative maturity’, hence all firms at the basis of the ‘innovation pyramid, hardly cooperate with other regional actors or just in a

loose, incoherent manner. As a consequence, learning patterns at this developmental stage of innovativeness are mainly characterized by learning-by-doing or interactive learning processes, whereby the focus of firms strongly lies upon competition via price of products and services (KIRSCHNER *et al.* 2008).

In the case of ‘emerging innovating firms’, collaboration with other regional actors increases and learning patterns evolve towards a system of collective learning. “*Within this stage, territorial relationships between different regional actors and the existence of a specialized regional labour market characterized by high levels of skilled labour mobility gain in importance*” (KIRSCHNER *et al.* 2008, pg. 19).

At the final stage of ‘innovative maturity’ or more precisely, at ‘the peak of innovation’, collective learning is intensified and R&D as well as the pursuance of innovation becomes even more important, spurring regional development. “*A region with distinct patterns of collective learning therefore step by step develops towards a learning region marked by strong horizontal co-operations between regional enterprises and a good access to regional knowledge*” (KIRSCHNER *et al.* 2008, pg. 19). Enterprises at ‘the peak of innovation’ are transformed into learning organisations, dedicating a high proportion of given capacities on the continuous expansion of the internal stock of knowledge. “*Thereby not only the quality and technology of provided products can be improved, but also findings of other regional enterprises can be nurtured by new results and know-how of regional technological leaders*” (*ibid.*).

In summary, out of an area marked by the mere existence of geographical proximity of regional actors a specialized area and – as a consequence of an increasing institutional and organisational proximity – an industrial atmosphere is created. A specialized local labour market and stable innovative synergies spur the development of an innovative milieu and the implementation of collective learning processes within a certain region. Due to the increasing exploitation of collective learning by regional firms, “*positive feedbacks from the innovation process are generated and stable inter-firms linkages as well as a stable labour market are reinforced*” (KIRSCHNER *et al.* 2008, pg. 19).

2.5 Hypotheses and central questions

Before the theoretical framework is applied to the case study area which is presented in more detail within the following chapter, it should be scrutinised whether the concept of the ‘milieu

innovateur' and respectively of collective learning can be used within the context of rural areas. Within literature (CAPELLO 1999; CAPELLO *et al.* 2005; FROMHOLD-EISEBITH 2002; KEEBLE *et al.* 1999; LONGHI 1999) it is mostly referred to certain regional pre-conditions and conceptual elements which determine the existence of innovative milieus, but it is hardly ever questioned to which type of region the theory can be applied to. Therefore the present diploma thesis tries to investigate whether the concepts of the 'milieu innovateur' and of collective learning are designed exclusively for urban areas or if they are also applicable to peripheral regions. In fact, the theory of innovative or creative milieus first originated in the 1980ies due the interest of the European research network GREMI in the relationship between territory and innovation as well as the role of innovative activities within the regional economic development (see section 2.2.2). In this context, it is not stated explicitly to which 'sort' of territory the concept relates to. However, according to the regional pre-requisites demanded by the creation of an innovative milieu and of collective learning processes, an innovative milieu seems to be more difficult to implement within rural areas than within city-regions. The nature of peripheral regions which are generally characterized by a low population density, a lack of entrepreneurship and the migration of labour, may prohibit the full exploitation of their full innovative potential. Due to the strained economic situation prevailing within rural areas, certain pre-conditions required by the implementation of an innovative milieu (such as a stable regional labour market with high levels of skilled labour mobility) will be difficult to meet.

In consideration of the applicability of the concept of the 'milieu innovateur' and the general characteristics of rural areas, the hypotheses underlying the present case study are the following:

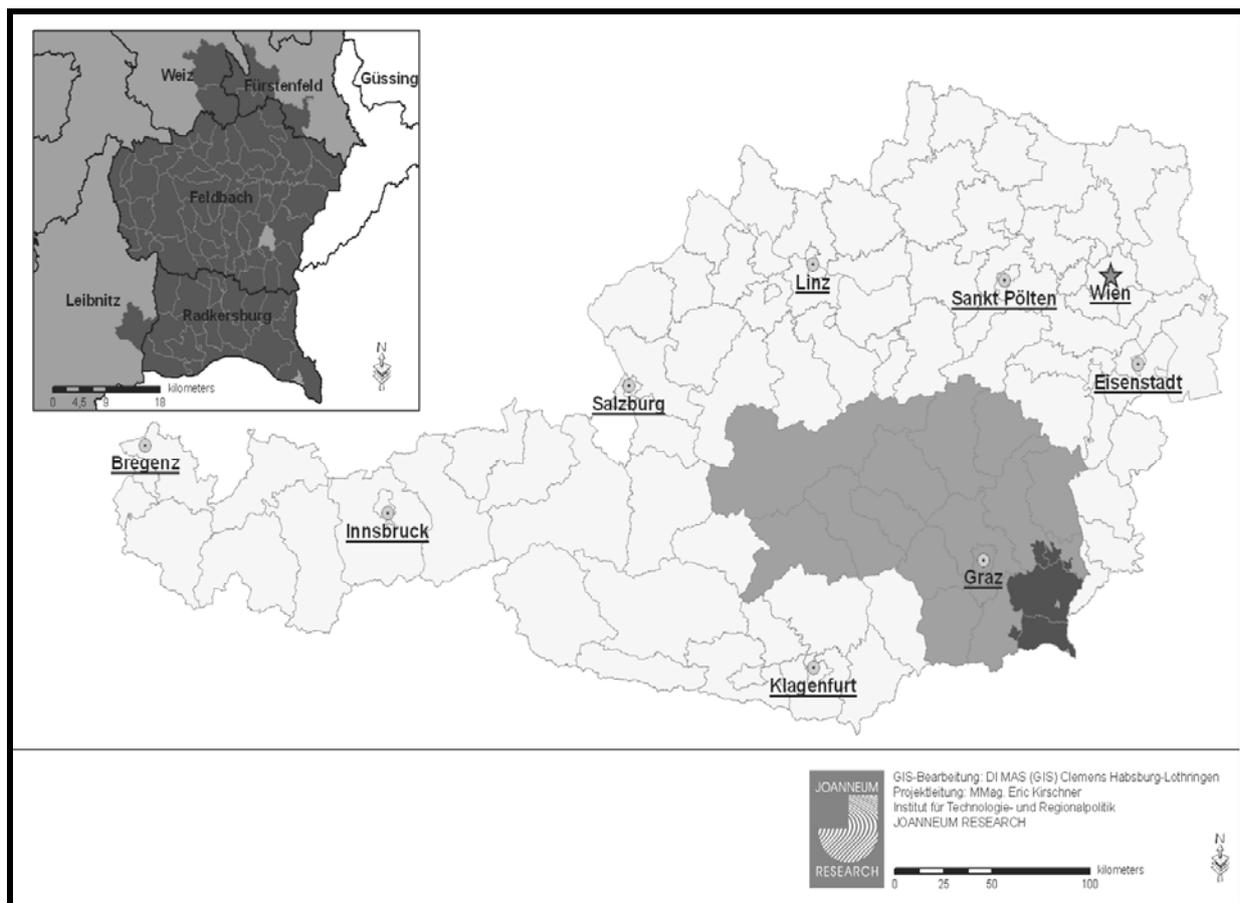
- H1.** The case study area will not provide all set of elements necessary for the creation of an innovative milieu and the implementation of collective learning processes due to its rural character.
- H2.** The majority of the enterprises part of the survey (mainly very small or small enterprises) will belong to the group of 'irregular or sporadic innovating firms' due to a lack of internal human and financial resources.

The indicators observed within this context are described in more detail within chapter 4, section 4.1.

3 THE STYRIAN VULKANLAND

3.1 Historical Background

The Styrian Vulkanland denotes the co-operation of 77 Austrian municipalities [Gemeinden] in the South-East of Styria pursuing a common regional development strategy in social, economic and ecological respect. The idea of creating a comprehensive co-operation first originated within the Bezirk Feldbach [LAU level 2] in 1998. In the year 2000, the Bezirk Feldbach then started to cooperate with the adjacent Bezirk Radkersburg which adopted due to common socio-economic structures Feldbach's regional development strategy. 2001 the association of the Styrian Vulkanland already comprised 65 municipalities. Since then the number of municipalities has grown to 77 members mainly from within the Bezirke Feldbach and Radkersburg, but also out of the Bezirke Fürstenfeld and Weiz (see figure 4) (KROTSCHKEK *et al.* 2007a; HARDER in KIRSCHNER *et al.* 2008).



*Figure 4: Map of the Styrian Vulkanland (dark-grey area) (Source: JOANNEUM RESEARCH-InTeReg by Habsburg-Lothringen and Kirschner 2008 in KIRSCHNER *et al.* 2008, pg. 25).*

The creation of the Styrian Vulkanland was spurred by the aim of resolving typical problems of rural areas often struggling with several economic weaknesses within a globalized world. A weak economic activity, a lack of entrepreneurship, infrastructural problems, a high level of agrarian activity and the migration of workers searching for jobs within urban areas are just a few difficulties rural areas have to deal with. Besides these problems, the association of the Styrian Vulkanland aspired to balance economic, social and ecological concerns focusing on the fortification of the regional value base characterized by individual responsibility, rootedness, friendship and experience (KROTSCHECK *et al.* 2007a).

The development of the whole regional potential and the implementation of certain regional development strategies, however, need to be supported by various regional actors ranging from politicians and regional enterprises to consumers and local inhabitants. Moreover, public funds have to be used in an efficient and economical manner requiring the division of communal and regional problems. While municipalities within the Vulkanland (constituting the communal level) are mainly responsible for the accurate implementation of regional projects and the assurance of the local supply satisfying the basic needs of local inhabitants, the ‘Association for the Promotion of the Styrian Vulkanland’ accounts for the creation and pursuance of a common regional vision which supports the augmentation of regional prosperity and economic sustainability. In particular, the association’s functions comprise the initiation of regional transformation processes, the design of regional projects and the development of a common regional development strategy including the sensitisation of the regional population, the clarification of the region’s economic position and the creation and promotion of a common regional brand (KROTSCHECK *et al.* 2007a).

The comprehensive co-operation of the Bezirke Feldbach, Radkersburg, Fürstenfeld and Weiz under the synonym ‘Styrian Vulkanland’ has a much more far-reaching impact than the efficient allocation of public financial resources. In face of globalization and the support of the European Union of the regional development within rural areas, the Vulkanland created in course of its collective regional development strategy a ‘department for the figuration of the future’ in order to overlook future possibilities of regional development as well as to achieve a more efficient official organisation and management. Above all, the Vulkanland succeeded in realizing an area of identification. Thereby the precise definition of regional guidelines, the specification of a sphere of action and of socio-economic emphases as well as the creation of traceable structures have been established, facilitating individual and collective processes of regional actors. Besides the formation of a clear organisational structure, the Vulkanland and

the correspondent regional brand strengthened the regional confidence of the local population as well as enterprises and augmented the awareness of inhabitants for regional products, spurring their regional demand (KROTSCHECK *et al.* 2007a).

The Vulkanland, in fact, created a regional socio-economic momentum and an increased appreciation for the regional production as well as for cultural and scenic resources. Regarding the promotion of collective activities and the image of an innovative and emerging region characterized by a strong ‘sense of belonging’ of regional agents, the Vulkanland seems to fulfil at first glance one pre-condition necessary for creating an innovative milieu. However, before the development strategy and the innovative potential of the Styrian Vulkanland are investigated more closely, some economic and demographic facts should be presented within the following section.

3.2 The Vulkanland’s regional profile

As mentioned at the beginning of this chapter, the Styrian Vulkanland is composed of 77 municipalities. Although some municipalities are situated within the Bezirk Fürstenfeld or Weiz, 70 are located within the Bezirk Feldbach and Radkersburg (see figure 4). As the Bezirk Feldbach and Radkersburg mainly constitute the Styrian Vulkanland, at least as far as the number of municipalities is concerned, the numerical representation of the economic and demographic situation within the Vulkanland only accounts for data of these two areas. This representation, in fact, is a first step towards showing probable difficulties arising within rural areas (HARDER in KIRSCHNER *et al.* 2008).

3.2.1 Demography

Considering the size of the Bezirk Feldbach and Radkersburg, 727 km² and 337 km² respectively, the Styrian Vulkanland comprises an area of 1.064 km² accommodating in total about 100.000 inhabitants. Thus, the Bezirk Feldbach comprehends a population of 67.626 and the Bezirk Radkersburg of about 23.433 people (8.941 people are living within the Bezirk Fürstenfeld or Weiz). Calculating the number of people living per each square kilometre³, the Vulkanland exhibits a population density of 86 inhabitants per each km². This value is below

³ The population density in this case is calculated only on basis of the WIBIS data available on the Bezirk Feldbach and the Bezirk Radkersburg (the regional data on the 7 municipalities outside the Bezirk Feldbach and Radkersburg is not considered).

the Austrian (99 people per each km²), but clearly above the Styrian population density (73 inhabitants per km²) (HARDER in KIRSCHNER *et al.* 2008; WIBIS STEIERMARK 2008).

As far as the demographic development of the Styrian Vulkanland is concerned, the birth rate in the year 2006 in Feldbach amounted to 8,9 and in Radkersburg to 6,9 babies born per 1000 inhabitants, compared to 9,4 in whole Austria. Also the death rate in Feldbach and Radkersburg differed from the Austrian average: 8,8 and 10,4 versus 9,0 per 1000 inhabitants. Considering the number of death and nativities in the Vulkanland, birth exceeded death by 131 babies born in Feldbach (in Austria by even 13.901), whereas in Radkersburg during the same period of 2002 until 2006 death exceeded nativities by 444 people (HARDER in KIRSCHNER *et al.* 2008; WIBIS STEIERMARK 2008).

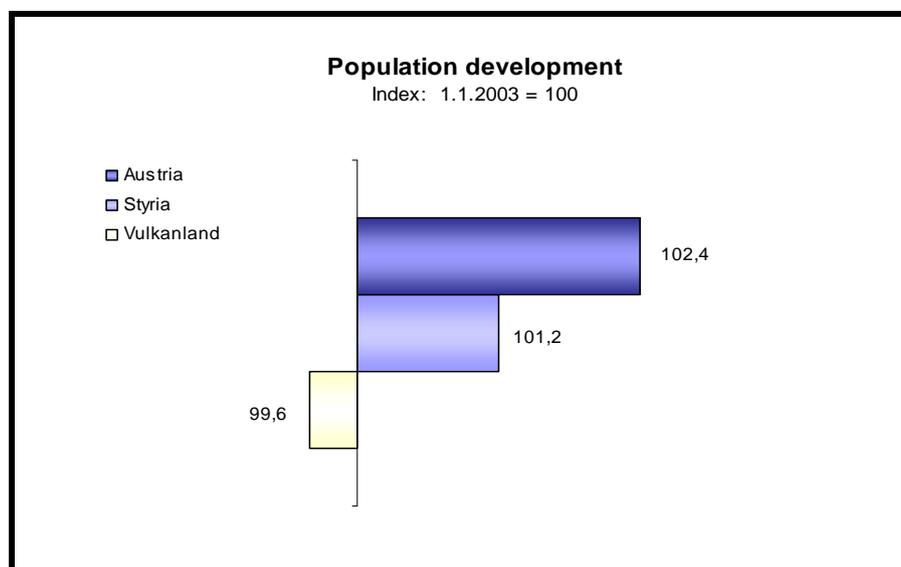


Figure 5: Demographic development (Data Source: WIBIS Steiermark 2008).

Regarding the population development within the Vulkanland (compare to figure 5 and see also Annex 1: Tables), the population has decreased since 2003 by 0,4 %, whereas it increased in Styria by 1,2 % and in Austria by even 2,4 % (WIBIS STEIERMARK 2008).

3.2.2 Labour market, employment and qualification

In the year 2006, the employed population of Vulkanland comprised about 17.177 people (the Bezirk Feldbach with 12.293 and the Bezirk Radkersburg with 4.884 employed persons). The annual development in the period 2002 to 2006 was 1,6 % in Feldbach and 1,9 % in Radkersburg. Accounting for the education, 2,4 % (2,5 %) of the employed people in Feldbach (Radkersburg) are university graduates, 8,4 % (8,9 %) completed a secondary school, 53,1 % (50,2 %) terminated an apprenticeship, 27,3 % (30,2 %) at least attended

compulsory school and only 0,7 % (0,6 %) are without any completed formation. In comparison to Styria, there 10,1 % of the employed population are university graduates (clearly more than within the Vulkanland), 11,5 % completed a secondary school, 46,6 % terminated an apprenticeship, 22,4 % at least attended compulsory school and only 0,6 % have not completed any formation. In addition, Feldbach and Radkersburg together had about 1.185 trainees in the year 2006 which are 0,9 % of all trainees in Austria, 125.961 in total. Since 2002 the number of trainees per 1.000 employees has decreased in Feldbach and Radkersburg by 4,3 % and by 9,4 % respectively, whereas it increased in Austria by 0,4 % (HARDER in KIRSCHNER *et al.* 2008; WIBIS STEIERMARK 2008).

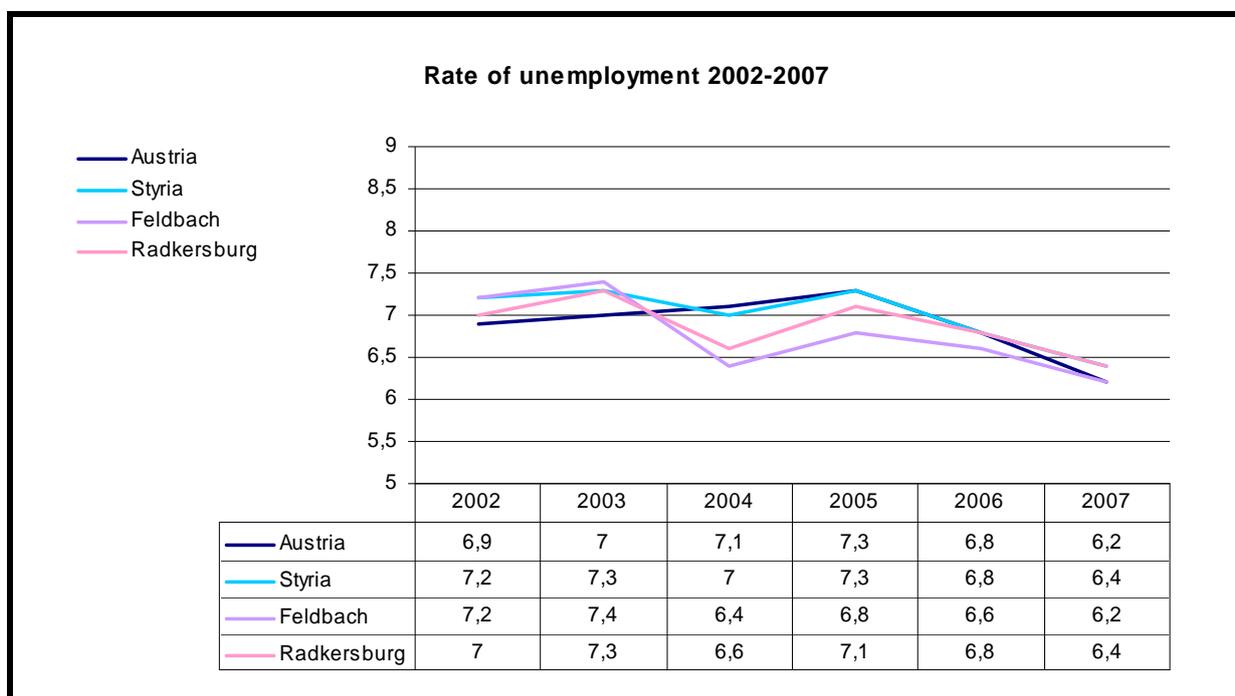


Figure 6: Unemployment rate 2002-2007 (Data Source: Statistik Steiermark 2008, WIBIS Steiermark 2008).

Comparing the situation on labour markets in 2006, Feldbach and Radkersburg together had about 2.515 and Austria even 239.174 unemployed. The Vulkanland's share in the total stock of unemployed people in Austria is therefore 1 %. As far as the unemployment rate⁴ is concerned, the ratio decreased slightly during the time period 2002 to 2007. This development

⁴ The unemployment rate (based on the national definition) is calculated by the ratio of the unemployed to the number of people employed plus the stock of unemployed. The national definition used on the level of a Bezirk, however, is simply the share of unemployed in the stock of employed people (for further information see Annex 3: Definitions and Classifications).

is, in fact, quite similar to the one in whole Austria and Styria respectively (figure 6). Once again looking at the qualifications, only 2,7 % (3,1 %) of the unemployed in Feldbach (Radkersburg) were university graduates, 47,7 % (53,4 %) completed an apprenticeship and 39 % (31,3 %) terminated compulsory school (HARDER in KIRSCHNER *et al.* 2008).

Although the unemployment rate within the Styrian Vulkanland is quite similar to the Austrian average, it suffers from a typical problem of rural areas – migration of labour. The labour force is strongly attracted by better paid and more attractive jobs within urban areas (about the half of the daily commuters in the Vulkanland are working in the Styria's capital city Graz which requires a drive of about one to one and a half hours). About 45 % of the employed population is working outside its district [Bezirk] mostly due to the economic weaknesses of the region (HARDER in KIRSCHNER *et al.* 2008; LENZ *et al.* 2005).

3.2.3 Enterprises and economic structure

In the year 2006, 1.893 enterprises in the Vulkanland (1.377 in Feldbach and 516 in Radkersburg) offered jobs to local inhabitants. In Feldbach (Radkersburg) 26,7 % (26,3 %) of the employed population are working in very small enterprises with 1 to 9 employees in general, 34 % (28 %) in small enterprises with 10 to 49 employees, 25,9 % (38,8 %) in medium sized enterprises with 50 to 249 employees and 13,4 % (6,9 %) in large enterprises with more than 250 employees (see figure 7) (HARDER in KIRSCHNER *et al.* 2008).

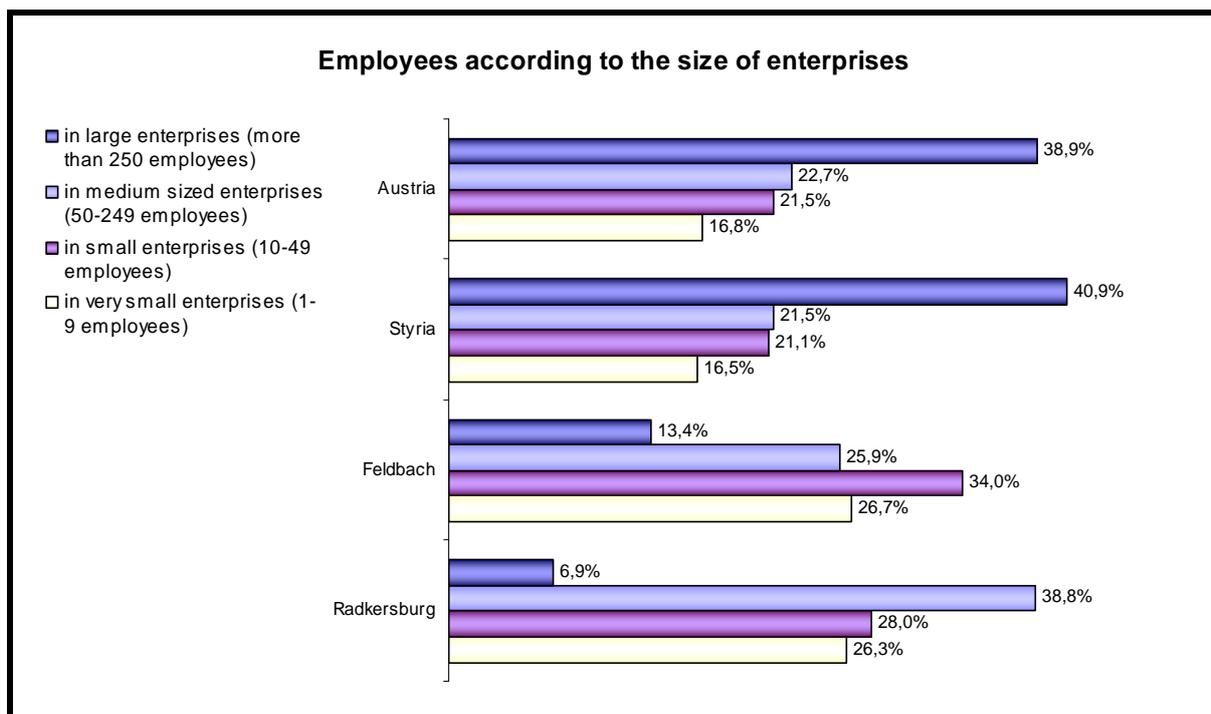


Figure 7: Employees according to the size of enterprises (Data Source: WIBIS Steiermark 2008).

Comparing these numbers with whole Austria (Styria), only 16,8 % (16,5 %) of the employees are employed in very small enterprises, whereas 38,9 % (40,9 %) are working in large firms (figure 7) (WIBIS STEIERMARK 2008). According to this numbers, (very) small and medium sized enterprises (SMEs) within the Styrian Vulkanland are much more relevant concerning employment than large regional firms. Unlike the situation within the Vulkanland, large enterprises are relatively more important concerning employment within Austria and Styria (HARDER in KIRSCHNER *et al.* 2008).

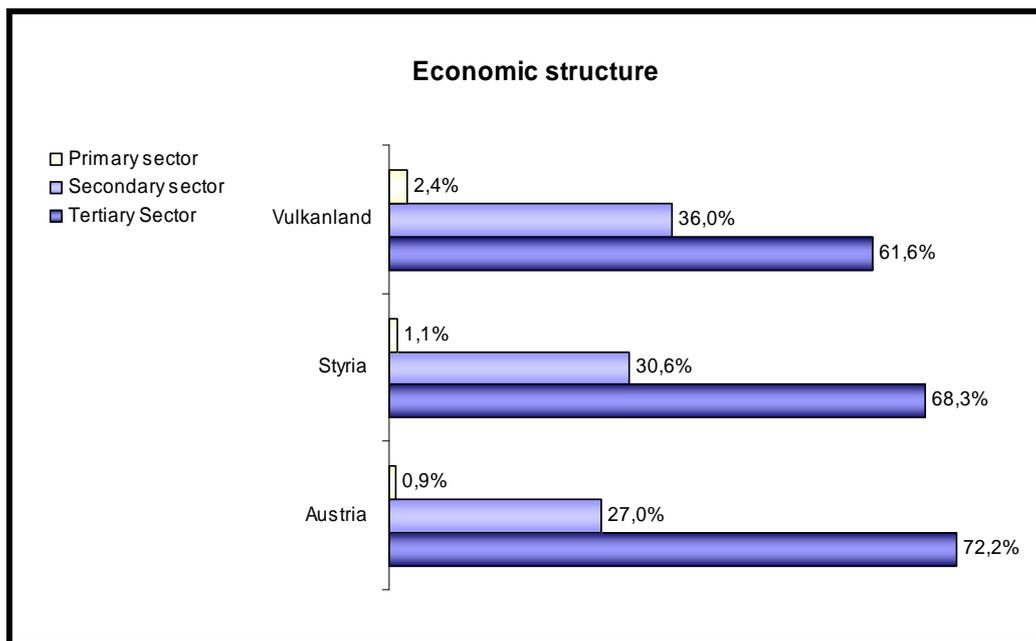


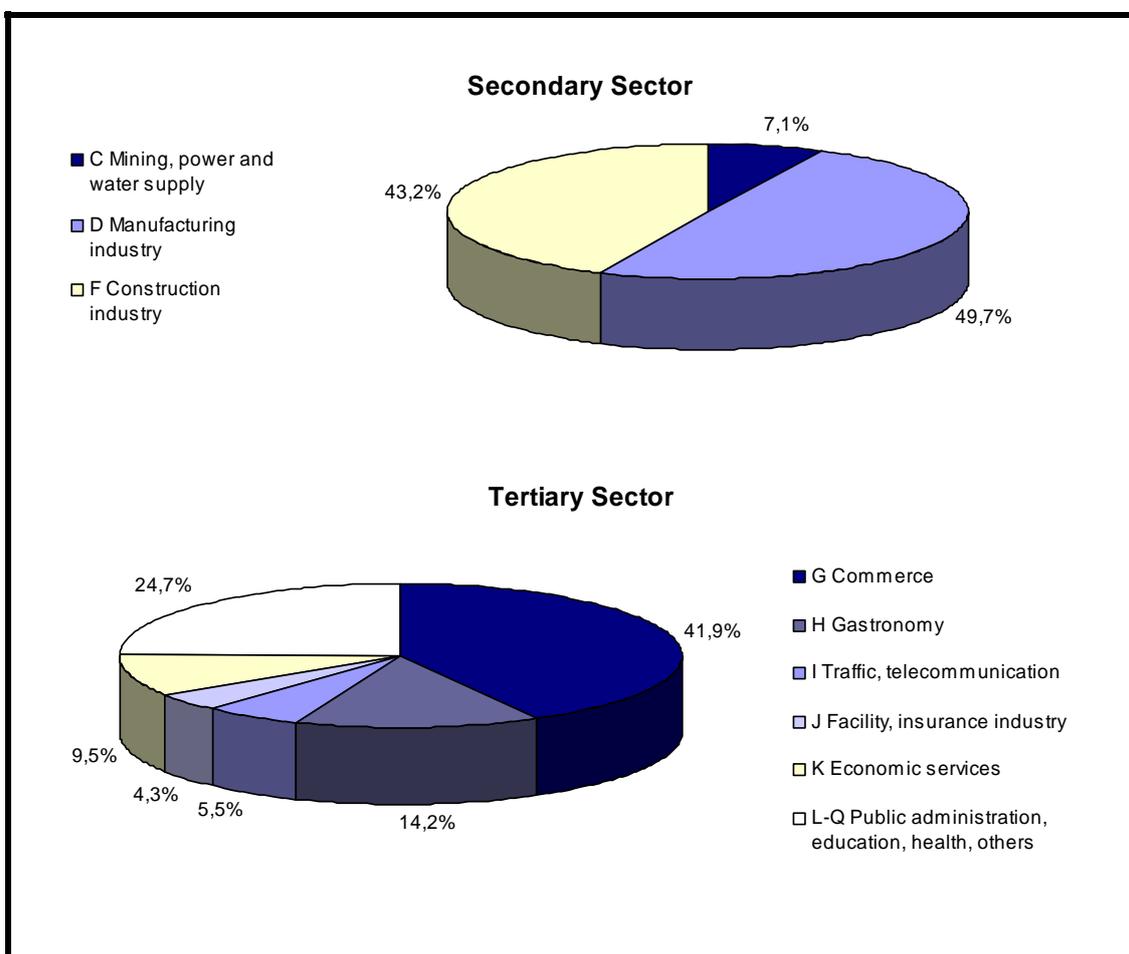
Figure 8: Economic structure: comparing the share of total employees within Austria, Styria and the Vulkanland (Source Data: WIBIS Steiermark 2008).

The economic structure⁵ of the Styrian Vulkanland, however, strongly resembles the Styrian average. About 2,4 % of the employed population are working within the primary, 36 % within the secondary and 61,6 % in the tertiary sector (see figure 8). Although the tertiary sector dominates the secondary sector concerning the percentage of employees, these numbers are slightly different to the Austrian (Styrian) average: 0,9 % (1,1 %) of the employed population are working in the primary, 27 % (30,6 %) in the secondary and 72,2 % (68,3 %) in the tertiary sector (WIBIS STEIERMARK 2008). According to the economic structure, the Styrian Vulkanland not really resembles a typical rural area that is usually accused of being

⁵ For the representation of the economic structure of the Vulkanland data of the year 2006 is used, available in WIBIS Steiermark 2008.

dominated by agrarian activities. Although the share of the primary sector is higher than the Austrian average, the difference only accounts to 1,5 % (HARDER in KIRSCHNER *et al.* 2008).

As far as the secondary sector is concerned, the major enterprises in the Bezirk Feldbach (Radkersburg) are found within the manufacturing industry with 51,2 % (45,2 %) and the building industry with 43,8 % (41,6 %) of the labour employed within the secondary sector. Looking more closely at Feldbach's (Radkersburg's) manufacturing industry, most firms operate in the food processing industry with 36,3 % of the people employed in manufacturing. In the tertiary sector, commerce is dominant with 41,9 % of all employees working in the tertiary sector within the Styrian Vulkanland (figure 9) (HARDER in KIRSCHNER *et al.* 2008).



*Figure 9: Composition of the secondary and tertiary sector within the Vulkanland according to the share of employees (Source: KIRSCHNER *et al.* 2008, pg. 27).*

Concerning the average annual development of the economic structure of Feldbach (Radkersburg) during the period of 2002 to 2006, the percentaged increase of the employed population amounted to 2,7 % (0,4 %) in the secondary sector and to 0,9 % (2,7 %) in the tertiary sector. The development in the Vulkanland therefore slightly differs from the one in

whole Austria where the number of employees decreased in the secondary by 0,8 % and increased within the tertiary sector by 1,5 % (HARDER in KIRSCHNER *et al.* 2008).

3.2.4 Economic power and infrastructure

In 2006 the median of the gross income in both regions - Feldbach with a gross median income⁶ of 1.696 Euros and Radkersburg with 1.769 Euros - was less than the median of the Austrian and Styrian gross income of 2.057 and 2.031 Euros respectively. Unlike the differences concerning the absolute value of the gross median income, its relative annual increase of 2,7 % in Feldbach and 2,5 % in Radkersburg slightly exceeded the Styrian and Austrian gross median income's growth rate of 2,1 % and 2 % respectively (compare figure 10) (HARDER in KIRSCHNER *et al.* 2008; WIBIS STEIERMARK 2008).

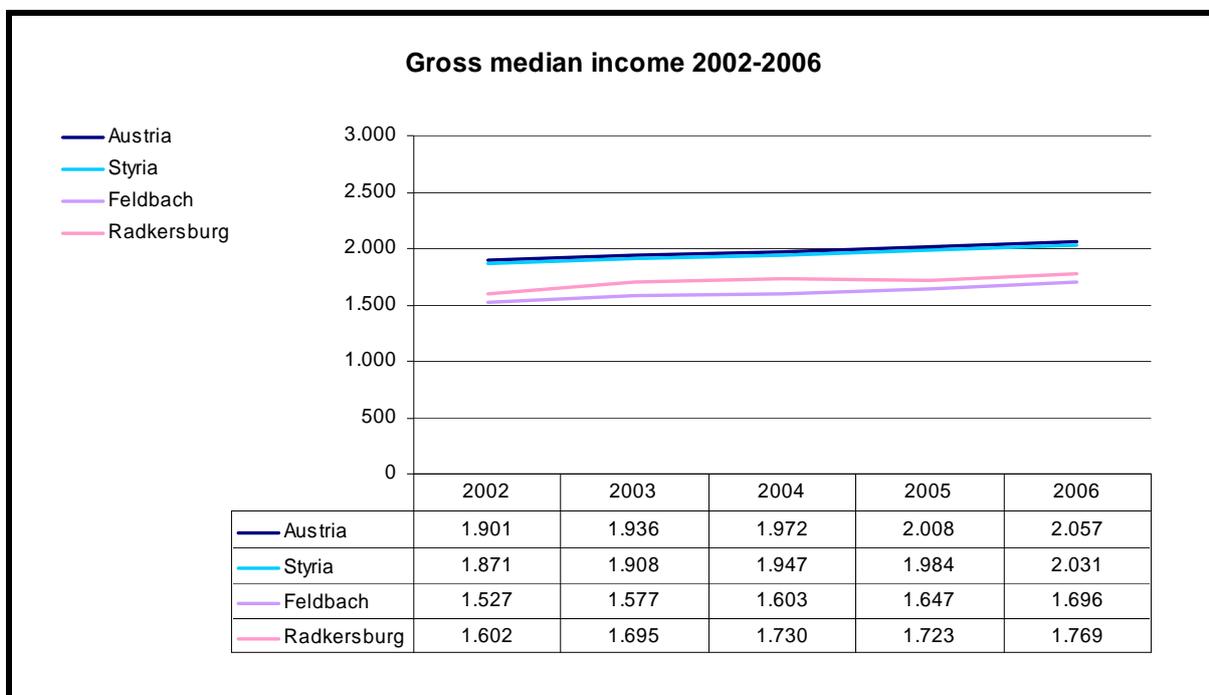


Figure 10: Gross median income 2002-2006 (Data Source: WIBIS Steiermark 2008).

Despite the positive annual development of the Vulkanland's gross median income, the fiscal power per head is with 718 Euros in the Bezirk Feldbach and 753 Euros in the Bezirk Radkersburg lower than within whole Styria or Austria, exhibiting a fiscal power of 911 and 1.293 Euros per head. Although the Vulkanland's fiscal power per head amounts just about to 57 % of the Austrian one, it increased by a much higher rate: an annual development of 1,6 %

⁶ For a definition see Annex 3: Definitions and Classifications.

(Bezirk Feldbach) and 2,1 % (Bezirk Radkersburg) versus an increase of only 0,6 % in whole Austria (WIBIS STEIERMARK 2008). Within this respect, the Styrian Vulkanland exhibits a small tendency to catch-up with the rest of Styria.

However, having a final look at the infrastructure one needs to address the problem of transport connection. The Styrian Vulkanland, at least within this respect, resembles a remote area, putting pressure on the economic and ecological situation. Inhabitants living within the Vulkanland need on average between 20 to 45 minutes to reach the main highways A2 (connecting Graz and Vienna) and A9 (connecting Graz and Slovenia). Those who are solely relying on public means of transportation take at least 50 minutes in order to reach Styria's capital city Graz (FEND AND KROTSCHECK 2004). The weak transport connection and the insufficient supply of public means of transportation not just result in a dependency upon cars, but may also harm the regional economic situation (HARDER in KIRSCHNER *et al.* 2008).

3.3 The Regional development strategy of the Styrian Vulkanland

In face of the economic, demographic and infrastructural problems rural areas have to deal with, the association of the Styrian Vulkanland designed a development strategy in order to transform a remote area characterized by a weak economic activity, a strong agrarian sector and the migration of labour, into an emerging, innovative region. The regional development strategy is endogenous based on strengthening regional core competences. The Styrian Vulkanland therefore decided to promote regional enterprises and their innovative capacity or, recalling figure 3, to enhance the basis of the 'innovation pyramid' instead of attracting external, technological leaders to the region (so to speak broadening the 'peak of innovation') which would correspond to an exogenous rather to an endogenous regional development strategy (HARDER in KIRSCHNER *et al.* 2008; KROTSCHECK *et al.* 2007a).

In course of the endogenous regional development strategy, the Styrian Vulkanland tries to encourage holistic processes in place of so called 'lighthouse models' which support major projects and the settlement of large, international firms. The Styrian Vulkanland, in fact, aims to create an innovative milieu by spurring the regional collaboration of municipalities and enterprises without raking enviousness and jealousy. Moreover, the 'Association for the Promotion of the Styrian Vulkanland' regards regional development as transformative. The regional transformation process is not simply based on single large-scale projects or technologies, but on innovation as well as on the valorisation of existing resources and the regional production. Within this context, the creation of a regional image and identity are as

important as the promotion of regional self-confidence as well as raising the awareness for the innovative potential of regional producers (KROTSCHECK *et al.* 2007a).

Fundamental for the development strategy of the Styrian Vulkanland is, however, the long-term pursuance of common regional themes. In sum, there are eight areas of interest the Styrian Vulkanland concentrates on. These are innovative supply and product development, arts and culture, cultural landscape, education, infrastructure, women, youth and social welfare (LENZ *et al.* 2005).

3.3.1 Organisational structure and the ‘Association for the Promotion of the Styrian Vulkanland’

The implementation of the innovative and holistic regional development strategy requires, however, a specific organisational structure in order to be pursued efficiently. The supporting organisation comprises the creation of certain structural pre-requisites, the specification of a package of measures, the concentration on major aims of the endogenous regional development strategy and the commitment to common rules and agreements (LENZ *et al.* 2005). In course of the formation of the Styrian Vulkanland, the ‘Association for the Promotion of the Styrian Vulkanland’ (the ‘Verein zur Förderung des Steirischen Vulkanlandes’) was founded. This association is not just one major authority concerning the endogenous regional development strategy, but also coordinates and directs the collaboration of the various municipalities involved (HARDER in KIRSCHNER *et al.* 2008; KROTSCHECK *et al.* 2007a).

3.3.1.1 Structural levels

The implementation of the regional development strategy of the Styrian Vulkanland is organised by two main structural levels:

1. The executive committee of the ‘Association for the Promotion of the Styrian Vulkanland’;
2. The LAG-Management accounting for the coordination of local working groups (HARDER in KIRSCHNER *et al.* 2008).

3.3.1.1.1 The ‘Association for the Promotion of the Styrian Vulkanland’

The association or more precisely the association’s executive committee, comprising in total 26 members (13 practitioners and 13 politicians – see figure 11, pg. 39), is in this context the superordinate control system responsible for the regional development, control and

communication process. The executive committee bases its operating procedures on several goals of the regional development strategy. These include improvements within the agricultural sector (concerning the structure of agrarian firms, the introduction of new technologies, a better marketing of agricultural products and the promotion of a sustainable as well as ecological agriculture in general), the maintenance and fortification of the existing social structure as well as the creation of additional jobs within the region. Moreover, the executive committee concentrates on the improvement of working and living conditions of the regional labour force and population respectively as well as on the equalization of opportunities of men and women (LENZ *et al.* 2005).

The executive committee's actionability requires, however, traceable internal rules of procedure and regulations. The executive committee can be regarded as the major platform concerning the development of the regional strategy as well as of common actions and measures within the Styrian Vulkanland. It is not just responsible for the adjustment of projects to the regional development strategy, but also for the harmonization of the regional development with supra-regional guidelines. In addition, the executive committee decides which projects are worth to be supported ideally and financially and thereby tries to guarantee a certain quality. The decision for a specific project as well as the thematic focus is based on the existing regional potential. The factors of influence are therefore the promotion of strengths, the exploitation of given prospects, the compensation of regional weaknesses and the minimization of risks. Thus, the Styrian Vulkanland aims to extend its core competences and attain a long-term positioning. The financial fundament for the achievement of these ambitious aims rests upon membership fees of club members (LENZ *et al.* 2005).

The 'Association for the Promotion of the Styrian Vulkanland', in general, has the duty to implement the major regional goals accounting for the guiding principles and subject areas of the Community Initiative of the European Union. The function of the association is therefore to encourage the Styrian Vulkanland within its development towards an independent and prosperous region, strongly relying on the principle of sustainability and the existence of a common regional brand as well as identity. Although the executive committee is the superordinate control system as far as the endogenous regional development strategy is regarded, the association comprises three further institutions (see figure 11, pg. 39). These are the advisory council, eight 'Factories for Future Development' ('Zukunftswerkstätten' or ZKW) responsible for the development of major regional projects and a jury consisting of selected citizens (HARDER in KIRSCHNER *et al.* 2008; LENZ *et al.* 2005).

The advisory council (EVKO) is accountable for the evaluation of strategies, programs and processes. This institution accompanies and supervises the implementation of regional measures as well as initiatives and advises the executive committee in form of annual reports (LENZ *et al.* 2005). The advisory council, in fact, is an essential part of the regional knowledge management system. It assures the documentation of the regional development process and analyses the effects of implemented projects. The EVKO provides a long-term orientation for the development of the Styrian Vulkanland and enables regional actors to solve problems more efficiently (KROTSCHKEK *et al.* 2007b). The regional knowledge management system and the advisory council respectively guarantee the following aspects:

- The setup of a communication infrastructure;
- The storage and enlargement of regional knowledge;
- The visualization of implicit knowledge and the prevention of double tracked activities;
- A simplified regulation of the regional development;
- A gain in experiences and regional learning (KROTSCHKEK *et al.* 2007a).

The EVKO and the regional knowledge system therefore aspire to create a learning region and to achieve regional networking among local actors spurring creativity and innovative activities.

The eight 'Factories for Future Development' (ZWK) which constitute the third institution of the association, are responsible for the preparation of rough concepts for future projects, the organisation of the project development as well as for the negotiation and communication platform. The decision-making within the ZWK is an apertured process, enabling motivated and dedicated inhabitants to participate actively in the process of regional development. Every local inhabitant of the Styrian Vulkanland can make use of this possibility in form of quarterly workshops which take place within different municipalities. These workshops are coordinated by members of the executive committee who support participants in bundling and realizing their ideas. The complied concepts for future projects are ranked according to their regional importance as well as their relevance within the development process and are then presented to the executive committee for a final assessment. The propound projects have to be conform to the development plan of the Styrian Vulkanland and have to contain a precise aim as well as to submit a financial proposal. The development of major projects is incumbent on

the participants of the respective ZKW. Developed projects are then applied via the LEADER plus program⁷ (LENZ *et al.* 2005).

The association's final important institution is a jury which consists of selected citizens. This jury can be convoked in case of conflicts and disagreements within the association. The recommendation of the jury is by all means obligatory for the executive committee (LENZ *et al.* 2005).

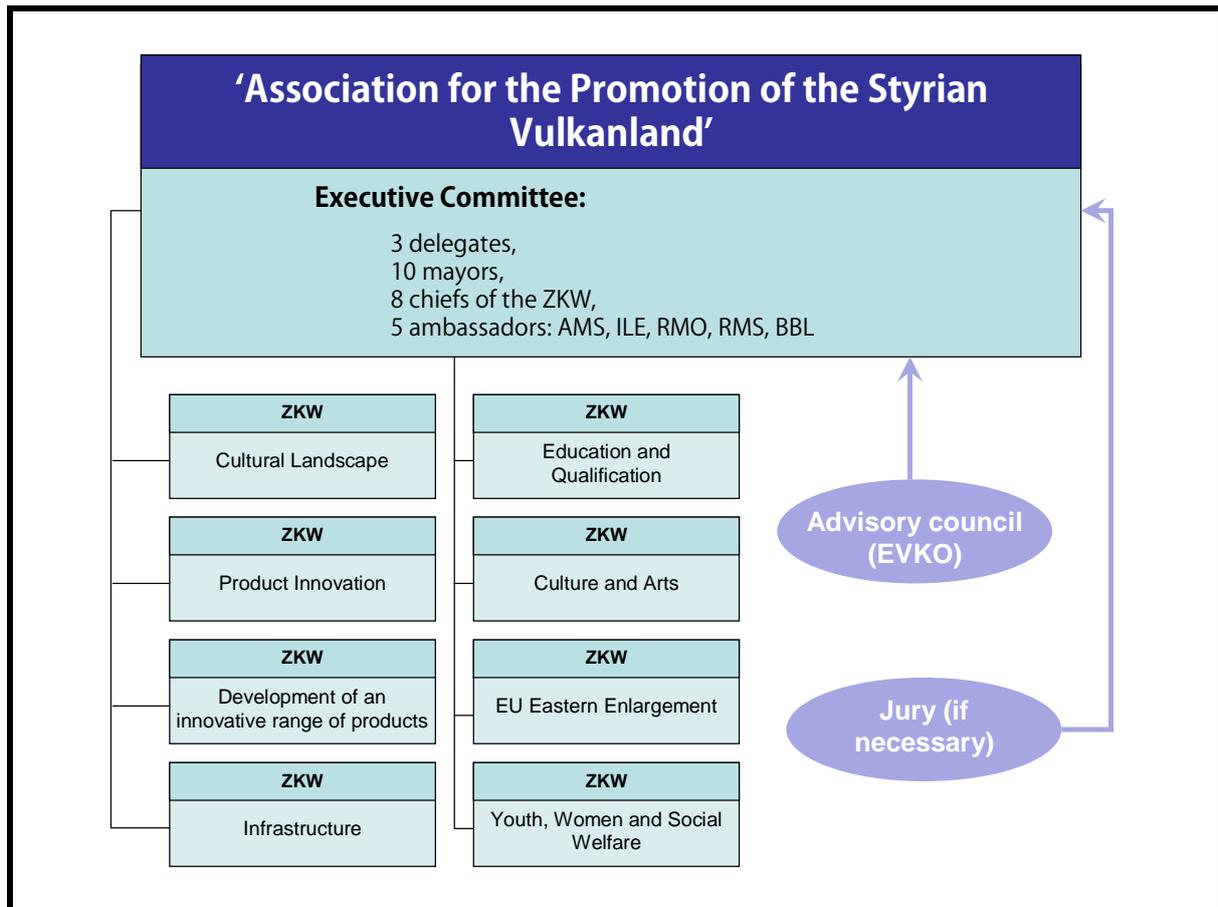


Figure 11: Organigram of the 'Association for the Promotion of the Styrian Vulkanland' (Source: KIRSCHNER *et. al* 2008, pg. 28; based on LENZ *et al.* 2005, pg. 70).

3.3.1.1.2 The LAG-Management

In contrast to the executive committee of the 'Association for the Promotion of the Styrian Vulkanland' which is mainly responsible for the strategic process regulation, the LAG-Management is in charge of the coordination of processes within the association. Its function comprises not just internal activities (i.e. archival storage or logging), but also marketing,

⁷ For further information concerning the LEADER+ program see Annex 3: Definitions and Classifications.

public relations and budgeting. The LAG-Management is the major contact partner within the whole network of local actors, coordinating the co-operation with other LEADER groups as well as with the Austrian and European Network. The management, in general, assures the correct documentation of decisions and processes, guaranteeing an unobstructed holistic regional development (LENZ *et al.* 2005).

3.3.1.2 Civil participation

As apparent within the idea of the ‘Factories for Future Development’, the organisational structure as well as the endogenous regional development strategy of the Styrian Vulkanland is strongly based upon a broad civil participation. One major concern of the Styrian Vulkanland was to integrate the local population actively and passively into the regional development by encouraging them to partake in the transformation of a rural area into a prosperous and emerging region. The Styrian Vulkanland therefore created several instruments such as specific workshops, excursions, ideas competition, presentations or, as mentioned before, the eight ‘Factories for Future Development’. The Vulkanland also strongly relies upon passive measures such as marketing (the creation of a common regional brand) and public relations in order to motivate regional inhabitants to incur a certain degree of individual responsibility within the restructuring process. By involving citizens in the holistic process of regional development, the Vulkanland mainly aspires to increase the awareness of the regional potential and beauty among the local population (KROTSCHECK *et al.* 2007a).

3.3.2 The economic offensive of the Styrian Vulkanland

Central for the development strategy of the Styrian Vulkanland is, however, a long-term economic offensive. The idea of a common economic policy first originated within the years 2002 and 2003 respectively. Since most municipalities within rural areas do not pursue an own economic policy, the Styrian Vulkanland encouraged the development of a reasonable economic offensive (HARDER in KIRSCHNER *et al.* 2008). The economic offensive’s central goals are

- to create an economic milieu characterized by good and trust-based relationships between enterprises and municipalities;
- to support the foundation of new enterprises and innovative activities;
- to provide a partial payment for the utilisation of consulting services in course of the development of projects and the foundation of an enterprise;

- to promote common activities among local actors; and
- to back financially the further education of employees and managers (KROTSCHECK *et al.* 2007a).

In order to strengthen the regional potential and to encourage a prospering economy, the promotion of the innovative capacity of local firms seems to be indispensable for an efficient regional policy. As a common encouragement of innovative activities within the Styrian Vulkanland is essential for transforming a former peripheral region characterized by a weak economic activity into an innovative milieu (LENZ *et al.* 2005), the executive committee of the ‘Association for the Promotion of the Styrian Vulkanland’ decided to establish an ‘innovation budget’ on level of each municipality. The ‘innovation budget’ aims to provide financial aid to innovating enterprises or start-up entrepreneurs who participate in innovative projects or groups (KROTSCHECK *et al.* 2007a). For the purpose of augmenting the firms’ potential for further development – especially in the area of innovation – the package of measures comprises the following initiatives:

- The promotion of the development of new products and technologies;
- The formation of a regional research centre within the food processing industry;
- The support for the creation of clusters and networks within the areas of telecommunication, energy, environment, logistics, health and construction;
- An increased encouragement of innovative activities;
- A better co-operation between scientific institutions and economic actors, especially concentrating on small and medium sized enterprises (FEND AND KROTSCHECK 2005).

Besides the ‘innovation budget’, the Styrian Vulkanland initiated an annual competition called the ‘innovation award’ rewarding the most promising regional innovations. The ‘innovation award’ is not just a good incentive for regional actors to pursue innovative activities and an ideal opportunity to exchange information with like-minded people, but also an alternative way to discover hidden regional potential. In addition to the regional pull created by this annual competition, it indirectly reinforces regional networking and encourages the initiation of new projects (KROTSCHECK *et al.* 2007a).

3.3.2.1 Three major core competences

Strongly relying on the promotion of the firms’ innovative potential and on creating a positive attitude towards innovation in general, the regional development strategy also aims to strengthen three core competences of the Styrian Vulkanland. These are quality food,

handcrafts and health and tourism. The three core competences are integrated within the major economic offensive which emphasizes the regional strengths under the headings ‘Culinary region’, ‘Handcraft region’ and ‘Region of vital force’ (HARDER in KIRSCHNER *et al.* 2008). The specification of these three competences required much work and several discussions. The ‘Association for the Promotion of the Styrian Vulkanland’, finally, decided to choose issues which not just guarantee a sustainable regional development, but are also able to assure a high quality of life and prosperity. According to the share of total employees and the regional value added, handcraft seems to be the most important core competence, closely followed by quality food and tourism (compare to figure 8 and 9) (KROTSCHHECK *et al.* 2007a).

Although the Vulkanland advanced tourism and health significantly during the last few years, the present case study focuses exclusively on enterprises operating within the first two areas of competence – quality food and handcraft. As the promotion of these two strengths seems to be of great importance in spurring the consumption of regional products and the development of a product-based tourism, the ‘Handcraft region’ and the ‘Culinary region’ will be presented in more detail in the following section.

3.3.2.1.1 Handcraft region

Handcraft, in general, is a regional core competence with a long tradition within the Styrian Vulkanland. The ‘Handcraft region’ not just tries to bring this regional competence to perfection, but also aims to create a Europe-wide reputation concerning quality, durability and design. Aesthetics and individual solutions for costumers combined with a range of functions as well as the processing of regional raw materials are guiding principles within the ‘Handcraft region’. The support of regional co-operations and the development of networks within this area of competence are as important as to promote innovation as well as R&D. Incentives, such as the ‘innovation award’ or the ‘innovation budget’ in each municipality, are trying to improve the attitude towards innovation (HARDER in KIRSCHNER *et al.* 2008).

The handcraft region comprises several enterprises operating in the area of textile and clothing [ÖNACE 13/14], wood processing [ÖNACE 16], furniture [ÖNACE 31], steel construction [ÖNACE 25], stone processing [ÖNACE 23], water supply [ÖNACE 36], energy

consulting [ÖNACE 62] and construction [ÖNACE 41/42]⁸ (STYRIAN VULKANLAND 2008; STATISTIK AUSTRIA 2008). The further development of handcrafts within the Vulkanland is, however, in its beginnings as regional attention has just switched recently towards this traditional core competence. With the priority on handcrafts, the Vulkanland is aiming to increase the production of high quality products which should provide the basis for a product-based tourism in future (FEND AND KROTSCHECK 2005).

3.3.2.1.2 Culinary region

A diverse, quality-based agriculture and food production within the Styrian Vulkanland are particularly favoured by an abundant supply of natural resources. Strongly focusing on the development of a common regional brand as well as on the construction of local networks and co-operations concerning process and product innovation, local producers within the food industry [ÖNACE 10/11] and gastronomy [ÖNACE 55/56]⁹ are trying to provide groceries extraordinary in terms of quality and composition (KROTSCHECK *et al.* 2007b). The Styrian Vulkanland seeks to promote with the ‘Culinary region’ authentic products by making quality a top priority. Quantity or large-scale production in particular, is not aspired. Large-scale production, in fact, conflicts with the regional development plan which aims to strengthen local small and medium sized enterprises as well as a sustainable and ecological agriculture based on regional norms and values (HARDER in KIRSCHNER *et al.* 2008).

Due to the emerging, positive and self-sustaining dynamics within the field of quality food, the ‘Culinary region’ is no longer the focal point of the endogenous regional development strategy of the Styrian Vulkanland as this core competence has received much attention during the last few years. As mentioned before, the need for further development especially arises within the ‘Handcraft region’ which is just in its beginnings (HARDER in KIRSCHNER *et al.* 2008).

3.3.3 Marketing strategy

Additional to the encouragement of the economic activity within the regional core competences, the development plan of the Styrian Vulkanland comprises an innovative marketing strategy. This comprehensive marketing strategy serves for changing the region’s

⁸ The economic classification of the industries present within the ‘Handcraft region’ is based on the national classification ÖNACE 2008 (for further information see Annex 3: Definitions and Classifications).

⁹ The classification is based on ÖNACE 2008 (see Annex 3: Definitions and Classifications).

former image. Before the municipalities' co-operation started, the Bezirk Feldbach and Radkersburg received little to no attention and were mainly characterized by a low economic activity as well as the migration of human resources. The design of a common marketing strategy combined with the creation of a regional brand 'Styrian Vulkanland' aspires to change the regional image within and outside the Vulkanland. The idea of the development of a regional brand, however, not just resulted from the wish of a more positive perception of the region itself, but also from the decision of a regional process orientation instead of a project orientation. For realising the process-oriented development plan, the association of the Styrian Vulkanland regarded the establishment of an independent region marked by a clear and ascertainable identity as indispensable. The creation of a successful brand which is not only accepted by the local population, but also eases the marketing work for regional enterprises, is, in fact, dependent on certain parameters. According to KROTSCHKEK *et al.* (2007a), an effective brand is characterized by the following five criteria:

1. The creation of a 'sense of belonging' and identification;
2. Orientation by providing a thematic fortification of the brand;
3. Trust in the regional development strategy;
4. Competence concerning the belief in the regional economic potential for further development;
5. The creation of a positive regional image by transforming a former peripheral area into a liveable, innovative region (HARDER in KIRSCHNER *et al.* 2008).

In course of the regional marketing strategy, different integrative projects have led during the last few years to an increased identification of the local population and entrepreneurship with the regional development plan and the activities of the 'Association for the Promotion of the Styrian Vulkanland'. The establishment of a common brand and marketing strategy therefore plays a key role in the regional transformation process and the commercialization of the three regional core competences handcraft, quality food and health and tourism. The regional marketing, however, does not solely address outsiders, but also local firms and inhabitants in course of the creation of a "Regional corporate Identity" (LENZ *et al.* 2005, pg. 78). As "regional actors can not be forced to commit themselves to the RCI" (*ibid.*, own translation) the regional marketing strategy has to transmit a range of norms and values regional actors identify with. The reference to a regional value base is, indeed, an important factor as far as the participation within the development of a RCI is concerned (LENZ *et al.* 2005).

Besides the importance of the umbrella brand ‘Styrian Vulkanland’¹⁰ within the creation of a ‘Regional corporate Identity’ and the modification of the region’s image, the marketing strategy aims to solidarize local actors with the Styrian Vulkanland itself as well as with its products and services. A regional basis of trust and loyalty should be build up among regional inhabitants in order to communicate a coherent image to the outside world. The regional marketing is therefore central for the regional development plan (see figure 12). The regional marketing strategy not just tries to commercialize regional products and the three major core competences of the Styrian Vulkanland, but also supports the continuation of the holistic transformation process (LENZ *et al.* 2005).

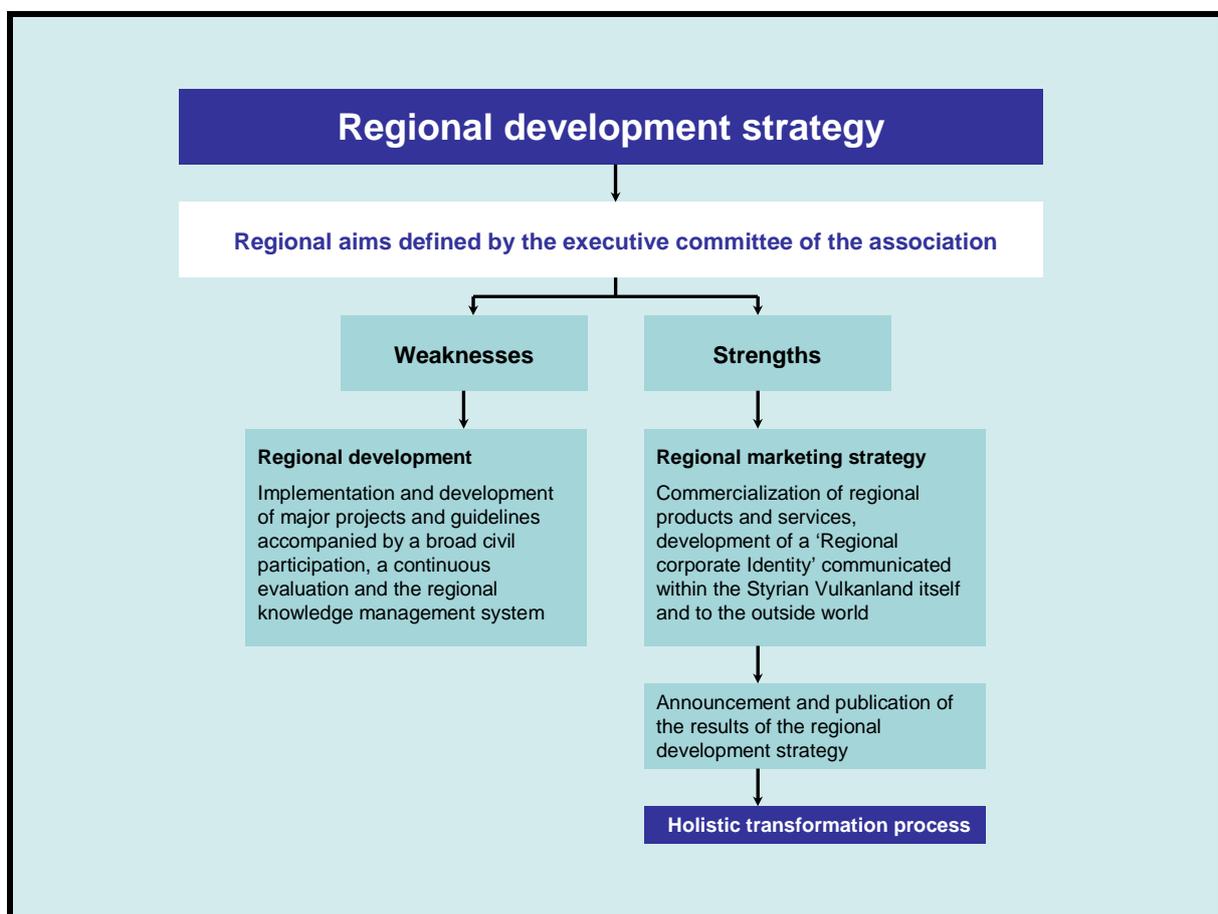


Figure 12: The role of the regional marketing strategy within the regional development plan (Source: LENZ *et al.* 2005, pg. 46, translated).

¹⁰ The denotation ‘Styrian Vulkanland’ is the umbrella brand of the region under consideration. Within the Vulkanland there exist several sub-brands (such as ‘Eruption’ among a group regional vine producers) that tie in with the idea of the umbrella brand ‘Styrian Vulkanland’ (LENZ *et al.* 2005).

3.3.4 The innovativeness of the Vulkanland's regional development strategy

The innovativeness of the Styrian Vulkanland's development plan lies within the implementation of a holistic, endogenous regional development strategy as well as the introduction of a common regional brand new to the region and facilitating the commercialisation of products of regional firms. The Vulkanland's development strategy is, however, not only a regional innovation in marketing and organisation trying to guarantee an effective regional transformation process across the 77 member municipalities, but it also aims to develop regional strengths and to promote the potential of regional producers operating within the three local core competences. According to LENZ *et al.* 2005, the Styrian Vulkanland thereby especially aspires to spur competition as far as ideas for further regional development projects are concerned and tries to establish as well as to ease the regional co-operation across different sectors. As the creation of stable co-operations among local actors requires a basis of trust, the Styrian Vulkanland not just aims to increase the awareness across the local population for the regional potential of local producers (in order to achieve a regional change in attitude towards the implementation of common projects and innovation in general), but also provides various occasion where local actors, public and private respectively, have the possibility to get in contact with each other. All measures taken by the Styrian Vulkanland have the objective to allocate regional resources more efficiently and to transform a rural area in a successful, up-coming and liveable region providing future opportunities for local inhabitants and firms (FEND AND KROTSCHECK 2004; LENZ *et al.* 2005; FEND AND KROTSCHECK 2005; KROTSCHECK *et al.* 2007a; KROTSCHECK *et al.* 2007b).

Recalling finally the pre-conditions for the creation of an innovative milieu, the Styrian Vulkanland provides with its a development plan a firm footing for the fulfilment of at least two of them: *i*) the mere spatial proximity of various actors ranging from regional inhabitants and firms to local political institutions, as well as *ii*) the creation of a regional image and a 'sense of belonging'. The Styrian Vulkanland's development strategy, in fact, established during the last few years a coherent unit comprising several regional actors coming from different types of organisations who are directed towards a common direction via the creation of an internal as well as external regional image. The existence of a common cultural background as well as of a certain degree of institutional proximity (denoting shared rules, norms and values) not just positively affect regional learning and innovation, but also play a unifying role within the harmonization of the different interest of local actors, the creation of a 'sense of belonging' and as a consequence within the establishment of an innovative milieu.

4 EMPIRICAL RESULTS ON THE CASE STUDY AREA

4.1 Data collection

The research method used for the data collection on innovation within the Styrian Vulkanland mainly relies on semi-structured interviews conducted within the case study area. The survey within the Styrian Vulkanland comprises in total eleven interviews carried out with firms operating in the ‘Culinary region’ or the ‘Handcraft region’.¹¹ Enterprises within the third core competence of the Vulkanland – the ‘Region of vital force’ – were not part case study. The interviewees interrogated in course of the survey were mainly CEOs or managers of local firms and/or agencies. The interviews were conducted personally with face-to-face contacts with the interviewees. Although personal interviews may have certain disadvantages such as a lack of anonymity or the so called ‘interviewer bias’ which denotes the influences of the interviewer’s characteristics and interview techniques on the respondents’ answers (FRANKFORT-NACHMIAS AND NACHMIAS 2000), this method of data collection is in some respect advantageous (see table 1).

Table 2: Personal Interviews - Advantages and Disadvantages

<i>ADVANTAGES</i>	<i>DISADVANTAGES</i>
<i>Flexibility</i>	<i>Higher implementation costs</i>
<i>Greater control of the interview situation</i>	<i>Interviewer bias</i>
<i>High response rate</i>	<i>Lack of anonymity</i>
<i>Supplementary information</i>	

Source: FRANKFORT-NACHMIAS AND NACHMIAS 2000, pg. 219.

In combination with a semi-structured interview guideline, personal interviews allow for great flexibility within the questioning process, facilitating the probing¹² for supplementary

¹¹ The interviewed firms (4 firms in the ‘Handcraft region’, 7 in the ‘Culinary region’) can be characterized as small and medium sized enterprises (SMEs) typical to the region under consideration.

¹² Using the definition of the SURVEY RESEARCH CENTER, probing can be understood as “*the technique used by the interviewer to stimulate discussion and obtain more information. A question has been asked and an answer given. For any number of reasons, the answer may be inadequate and require the interviewer to seek more information to meet the survey objectives. Probing is the act of getting this additional information* (SURVEY RESEARCH CENTER, Interviewer’s Manual, pg. 5-1 cited according to FRANKFORT-NACHMIAS AND NACHMIAS 2000, pg. 221).

information and/or details. Moreover, personal interviews often result in higher response rates than, for instance, impersonal mail interviews do. In addition, this methodology also allows the interviewer to exert greater control over the interviewing situation and to interpret answers more accurately which can be of importance for the representation of final results (FRANKFORT-NACHMIAS AND NACHMIAS 2000).

4.1.1 Interview guideline: rational and main indicators

The interview guideline for the interviews conducted within the Styrian Vulkanland not just considered the elements necessary for the creation of an innovative milieu, but also focused on the attitude towards innovation (the phase prior to the actual innovative process) of the interrogated firms. As the location of an enterprise exhibits substantial influence on this attitude, several factors additional to the firm's individual innovativeness have to be taken into account in order to obtain an accurate picture of the interviewed firms and consequently of the region under consideration. These factors of influence can either be internal (i.e. the cost of undertaking R&D, a firm's openness to trade, the firm's size, others) or external (i.e. the location) to the firm (CORONADO *et al.* 2008; KIRSCHNER *et al.* 2008). Due to the impact of these internal and external factors the interview guideline was structured the following:

1. General information,
2. Co-operation partner,
3. Knowledge sources,
4. Labour force,
5. Competitiveness and
6. Location (compare to KIRSCHNER *et al.* 2008 and see also Annex 2).

4.1.1.1 Rational

The introductory section 'general information' comprises mainly questions about the reference numbers of the interrogated firms which are for instance the transaction volume, the number of employees, the range of products and markets outside the Styrian Vulkanland (export share). The objective of this section is to identify the enterprises' size and their main markets as well as their development over the past five years (KIRSCHNER *et al.* 2008).

The second part of the interview guideline (*ibid.*) constitutes questions about the co-operation partners of the interviewed firms (along the regional production chain of value added, with educational or training institutions and others) in order to investigate the amplitude of their networking activities and their position within the regional network. Within this respect, it is

not just important to obtain information about the different kinds of interactions between the co-operation partners (i.e. collective innovative activities or the creation of common products), but also about the interactions' frequency and whether the collaboration between enterprises as well as of enterprises and educational institutions is locally restricted or reaches beyond the region's borders. The objective of this section of the questionnaire is to attain an accurate picture of the co-operative profile of each single firm and whether this is influenced by common projects and events initiated by the Styrian Vulkanland. Co-operations may play a key role within innovative activities, especially in the case of small firms which may tend to innovate in co-operation with other enterprises due to their restricted internal capacities.

A further important factor within a firm's innovative process is the generation of new knowledge. Therefore the third section tries to figure out the potential sources of knowledge used by each interrogated enterprise and whether the Styrian Vulkanland provides know-how useful within innovative activities. As far as the acquisition of knowledge is regarded, the aim is to identify how firms get access to new information or to the latest technology and if they use internal sources of knowledge such as employees. Within several research papers (BRESCHI AND LISSONI 2000; CAPELLO 199, LONGHI 1999) skilled labour is regarded as potential source for new information and may be crucial within the pursuance of innovative activities. Thus, it is necessary to know whether the interrogated firms motivate their employees to participate within the generation and exchange of knowledge or if they are more likely to "*generate knowledge in collaboration with other enterprises, institutions and/or costumers*" (KIRSCHNER *et al.* 2008, pg. 14).

Apart from the latest technology, skilled labour force is, as mentioned before, an indispensable ingredient within the pursuance of innovative activities. The fourth part 'labour force' therefore aspires to attain information about where educated employees are acquired from (i.e. regional training or educational institutions) and whether these live within the region or accrue from outside the Styrian Vulkanland. Regarding the competition for educated employees, it is also important identify what firms do to resurrect skilled labour (KIRSCHNER *et al.* 2008).

The fifth part deals with the competitiveness of the interviewed firms. Due to the importance of innovative activities for maintaining or realizing a certain degree of competitiveness, it is crucial to figure out which measures the interrogated enterprises undertake and which future plans they have concerning the entry on new, external markets. Furthermore, it should be ascertained which characteristics of the interrogated firm differentiate it from its competitors

and how much internal resources are spent on increasing the existing stock of knowledge (KIRSCHNER *et al.* 2008). Finally, this section of the questionnaire aims to determine the influence of the Styrian Vulkanland as well as of the utilisation of the common brand on the competitiveness of the individual enterprises.

As mentioned in the beginning of this thesis, the location of an enterprise exerts considerable influence on a firm's attitude towards innovation. Firms located in city-regions usually have a better access to specialized services and also benefit from local knowledge spillover effects. In contrast, enterprises located within peripheral environments have to deal with certain problems (i.e. small local market, lack of economic activity, others) (CORONADO *et al.* 2008). Thus, within the final section the advantages and disadvantages of the location 'Styrian Vulkanland' should be identified. Considering the main factors which are essential for the choice of site (i.e. infrastructure, transport connection, human resources), the attractiveness of the region should be evaluated and as a consequence possible weaknesses should be discovered (KIRSCHNER *et al.* 2008).

4.1.1.2 Indicators

The six parts of the interview guideline comprise questions on the main indicators observed in course of the conducted survey in order to investigate the hypotheses on which the present thesis is based on (see section 2.5). The considered indicators for the innovativeness of the individual firms and the existences of an innovative milieu as well as of collective learning processes are therefore the firm's size (the number of employees), the expenditures on R&D, the existence of spatial proximity and territorial relationships, the main endogenous and exogenous knowledge sources, the export share, the location, inter-firm linkages as well as the stability of the local labour market (availability of human resources).

4.2 Final results

In course of the following sections, the results on the main topics of the interview guideline will be presented in detail, considering not just the theoretical framework discussed in chapter 2, but also accounting for supplementary literature on knowledge, networking and competitiveness.

4.2.1 Co-operation

Co-operations and territorial relationships are important within the creation of an innovative milieu and, particularly, in the implementation of collective learning processes. Pure and

quickly dissolving market relationships are in this respect not sufficient. The establishment of collective learning and as a consequence of an innovative or creative milieu requires durable co-operations based on trust between the involved actors (LONGHI 1999, BOSCHMA 2004). Moreover, persistent and regionally concentrated interactions not just favour the exchange of knowledge and the pursuance of innovative activities, but networking itself is regarded as a form of innovation. “*Since the necessary knowledge may lie outside a firm’s traditional core competence interfirm alliances and networks are widely recognized as an important organisation form of innovative activity*” (STEINER AND PLODER 2007, pg. 4).

4.2.1.1 Co-operative profile

In order to identify the co-operative profile of the interrogated firms, they were asked who their co-operation partners are and whether these are operating within the Styrian Vulkanland or not. The range of co-operation partners of the interviewees reaches from component suppliers and costumers to educational institutions and research centres.

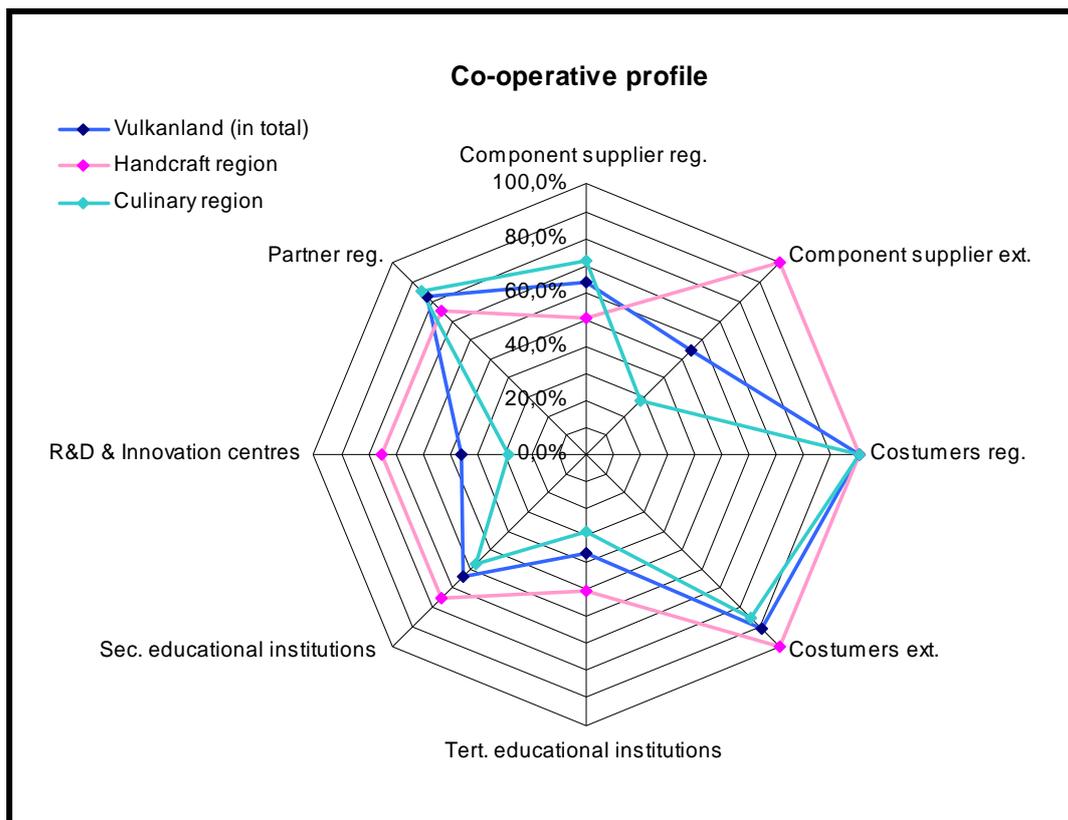


Figure 13: Co-operative profile of the interviewed enterprises in the Styrian Vulkanland, own representation.

As far as the acquisition of raw materials is concerned, 63,6 % of all interviewed enterprises cooperate with regional component suppliers compared to 54,6 % who (also) receive their raw materials from outside the Styrian Vulkanland. Although the majority of the interviewees are

willing to acquire necessary components and raw materials from within the region, regional component suppliers are often not able to meet the demand of regional producers. Especially within the ‘Handcraft region’ (textile and furniture industry), interviewed firms strongly rely on external component suppliers (100 %), whereas 50 % cooperate with regional suppliers as well. In contrast, 71,4 % of the interviewed enterprises within the ‘Culinary region’ (food processing industry and gastronomy) collaborate with regional component suppliers and only 28,6 % receive their raw materials from outside the Styrian Vulkanland (see figure 13, see also Annex 1: Tables).

Regarding the costumers of the interviewees, one can observe that all interrogated firms sell their products regionally, while 90,9 % also cooperate with clients outside the Styrian Vulkanland. Comparing, however, the situation within the ‘Culinary region’ and the ‘Handcraft region’, figure 13 clearly indicates that all interviewed firms operating in the ‘Handcraft region’ not only satisfy the demand of regional costumers, but also of external ones. In contrast, 85,7 % of the interrogated enterprises in the ‘Culinary region’ sell their products and services to clients outside the Styrian Vulkanland.

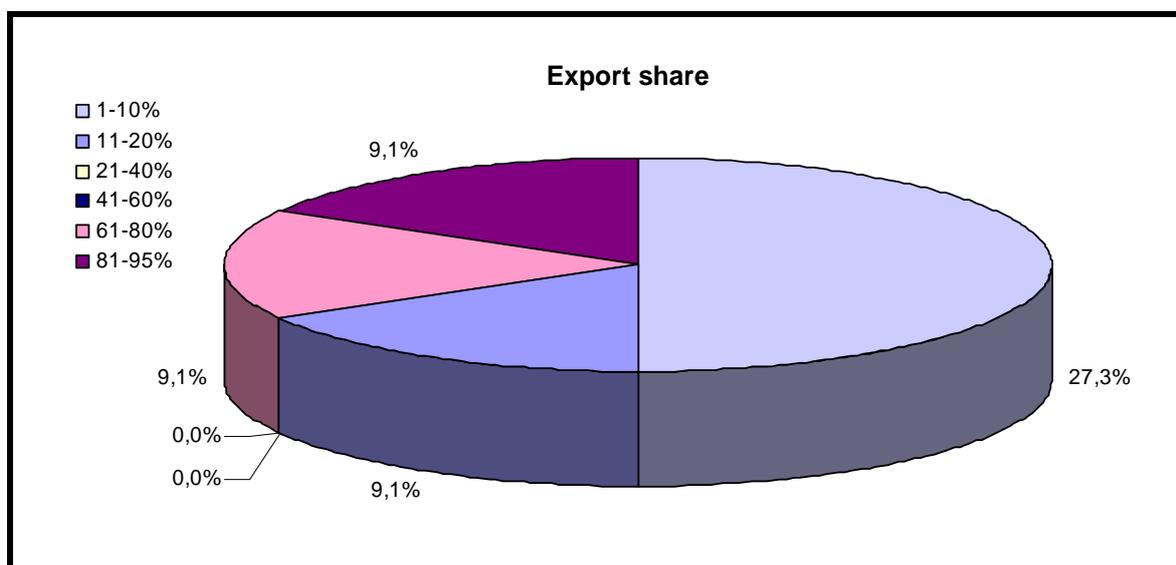


Figure 14: Export share (including only exports to foreign countries), own representation.

The export share of the interviewed firms is generally quite low, especially if only exports to foreign countries are taken into account and ‘exports’ to other Austrian provinces are neglected. In the first case, the export share varies between 1 % and 20 % (see figure 14) with the main export markets of Germany, Switzerland, Slovenia and Rumania. The main reason for the low export share is a lack of capacities and financial resources of the interviewed firms. These are mainly small enterprises which cannot afford to meet the demand within

foreign countries. Thus, the Styrian Vulkanland and other Austrian provinces [Bundesland] such as Salzburg, Burgenland or Vienna are still more attractive to the interviewees.

Besides the co-operation with regional and external costumers, 36,4 % of all interviewed enterprises also collaborate with tertiary and even 63,6 % with secondary educational institutions (see figure 13). Whereas these percentages are slightly lower within the ‘Culinary region’ with 28,6 % and 57,1 % respectively, about 50 % of the interrogated firms in the ‘Handcraft region’ tend to cooperate with tertiary and secondary educational institutions. In addition, about 45,5 % of all firms collaborate with R&D and innovation centres¹³ (28,6 % within the ‘Culinary region’ and 50 % within the ‘Handcraft region’). While co-operations with component suppliers occur in most cases on a regular basis, collaborations with educational institutions and/or innovation or R&D centres are project-based and conducted in an irregular or sporadic manner. Only the minority cooperates regularly with R&D centres and/or educational institutions.

4.2.1.2 Influence of the Styrian Vulkanland

Since the foundation of the Styrian Vulkanland, co-operations between regional actors were clearly simplified. Common activities and projects exert a unifying influence on the local population and entrepreneurship. In total, 81,8 % of the interrogated firms collaborate with regional enterprises within the same and across different sectors (see ‘Partner reg.’, figure 13). The Styrian Vulkanland especially contributed to a change in attitude of regional actors and created a basis of trust facilitating the creation of persistent and stable regional networks. A more positive internal and external image as well as the development of a ‘sense of belonging’ among inhabitants and regional enterprises supports the creation of self-sustaining dynamics (at least within the ‘Culinary region’) as well as of an innovative milieu. Furthermore, an innovative marketing strategy and the development of a regional umbrella brand enable a common commercialization of products and services of various regional enterprises. Taking the umbrella brand as an representative example, local networks of producers even created several sub-brands (i.e. ‘Eruption’¹⁴) highlighting the quality and speciality of the supplied range of products. Although jealousy is still hindering to successful

¹³ Examples are for instance the ‘Innovation Centre Auersbach’ or the ‘Joanneum Research’ in Hartberg.

¹⁴ ‘Eruption’ not just represents a brand for regional vine extraordinary in terms of quality, but also denotes the co-operation of eleven, innovative regional vine producers sharing new ideas and know-how.

networking activities, co-operations among regional actors, private and public respectively, significantly improved during the last few years due to the holistic development strategy of the Styrian Vulkanland.

4.2.2 Knowledge sources and generation

The generation of new knowledge as well as of technological know-how can be regarded as an essential ingredient to innovative activities. Knowledge, however, is “*contextual and specific to original conditions of accumulation and generation*” (ANTONELLI 2003, pg. 596). In general, two sorts of knowledge can be identified: codified and tacit knowledge. These distinctions are often taken as synonym for the differentiation between information and knowledge. Whereas knowledge is assumed to be largely tacit, information is thought to be fully codified and “*immediately accessible to whoever has the chance to hear or read it*” (BRESCHI AND LISSONI 2000, pg. 5). While codified knowledge can easily be reproduced and transmitted across long distances, tacit knowledge requires both, face-to-face contacts and mutual trust among “*the knowledge source and his/her recipients*” (*ibid.*). Although the transfer of knowledge is socially determined, strong social ties are not sufficient to access new, excludable know-how. In fact, actors not just have to invest resources for the generation of new knowledge, but they also have to build up the competences required for the absorption of knowledge developed by others (BRESCHI AND LISSONI 2000). Institutional and organisational routines as well as the deep involvement in common co-operative activities facilitate the sharing of new know-how and the implementation of collective learning processes within a specific network (CAPELLO 1999; BRESCHI AND LISSONI 2000). Moreover, the “*social process of cumulative knowledge, based on shared rules and procedures*” (CAPELLO 1999, pg. 354) or simply collective learning plays, as mentioned within chapter 2, a central role within the transformation of an ordinary milieu in an innovative one (CAPELLO 1999). The interviewed enterprises were therefore not just asked to list their various knowledge sources, but also if knowledge is generated or exchanged with co-operation partners.

4.2.2.1 Exogenous and endogenous knowledge sources

As far as the generation and search for new knowledge is concerned, the creation of new know-how is largely dependent upon the combination and integration of complementary parts of knowledge, tacit and/or codified in nature, within the knowledge production process. “*New knowledge is generated (...) by the means of recombination of both pre-existing and parallel units of knowledge*” (ANTONELLI 2003, pg. 597). Within the conducted survey, it was

differentiated between two different types of knowledge sources – exogenous (i.e. co-operation partner within the same or different industry or external consultants) and endogenous (i.e. employees or learning-by-doing). The main exogenous sources of knowledge which could have been identified (see figure 15, pg. 56) are interactions with co-operation partners (63,6 %), workshops (63,6 %) and technical literature (63,6 % of the interrogated firms). While within the ‘Culinary region’ 85,7 % of the interviewed enterprises use technical literature (codified knowledge) to generate new know-how, 75 % of the interviewees operating within the ‘Handcraft region’ regard their co-operation partners and workshops as a potential exogenous knowledge source. 27,3 % of all interviewees – 50 % of the interrogated enterprises in the ‘Handcraft region’ and 14,3 % of those operating within the ‘Culinary region’ – refer to the Styrian Vulkanland as a further source of knowledge, especially in the area of marketing. Less popular are instead the enterprises’ costumers with 9,1 % and external consultants (used by 18,2 % of all interrogated firms). Though services of external consultants or of knowledge intensive business service firms are drawn upon less frequently by the interviewed enterprises, these may act as intermediaries within the transmission of knowledge in a certain market place and may *“help parties to establish the actual direct relationship when they act as assistant to exchanges and help the transactions to be performed”* (ANTONELLI 2003, pg. 600).

The main endogenous sources of knowledge are learning-by-doing which is practiced by 54,5 % of the interviewed enterprises and employees who are regarded by 36,4 % of the interviewees as important for the generation of new know-how. Comparing the respondents’ answers within the ‘Culinary region’ and the ‘Handcraft region’, 25 % of the interviewees within the latter are relying on learning-by-doing in contrast to 71,4 % of those operating within the former. Instead, employees are regarded by 75 % of the interrogated firms in the ‘Handcraft region’ as essential source for new knowledge, whereas only 14,3 % of the interviewed enterprises in the ‘Culinary region’ share this opinion. Labour force and in particular skilled labour is an important factor within the flow of knowledge across a certain region. Although local labour mobility should not be categorized as a pure knowledge spillover, *“they help diffusing knowledge through a certain region”* without requiring *“face-to-face contacts or the inter-personal or inter-firm sharing of tacit knowledge”* (BRESCHI AND LISSONI 2000, pg. 22). However, despite the value of skilled labour force within the generation and diffusion of new (tacit) knowledge, none of the interrogated enterprises

referred to employees as most important knowledge source.¹⁵ 36,4 % of the interviewees regard co-operation partners and learning-by-doing as more important within the generation of new knowledge, followed by further education within workshops with 27,3 % (compare to the pink balks in figure 15).

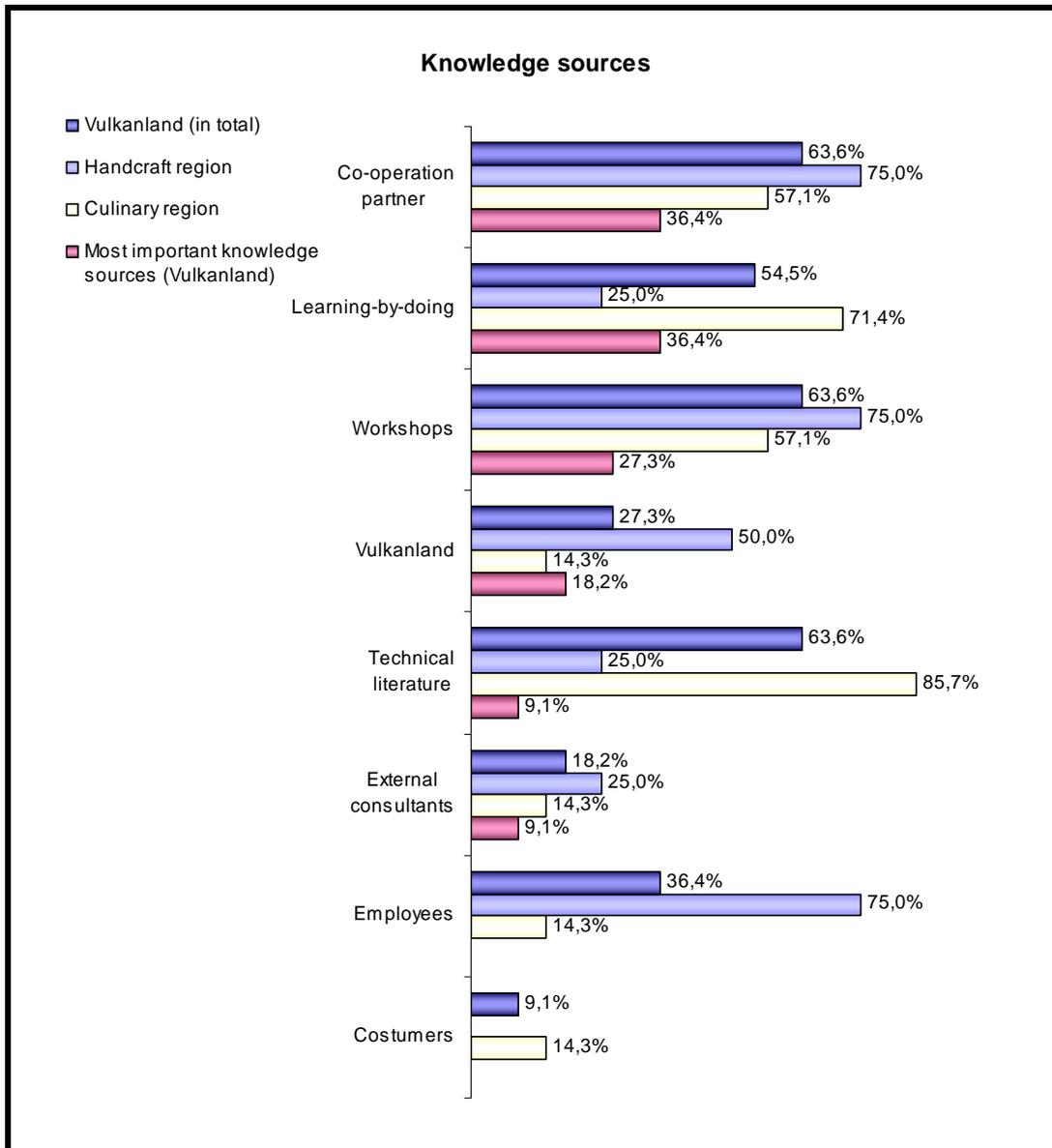


Figure 15: Knowledge sources, own representation.

Considering now the mode knowledge exchange between the knowledge sources and the recipients, collective learning processes or the transfer of knowledge can come about via

¹⁵ Within this context it has to be taken into account that most of the interrogated firms are small or even very small enterprises. The majority is family owned with hardly any employees.

conscious or unconscious mechanisms (see section 2.3.1). While conscious mechanisms include, for instance, co-operations between regional enterprises as well as enterprises and innovation centres in terms of interactive learning, unconscious mechanisms describe the movement of ‘embodied expertise’ in from of managers or employees (KEEBLE AND WILKINSON 1999). 81,8 % of all interviewed firms (75 % of the interviewees in the ‘Handcraft region’ and 85,7 % of the interrogated enterprises in the ‘Culinary region’) said to exchange knowledge consciously via the collaboration with other regional actors. Just 18,2 % attain knowledge via unconscious mechanisms (see figure 16).

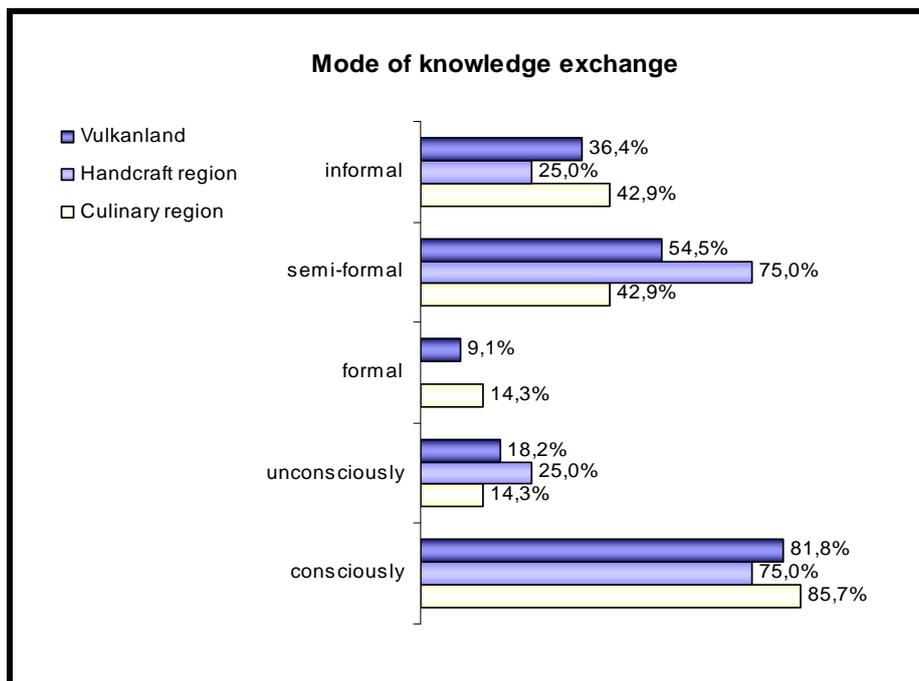


Figure 16: Mode of knowledge exchange, own representation.

As far as the degree of formality is concerned, knowledge in context of interactive learning with co-operation partners is mostly generated within a semi-formal (54,5 %) or informal (36,4 %) atmosphere via face-to-face contacts. A formal knowledge exchange is mostly common within formal meetings, technical courses, workshops or seminars (see figure 16).

4.2.3 Labour force

As mentioned within the previous section, skilled labour plays a significant role within the diffusion of knowledge across a certain region (BRESCHI AND LISSONI 2000) and as a consequence within the generation of new know-how as well as the pursuance of innovative activities. Moreover, the existence of a local labour market characterized by skilled labour mobility is a necessary ingredient within the implementation of collective learning processes

and the creation of an innovative milieu (see section 2.3.1.1). However, innovative activities and collective learning not only depend upon the local supply of skilled labour, but also on a firm's size and therefore on the number of workers employed. In general, larger firms are less likely to exploit collective learning as a potential source of new knowledge because they have the possibility to spend more resources on further knowledge creation and are therefore more oriented towards the exploitation of internal innovative capacities. In contrast, small enterprises with little innovative resources and only a few employees are more likely to exploit collective learning (CAPELLO 1999). All firms interviewed in course of the present case study are part of the latter category. They can be described as small (27,3 % of the interrogated firms) or as very small enterprises (72,7 %).¹⁶ Despite the fact that the majority of the interviewed enterprises (72,7 %) employ less than ten employees, it is of interest whether these are acquired from within the region and if intermediaries such as the public employment service and/or leasing companies are utilized within the acquisition process. Due to the importance of a stable labour market within an innovative milieu, it should additionally be discussed whether the regional labour supply within the Styrian Vulkanland is sufficient to interrogated firms or not.

4.2.3.1 The acquisition of labour and the regional labour supply

Regarding the acquisition of labour, figure 17 clearly indicates that nearly all firms (90,9 %) hire their employees from within the Styrian Vulkanland. Although the majority of the interrogated enterprises employ regional workers, the interviewees' evaluation of the availability of human resources within the Vulkanland is riven. Whereas some firms (27,3 %) have no problems to acquire new employees, the labour supply for enterprises within the furniture and food processing industry is problematic. Most of the interrogated firms refer to a lack of technical experts and/or trainees. In addition, the supplied labour force does not always provide the qualifications and competences required by regional firms. However, the Vulkanland suffers from a further problem which is typical for rural areas – the migration of regional labour force due to more attractive jobs within and around urban areas. Although the Styrian Vulkanland does at the present state of affairs not fulfil the pre-requisite of a stable regional labour market providing the skills demanded by regional firms, one tries to find a

¹⁶ According to WIBIS Steiermark enterprises can be classified the following: very small enterprises (1-9 employees), small enterprises (10-49 employees), medium sized enterprises (50-249 employees) and large enterprises (more than 250 employees).

solution to this problem. The Styrian Vulkanland developed a package of measures (i.e. the promotion of the foundation of new enterprises and the attempt of creating more attractive jobs within the region) to improve the regional supply of labour and to remove the insufficiencies often responsible for the high regional percentage of commuters. Due to the partly strained situation concerning the regional supply of human resources, it is not surprising that in total 18,2 % of the interrogated firms also receive their employees from outside the Styrian Vulkanland (figure 17).

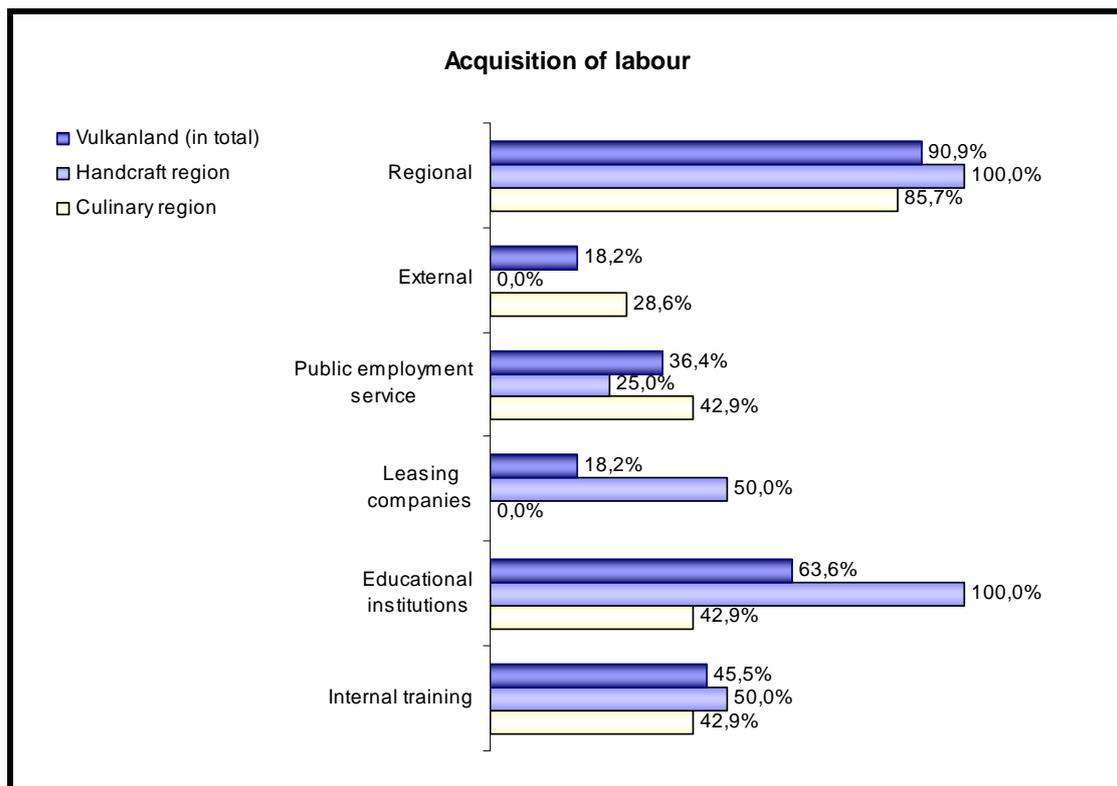


Figure 17: Acquisition of labour, own representation.

Besides the regional supply of human resources, the interrogated firms were also asked whether they receive labour from regional educational institutions. About 63,6 % of the interviewed enterprises utilize regional educational institutions (such as the school for tourism in Bad Gleichenberg) as potential source for new labour. While all interviewees within the ‘Handcraft region’ stated to receive employees from educational institutions, this percentage amounts within the ‘Culinary region’ to 42,9 %. Within this context, it has to be taken into account that the interrogated firms not only use secondary educational institutions as a potential source for qualified employees, but also compulsory schools which are possible contact-points for trainees.

Two final sources providing prospective employees are leasing companies used by 18,2 % and the Public Employment Service Austria (AMS) accessed by 36,4 % of all interviewees. Apart from the fact that some of the interviewees receive labour from leasing companies or the public employment service, most of the interrogated firms do not rely on these two as sources for qualified labour due to negative past experiences. As available workers not always meet the firms' requirements, 45,5 % of the interviewed enterprises (50 % within the 'Handcraft region' and 42,9 % within the 'Culinary region) count on internal training of employees and trainees (figure 17).

4.2.3.2 General requirements

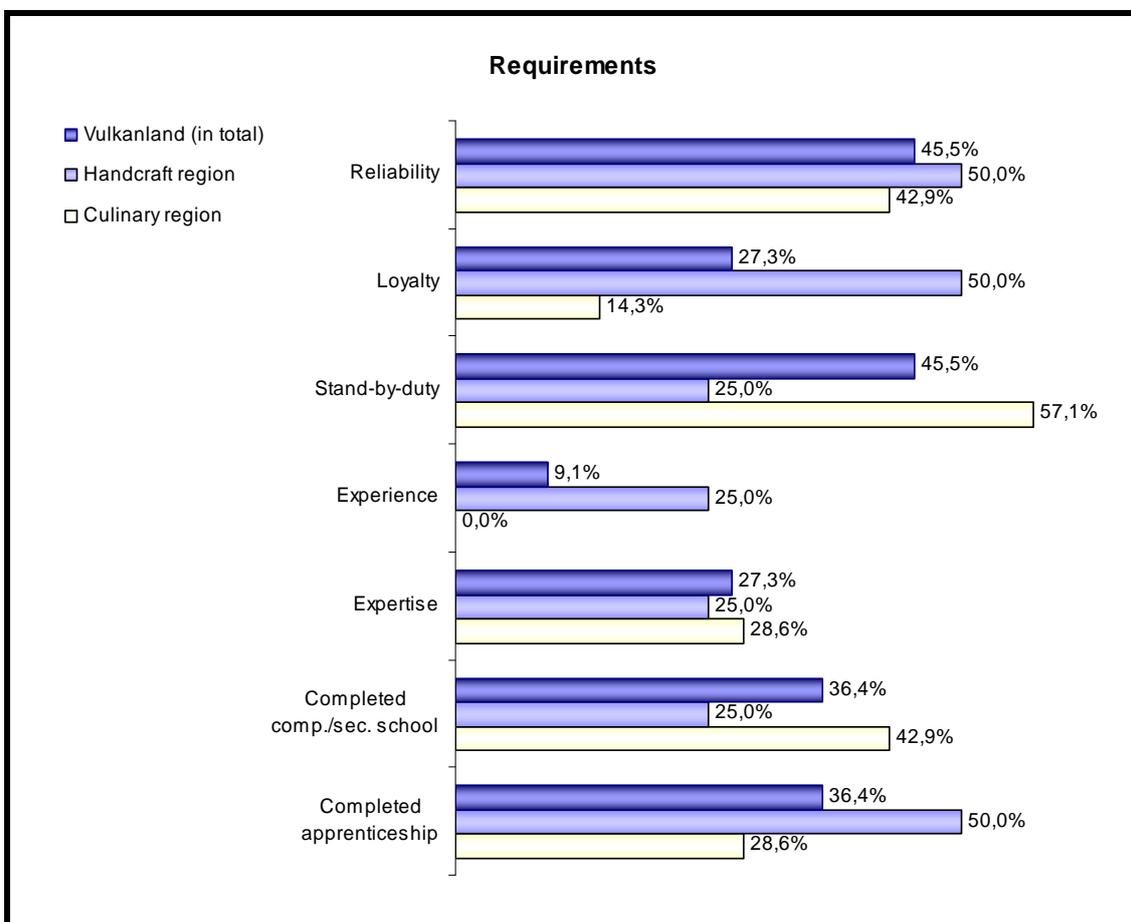


Figure 18: Labour force: qualification and further competences, own representation.

As far as the main requirements of the interrogated firms are concerned, potential employees are ought to fulfil a range of specific skills and certain social competences (see figure 18). Taking the level of education into account, 36,4 % of all interviewed enterprises require an apprenticeship or a completed secondary and/or compulsory school dependent on the operational area of the prospective worker. Regarding the required educational level within

the ‘Culinary region’ and the ‘Handcraft region’, 28,6 % of the interviewees operating within the former want their employees to have a completed apprenticeship in contrast to 50 % within the latter. While 42,9 % of the interrogated enterprises in the ‘Culinary region’ prefer graduates of secondary or compulsory schools, this share amounts to 25 % within the ‘Handcraft region’. Besides certain educational requirements, reliability (45,5 %), stand-by-duty (45,5 %), expertise (27,3 %) and loyalty (27,3 %) seem to be equally important factors (figure 18). Especially reliability and loyalty play a central role within the organisational structure of an enterprise. Employees characterized by a high degree of reliability and loyalty need less hierarchical control and lower the risk of opportunism. Consequently, the lower the probability of opportunistic behaviour, *“the larger the levels of trust in a system are and the higher the levels of general efficiency within a regional system”* (ANTONELLI 2003, pg.602).

4.2.4 Competitiveness

Considering a firm’s competitiveness, this is, in most cases, closely connected to the pursuance of innovative activities. Despite the importance of innovation, there exist further factors which influence the degree of competitiveness of an individual enterprise or region. The access to education and training, the stability and flexibility of the regional labour market, the availability of capital, the existing infrastructure and regional economy as well as a successful management strategy are all necessary within the maintenance of a certain level of competitiveness (WREN 2001). However, the notion of competitiveness is according to Krugman misconstrued. While *“firms may rightly be seen as competing in a ‘win-lose’ fashion, the same metaphor does not carry over to nations which can potentially all gain from trade”* (WREN 2001, pg. 848). In fact, the concept of competitiveness can be applied to different levels ranging from the level of a single firm and industry to the national economy. Moreover, competitiveness is a relative concept which compares the performance across various economic units. Besides its relativity and the manifold application, industrial competitiveness can generally be defined as *“the ability to produce the right goods and services at the right quality, at the right price, at the right time”* (Department of Trade and Industry (DTI) 1999, pg. 9 cited according to WREN 2001, pg. 848). On basis of this definition, the present case study especially concentrates on the measures the interrogated firms take in order to stay competitive and aspires to identify whether they focus on external markets (within Austria or foreign countries) or not.

4.2.4.1 Measures of competitiveness and the entry on new markets

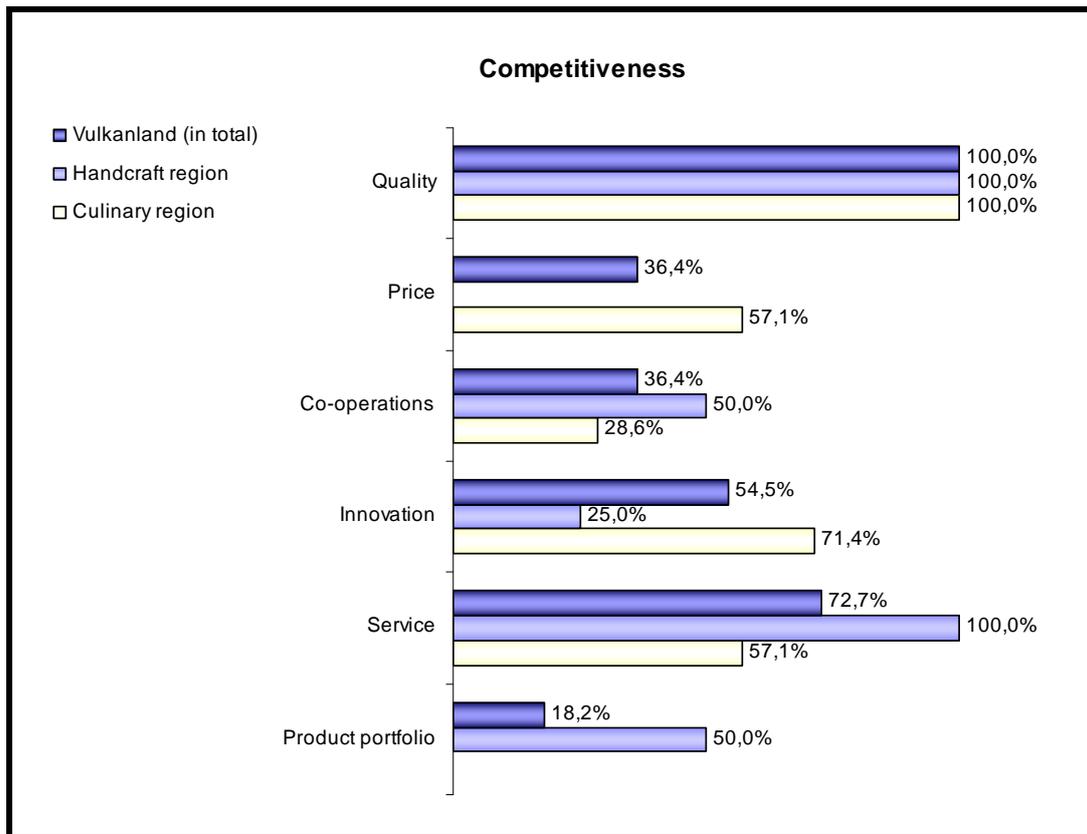


Figure 19: Measures of competitiveness, own representation.

Referring firstly to the firms' measures of competitiveness, all interviewed enterprises within the 'Handcraft region' and the 'Culinary region' respectively rely on the production of high quality products. Price competition is only used by 36,4 % of all interviewees, whereby these mostly operate in the gastronomy sector where the relation between price and quality seems to be most important. It is therefore not surprising that 57,1 % within the 'Culinary region' participate in regional price competition and none within the 'Handcraft region'. However, the majority of the interviewed firms concentrate on the production of high quality products which are not always offered at lowest price, but which are extraordinary in terms of composition and/or design. Additional to the focus on quality, 72,7 % of the interrogated firms (100 % within the 'Handcraft region' and 57,1 % in the 'Culinary region') try to provide special services to their costumers, such as after-sale services which are especially common within the furniture industry. Besides services, quality and price competition, continuous collaborations with co-operation partners, a diversified product portfolio as well as innovative activities can be essential to maintain or even augment a firm's competitiveness. While 54,5 % of the interviewed enterprises (25 % in the 'Handcraft region' and 71,4 % in the 'Culinary region') stated explicitly to pursue innovative activities in order to stay

competitive, measures via the production of a great variety of products (18,2 %) or long-lasting relationships and collaborations with co-operation partners (36,4 %) seem to be less popular (see figure 19).

Strongly connected with a firm's competitiveness is the entry on new markets and the pursuance of external marketing. 45,5 % of the interviewed enterprises stated in course of the survey to concentrate on external markets located outside the Styrian Vulkanland. This share amounts to 42,8 % within the 'Culinary region' and to 50 % within the 'Handcraft region'. As mentioned in section 4.2.1, the export share of the interrogated firms is in general quite low if only exports to foreign countries and not to other Austrian regions are taken into account. The export share varies between 1 % and 20 % (see figure 14 in section 4.2.1.1) with the main markets of Germany, Slovenia, Switzerland and Rumania. Marketing on external or foreign markets usually happens via the Internet, expositions and the co-operation with large enterprises. However, the lion's share of the interviewed firms does not have the capacity to focus on the entry on foreign markets. The lack of financial resources not just hinders the pursuance of marketing within foreign countries, but also the delivery of products due to prohibiting high costs (for small firms). Therefore most of the interviewed firms concentrate on the Styrian Vulkanland or on other Austrian region.

However, the creation of the Styrian Vulkanland and the common regional brand positively influenced the competitiveness of regional firms (stated by 72,7 % of the interviewees). The Vulkanland's marketing strategy lead to an increasing popularity of the region as well as of the umbrella brand, spurring the local and external demand of regional products and services. Local enterprises are benefiting from the regional development either directly through an increase in sales or indirectly via tourism. In fact, the Vulkanland's marketing strategy also facilitated the commercialization of products for regional enterprises within and outside the Styrian Vulkanland, providing further opportunities to individual firms.

4.2.5 Location

A final important factor of influence on the innovativeness of an enterprise is its location. The background of a region largely influences innovative activities and the actors' attitude towards innovation (TABARIES 2005). The initial position of peripheral regions is within this context much worse than the one of urban areas. City-regions are often regarded as "*locomotives of the national economies*" (SCOTT AND STORPER 2003, pg. 581). They are super-agglomerations characterized by numerous interrelated economic activities with high

levels of productivity and innovative potential. Besides the generation of agglomerative advantages, metropolitan areas are generally growing faster than other areas. Cities therefore often appear to be more privileged sites than peripheral regions. They “*economize on capital-intensive infrastructure (which is particularly scarce in developing areas), thus permitting significant economies of scale to be repeated at selected locations*” (*ibid.*, pg. 582). To the numerous benefits of city-agglomerations, three further phenomena have to be added:

1. Backward and forward linkages between firms;
2. The formation of dense and stable local labour markets;
3. The creation of relational assets supporting innovation and learning effects (SCOTT AND STORPER 2003).

While urban areas represent attractive locations for the foundation of new enterprises, peripheral environments often have to deal with several problems (see section 2.1). They are mostly characterized by a lack of economic activity, a lack of entrepreneurship, a small local market and an insufficient supply of specialized services to firms (CORNADO *et al.* 2008). The difficult economic situation of rural areas as well as the weak access to new technological knowledge can exert a negative influence on the attitude towards innovation and as a consequence on a firm’s competitiveness. According to the various problems rural areas are accused of, the present master’s thesis particularly concentrates on the advantages and disadvantages of the region under consideration, the attitude of regional actors towards the regional development plan as well as on the areas the Styrian Vulkanland might influence.

4.2.5.1 Advantages and Disadvantages

As far as the advantages of the Styrian Vulkanland are concerned, all interviewees within the ‘Culinary region’ and the ‘Handcraft region’ respectively value the high quality of life in the region (see figure 20). The quality of life is followed by the appreciation of the existing network of local actors and of the quality of regional educational institutions with a share of 63,4 % each. Although in total 63,4 % of the interviewed enterprises are satisfied with the present quality of local educational institutions, the attitudes within the ‘Culinary region’ and the ‘Handcraft region’ are quite different. While 85,7 % of the interviewees within the ‘Culinary region’ have a positive picture of regional educational institutions, only 25 % of the interrogated firms within the ‘Handcraft region’ share this opinion. Besides local educational institutions and the quality of life, 54,6 % of the interviewed enterprises value the philosophy of the Styrian Vulkanland which particularly concentrates on a common commercialisation of

regional products and aspires to increase the awareness for the potential of local producers. Due to the endogenous development strategy and the creation of a common regional brand as well as of an internal image, positive changes within the minds of regional costumers were induced and the degree of popularity of the Styrian Vulkanland was increased. This development is appreciated by 27,3 % of the interrogated enterprises. A share of 27,3 % also values the regional cultural as well as corporate landscape which can be characterized, according to the statements within the conducted interviews, as innovative and dynamic.

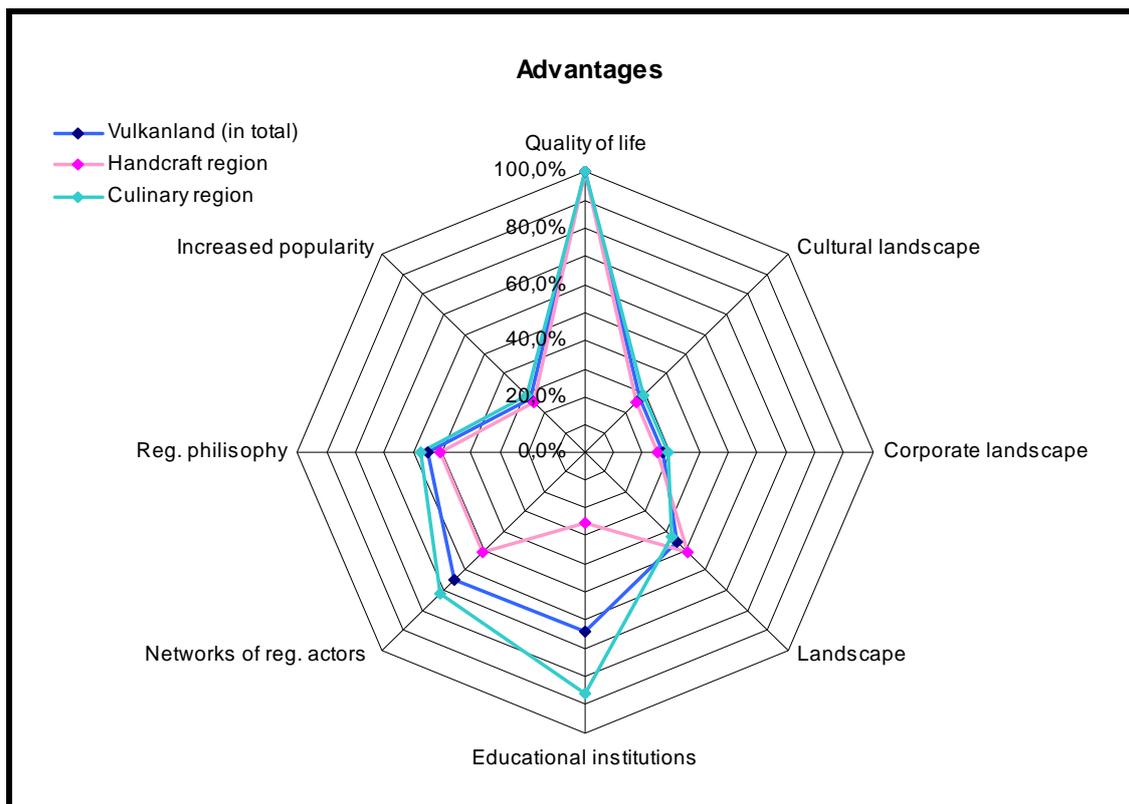


Figure 20: Advantages of the location 'Styrian Vulkanland', own representation.

Unlike the fact that about 45,5 % of the interviewees regard the regional landscape as advantageous, the geographical position of the Styrian Vulkanland is seen by 18,2 % of the interrogated enterprises as disadvantageous (see figure 21). However, a more severe problem of the Styrian Vulkanland seems to be the regional transport connection. Inhabitants, living in the most peripheral areas of the Styrian Vulkanland, take between 20 and 50 minutes to reach the main highways A2 and A9. Therefore 72,3 % of the interviewed enterprises (75 % within the 'Handcraft region' and 71,4 % within the 'Culinary region') evaluate the present transport connection as insufficient. A second most frequent mentioned disadvantage within the Styrian Vulkanland is the institutional framework for SMEs concerning the support of innovative activities as well as of the foundation of new enterprises. 54,6 % of the interrogated firms

dislike the regional institutional framework due to several bureaucratic barriers. In addition to the regional transport connection, geographical position and institutional frameworks, 27,3 % of the interviewees view the local mentality or in particular the regional jealousy as prohibiting factor to more intensive co-operations and networking activities. One final disadvantage is the local infrastructure which is evaluated by 18,2 % as inadequate (see figure 21).

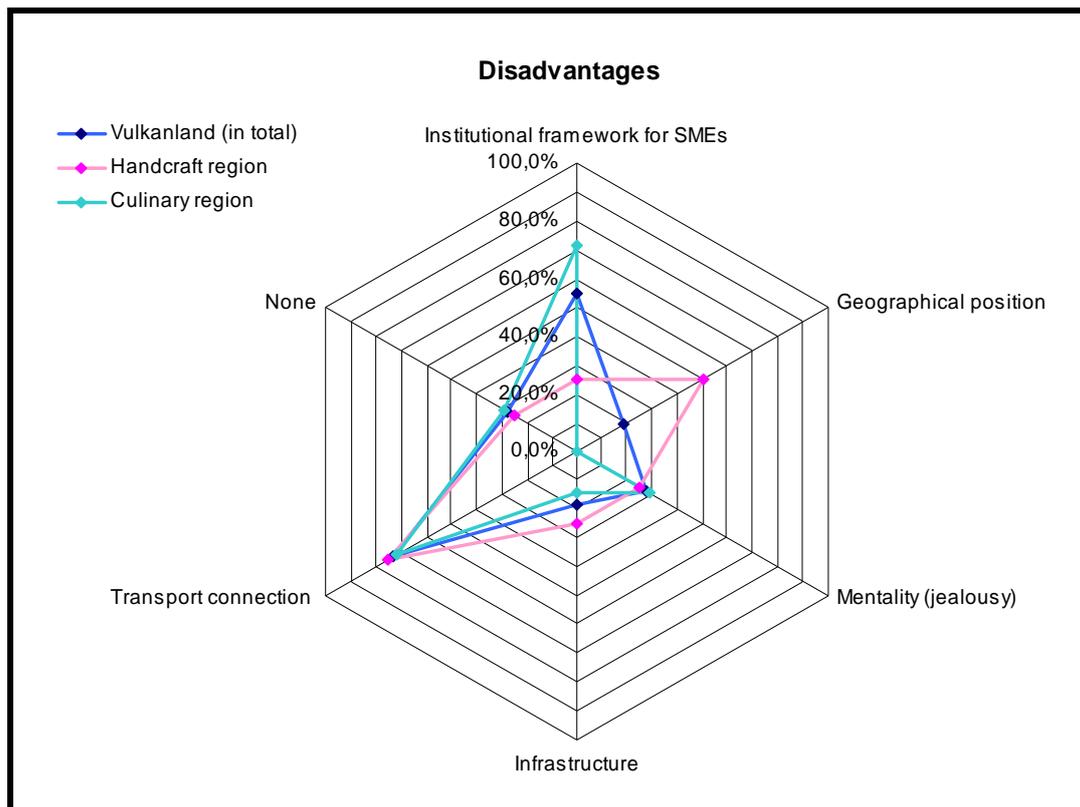


Figure 21: Disadvantages of the location 'Styrian Vulkanland', own representation.

While 72,7 % of the interrogated firms mentioned at least one of the above described disadvantages, about 27,3 % of the interviews see no significant problems within the Styrian Vulkanland (see figure 21).

4.2.5.2 Actors and the Styrian Vulkanland's regional objectives

As far as the regional development strategy is concerned, it was of interest whether the interviewed enterprises agree on the future objectives proposed by the Styrian Vulkanland or not. In order to identify their attitude towards the regional development plan and the regional philosophy, the interviewees were asked to assess each individual objective represented in table 3.

Table 3: Future objectives of the Styrian Vulkanland

<i>Short label</i>	<i>Long label</i>
<i>Objective 1</i>	<i>The maintenance of the innovation budget within the municipalities</i>
<i>Objective 2</i>	<i>Further investments in the three regional core competences</i>
<i>Objective 3</i>	<i>Increase the willingness to participate in common activities</i>
<i>Objective 4</i>	<i>Continuing the activity concerning local supply</i>
<i>Objective 5</i>	<i>Support for the regional economy and youth</i>
<i>Objective 6</i>	<i>Extension and improvement of the living, working and economic culture</i>
<i>Objective 7</i>	<i>Solving problems concerning the supply of regional jobs</i>
<i>Objective 8</i>	<i>Improving the collaboration between firms and municipalities</i>
<i>Objective 9</i>	<i>Sustaining the cultural landscape by promoting regional products</i>
<i>Objective 10</i>	<i>Increasing the use of regional energy sources (biological gas)</i>
<i>Objective 11</i>	<i>Increasing the use of regional energy sources (wood, ...)</i>
<i>Objective 12</i>	<i>Project for the participation of retired people on basis of a honorary position</i>

Source: KROTSCHKEK et al. (2007b), pg. 6.

The scale used within this context ranges from 0 to 4 and -1 to -4 respectively. While the sign indicates whether the actor is pro or against the pursuance of a certain objective, the score reflects the objective's importance (the higher score of each individual objective, the greater its importance). The results of the evaluation of the Styrian Vulkanland's future objectives are represented in table 4. Whereas the interviewed enterprises widely agree upon the pursuance of objective 1, 2, 4, 5, 6, 8, 9, 11 and 12, conflicts arise in case of objective 3, 7, and 10. These concern the willingness to participate in common activities, the necessity of solving problems on the regional labour market and the use of biological gas as a potential source of energy which is opposed by two of the interrogated actors. In contrast, most important to the interviewed enterprises seem to be an increased utilization of regional energy sources such as wood (objective 11) and the preservation of the cultural landscape by promoting the commercialisation of regional products (objective 9) with a score of 41 points each.

Table 4: Results concerning the actors' positions on each individual objective of the Styrian Vulkanland

Actors	Obj. 1	Obj. 2	Obj. 3	Obj. 4	Obj. 5	Obj. 6	Obj. 7	Obj. 8	Obj. 9	Obj. 10	Obj. 11	Obj. 12
<i>C1</i> ¹⁾	3	4	4	0	4	3	4	3	4	-4	3	4
<i>C2</i>	4	4	4	4	3	3	4	4	4	-1	4	4
<i>C3</i>	4	4	4	4	3	4	2	3	4	-4	4	4
<i>C4</i>	4	4	4	3	3	4	1	4	4	4	4	3
<i>G1</i> ¹⁾	4	4	-4	4	4	4	4	4	4	4	4	4
<i>G2</i>	2	2	2	4	4	2	4	4	4	4	4	4
<i>G3</i>	4	4	4	4	4	4	4	4	4	4	4	4
<i>H1</i> ²⁾	3	2	1	4	3	2	-1	4	4	3	3	2
<i>H2</i>	4	4	3	3	4	4	4	3	3	4	4	3
<i>H3</i>	3	4	4	4	4	4	4	2	3	3	3	3
<i>H4</i>	4	3	3	4	3	3	4	3	3	4	4	2
∑ Agreements	39	39	33	38	39	37	35	38	41	30	41	37
∑ Disagreements	0	0	-4	0	0	0	-1	0	0	-9	0	0

The assessment was conducted on a scale ranging from 0 to 4 and -1 to -4 (4 is the highest number of points available). The sign indicates whether an actor is pro or against a certain objective (+: pro, -: against).

¹⁾ *C1*, *C2*, *C3*, and *C4* as well as *G1*, *G2* and *G3* represent all actors operating in the 'Culinary region'. While the C-group comprises only actors operating within the food producing or agricultural sector, the G-group only includes enterprises within the sector of gastronomy.

²⁾ *H1*, *H2*, *H3*, *H4* represent all actors operating within the 'Handcraft region'.

On basis of the results represented in table 4, the convergence and divergence between actors can be represented graphically.¹⁷ Whereas convergence represents the number of common positions on objectives (pro or against) of each couple of actors, divergence identifies the number of objectives on which actors do not hold the same position. In both cases the actors' assessments of each objective are taken into account. In this context, figure 22 depicts the converging positions and figure 23 the diverging positions of the interviewed enterprises. The closer (farther away) the interviewees are, the higher the intensity of their convergence (divergence). While the couple of actors *H2* and *G3* as well as *G3* and *C4* show the strongest converging positions, the highest degree of divergence is observed in the case of couple *G1* and *C1* as well as *G1* and *C3* (represented by a bold red line in both cases).

¹⁷ The graphical representations were created with help of the software MACTOR (developed by LIPSOR).

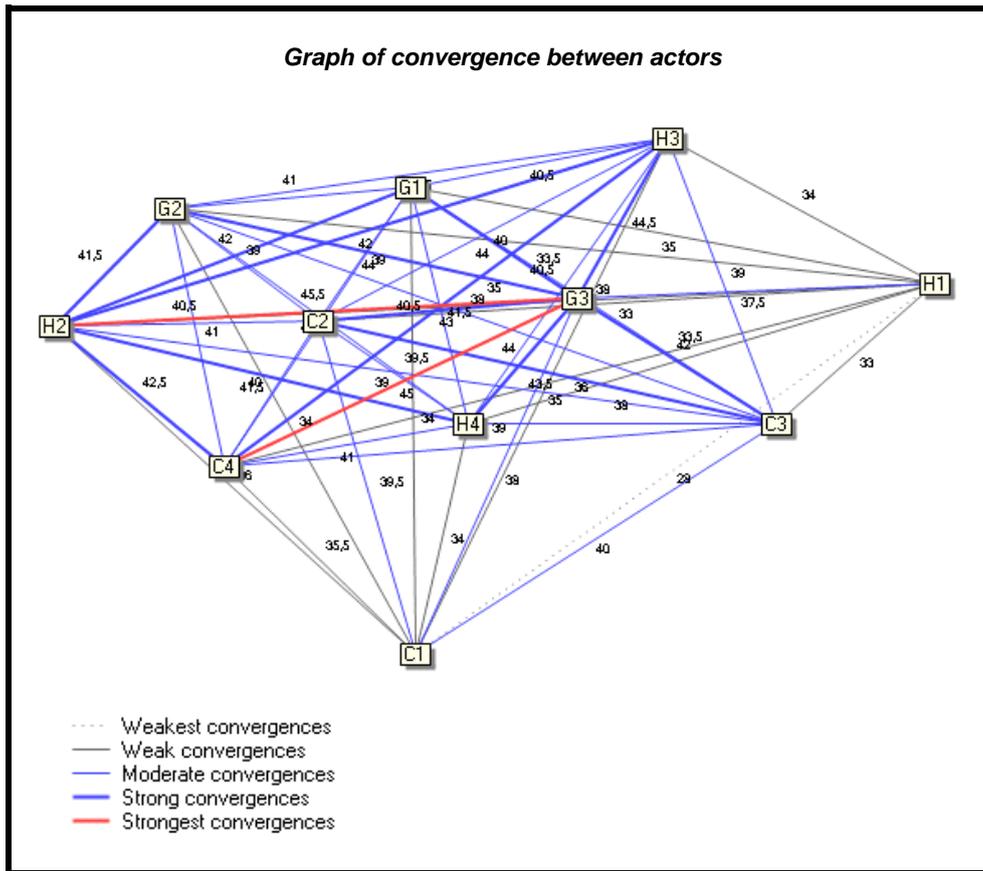


Figure 22: Graph of convergence between actors. (Data Source: interviews).

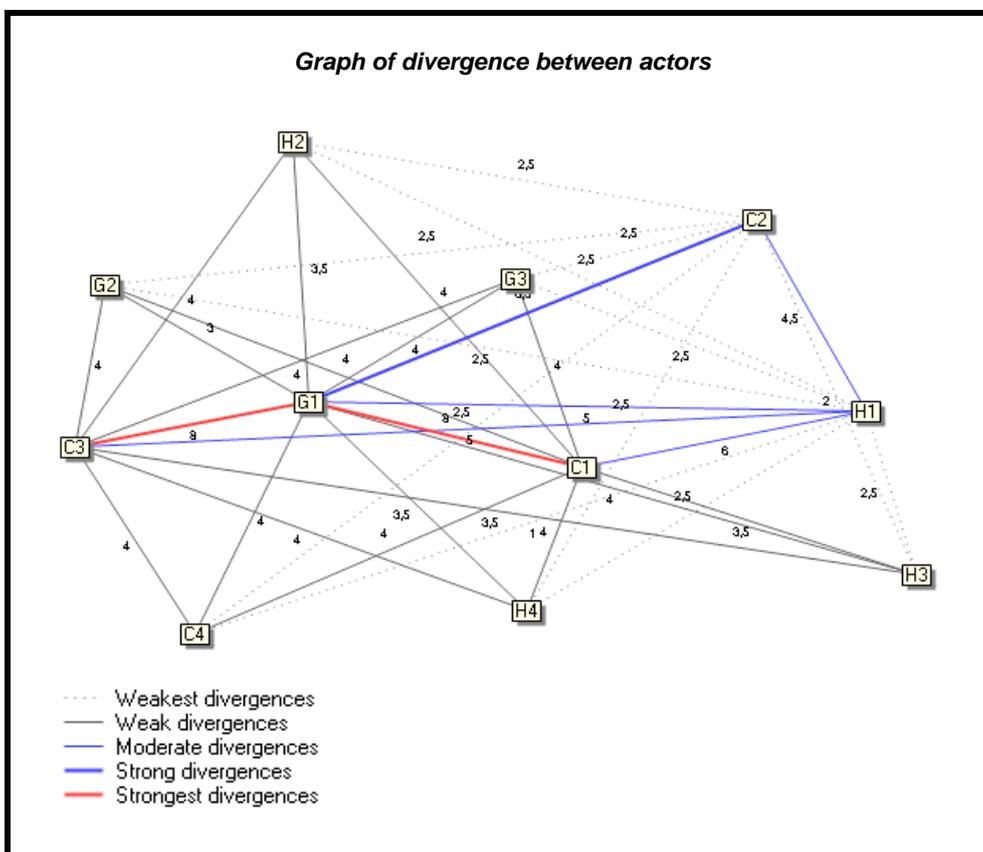


Figure 23: Graph of divergence between actors. (Data Source: interviews).

4.2.5.3 The Vulkanland's areas of influence

The influence of the Styrian Vulkanland has already been discussed shortly in course of sections 4.2.1 Co-operation and 4.2.4 Competitiveness. Additional to the impact on the regional co-operative profile and on a firm's competitiveness (mentioned by 81,8 % of all interrogated enterprises), further areas of influence could be identified in course of the conducted survey: the regional economy, the region's popularity, marketing and the awareness of local inhabitants for the potential of regional producers. As far as the regional economy is concerned, 36,4 % of the interviewed firms report the creation of certain economic dynamics within the region, especially within the 'Culinary region'. Particularly within this regional core competence, the endogenous development strategy of the Styrian Vulkanland led to the emergence of self-sustaining dynamics. These are, however, hardly reported within the 'Handcraft region'. In contrast, the Styrian Vulkanland's impact on the region's degree of popularity and on the awareness of local inhabitants is widely recognized by 63,6 % and 54,5 % respectively. Marketing is, however, only mentioned 27,3 % explicitly, whereby the Styrian Vulkanland especially facilitated marketing for individual firms and the access to information within this area (see figure 24).

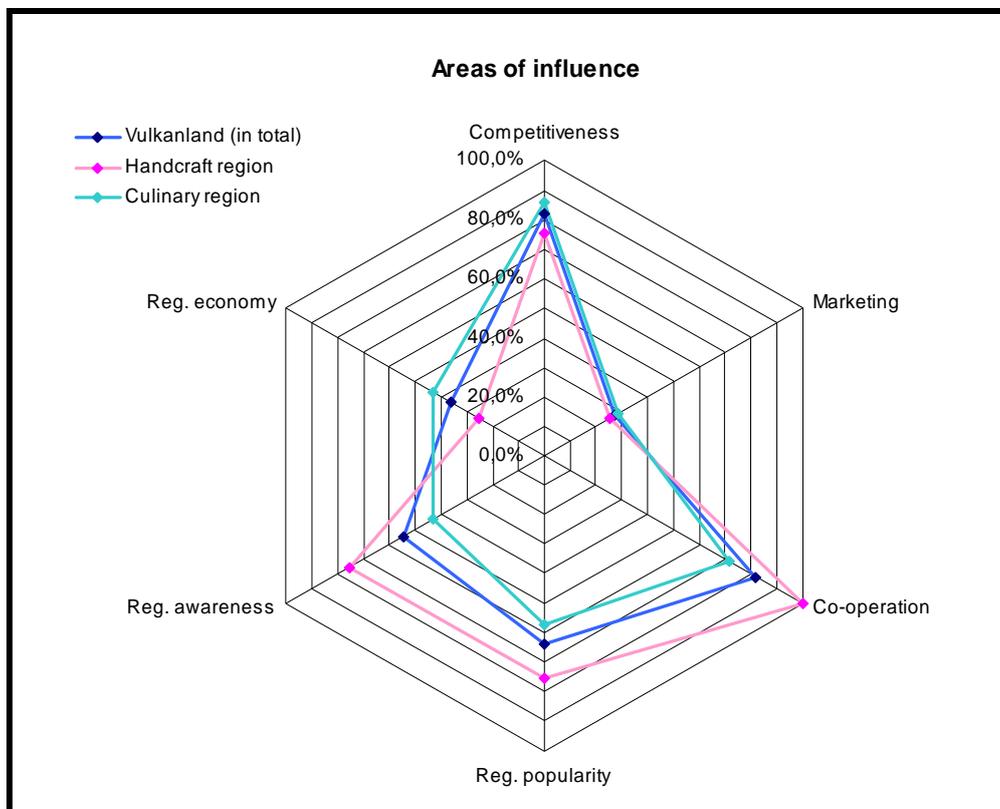


Figure 24: Areas of influence of the Styrian Vulkanland, own representation.

While Styrian Vulkanland influences successfully certain regional aspects, its measures seem to have only a small impact on innovation within a single enterprise. Although the Styrian Vulkanland promotes regional competitiveness and co-operations which may benefit the innovativeness of an individual firm, the initiated ‘innovation award’ and ‘innovation budget’ represent hardly an incentive for the regional entrepreneurs to innovate. However, the interviewees’ economic objectives for innovative activities will be discussed in more detail within the following section.

4.2.6 Innovation

A discussion on innovation is inevitably connected to a question of definition. The term ‘innovation’ can be defined on three different levels. According to the second edition of the Oslo Manual (EUROSTAT 1997), one has to differentiate between

1. The introduction of a worldwide novelty which occurs the very first time at the world market;
2. The introduction of an innovation on intermediate level which includes for instance products and process new to a certain region and/or country; and
3. The innovation on firm-level which comes about when a firm introduces a new or improved product or process which is novel to the firm, but already implemented within other enterprises and/or industries.

Within this context, the present master’s thesis especially concentrates on the minimum coverage of innovation – on innovations introduced at the level of a firm. In order to define a change on firm-level as innovation, it has to be novel or a significant improvement. These improvements or novelties can occur either in terms of production processes, products and organisation or in terms of design and marketing. While a so called product innovation comprises the creation of products which are significantly different from those previously produced or incorporate “*the use of higher-performance components or materials*” (thus indicating a better performance), a process innovation includes the “*adoption of new or significantly improved production methods, including methods of product delivery*” (EUROSTAT 1997, pg. 32). Thus, changes in equipment or the production organisation can be regarded as process innovation. Instead, organisational innovations (i.e. significant changes in the organisational structure, the implementation of advanced management techniques or changes within the corporate strategy) have to induce measurable changes within a firm’s output via an increase in performance or sales. Borderline cases within the discussion on

innovation are innovations in design and marketing. As far as innovation in design is concerned, one can speak of an innovation in context of industrial design and artistic design activities “*if undertaken on a technological new or improved product or process*” (EUROSTAT 1997, pg. 41). Creative product improvements, such as changes within the mere appearance of a product, cannot be defined as innovative activities. In the case of marketing, a modification can be regarded as an innovation if it comprises “*the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing*” (EUROSTAT AND OECD 2005, pg. 49).

4.2.6.1 Type of innovation

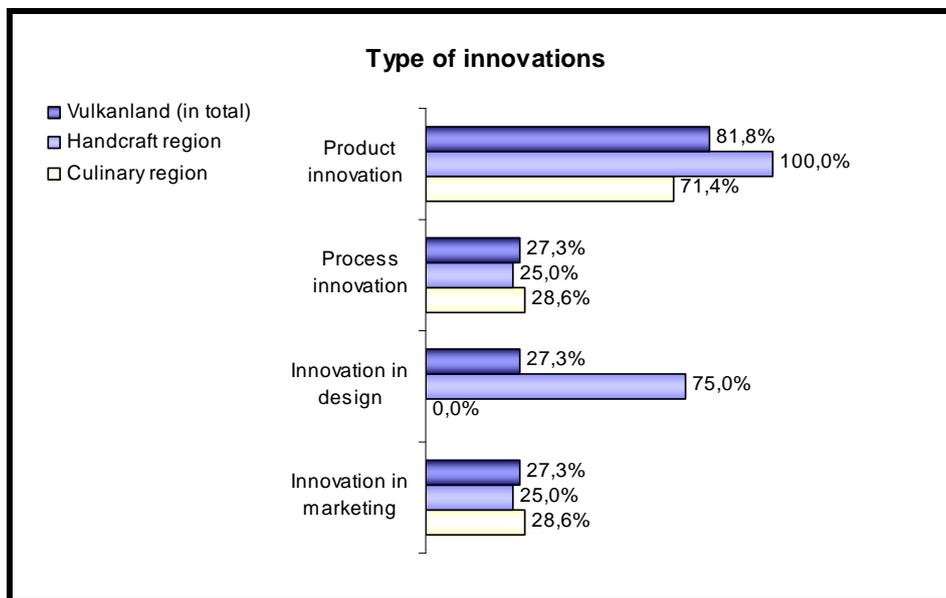


Figure 25: Identified types of innovation, own representation.

On basis of the definition of the different types of innovation, the accomplished survey yielded the following results. The majority of the interviewed enterprises, in total 81,8 % (thus, all interrogated firms operating within the ‘Handcraft region’ and 71,4 % within the ‘Culinary region’), stated to pursue product innovation which comprises either the introduction of completely new products or significant improvements. The pursuance of product innovation is followed by process innovation as well as innovation in design and marketing with 27,3 % each. Comparing the situation within the ‘Culinary region and the ‘Handcraft region’, 28,6 % within the former and 25 % within the latter declared to conduct process innovation and/or innovation in marketing. As far as innovation in design is regarded, the innovative activities within the ‘Handcraft region’ strongly differ from those within the ‘Culinary region’. While no interviewee within the latter pursues innovation in design, 75 %

of those operating within the former also concentrate on artistic design activities undertaken in course of the creation of a new or improved product (see figure 25).

4.2.6.2 Economic objective

The main economic objectives which induce the interviewed enterprises to pursue innovative activities range from private interests of individual entrepreneurs to the maintenance of competitiveness. In fact, the preservation or even augmentation of a certain degree of competitiveness is mentioned by 72,7 % of the interrogated firms – 85,7 % of the interviewees within the ‘Culinary region’ and 50 % of those within the ‘Handcraft region’. The preservation of competitiveness is followed the replacement of phased-out products and the extension of the existing product range with in total 54,5 % each. About 45,5 % of the interrogated enterprises (25 % in the ‘Handcraft region’ and 57,1 % in the ‘Culinary region’) mentioned private interest and curiosity as a further reason for the pursuance of innovative activities. While for 36,4 % of the interviewees the improvement within quality is a motive for innovation, a reduction in production costs is in this context a less popular economic objective. Only 14,3 % of the interviewed firms operating in the ‘Culinary region’, thus, about 9,1 % of all interrogated enterprises, mentioned a diminution in the costs of production as potential reason for the pursuance of innovation (see figure 26).

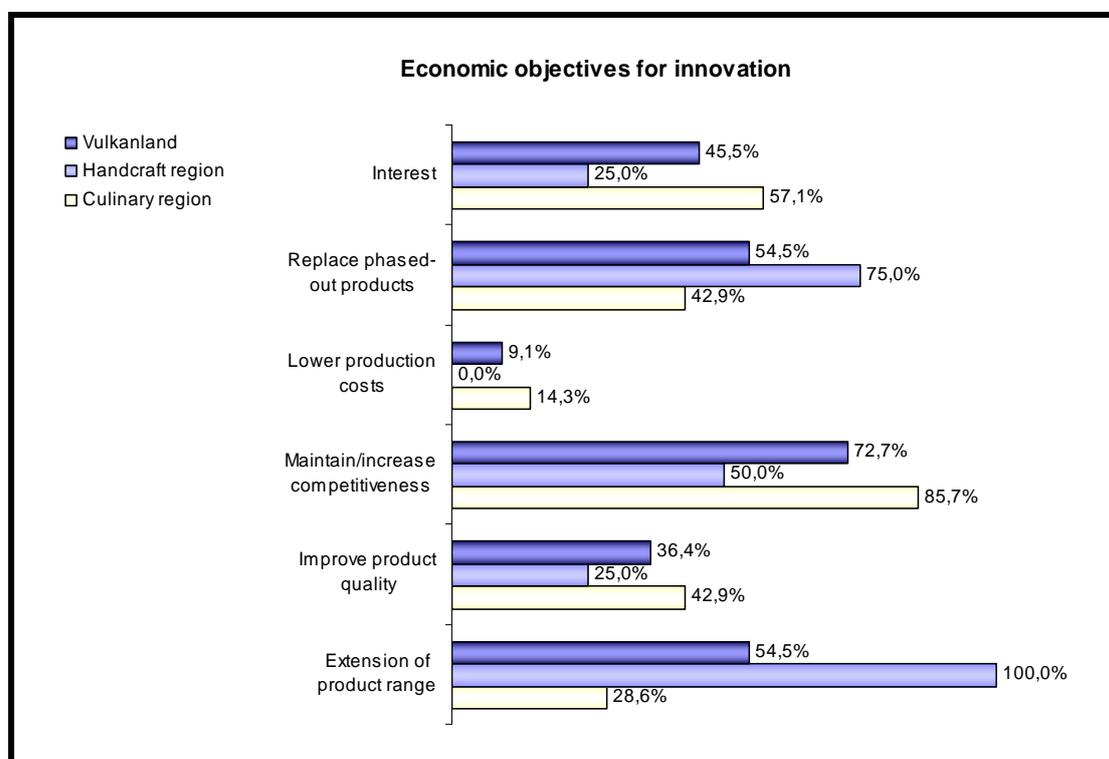


Figure 26: The firms' economic objectives for innovation, own representation.

4.2.6.3 Innovative maturity

Recalling the ‘innovation pyramid’ presented in chapter 2, all innovative firms which are part of a regional system have to pass certain stages of ‘innovative maturity’. ‘Irregular or sporadic innovating enterprises’ constitute the basis of the innovation pyramid. These are (as described within section 2.4) usually smaller or medium sized enterprises which do not have the capacity to pursue innovation constantly. In contrast, ‘emerging innovating firms’, pursue R&D and innovative activities regularly, but in a more project based manner. This level of the ‘innovation pyramid’ therefore includes all firms on the threshold for permanent innovation. Finally, the ‘peak of innovation’ comprises all innovating enterprises which pursue R&D activities continuously. Due to their continuous research activities, firms often possess an own R&D laboratory or innovation centre and hence skilled labour directly employed on R&D (KIRSCHNER *et al.* 2008).

As all interrogated enterprises stated to pursue innovative activities (with an average expenditure on innovation of 5 to 15 % of the transaction volume¹⁸), these will now be characterised according to the categorization used within the concept of ‘innovative maturity’. About 63,6 % of the interviewees are ‘irregular or sporadic innovating enterprises’. Typical for firms at this stage of ‘innovative maturity’ is learning-by-doing (practiced by 54,5 % of all interrogated enterprises) with a strong focus on competition via the price (common within 36,4 % of the interviewed firms). The rest of the interviewees (36,4 %) can be categorized as ‘emerging innovative enterprises’. These usually innovate regularly and in a project-based manner in co-operation with regional or external partners. Learning patterns at this stage of ‘innovative maturity’ evolve towards a system of collective learning. Therefore territorial relationships and the existence of a specialized regional labour market gain in importance (KIRSCHNER *et al.* 2008).

None of the interviewed enterprises is located at the ‘peak of innovation’ where collective learning processes are intensified. Firms at this stage develop towards learning organisations where given capacities are expanded continuously in order to create new knowledge. Due to sufficient internal resources and own R&D laboratories (KIRSCHNER *et al.* 2008), these firms

¹⁸ About 36,4% of the interrogated enterprises could not provide any information about their expenditures on innovative activities.

mostly constitute regional technological leaders who are hardly found within peripheral regions.

5 CONCLUSION

In consideration of the results presented in chapter 4, the Styrian Vulkanland only partly fulfils the pre-conditions required by the implementation of an innovative milieu and of collective learning. As expected in the first hypothesis (see chapter 2, section 2.5), certain problems arise if the concept of the 'milieu innovateur' is applied to a rural area. However, before the major difficulties arising within the case study area are discussed in more detail, those sets of elements are regarded which the Styrian Vulkanland succeeded to provide.

The first aspect refers to the existence of spatial proximity. The Styrian Vulkanland comprises an area of 1.064 square kilometres with a high density of regional enterprises located within a restricted geographical area. Besides the advantageous effect of spatial proximity in case of co-operative interactions and the transfer of knowledge, the Styrian Vulkanland tries to support the creation of organisational arrangements (such as networks) in the three major core competences ('Culinary region', 'Handcraft region' and 'Region of vital force'), aiming to coordinate the knowledge exchange within the region. Moreover, the Styrian Vulkanland succeeded to establish an internal as well as external regional image and a 'sense of belonging' via its marketing strategy. The existence of a consistent regional image relates to the second necessary pre-requisite required by the implementation of an innovative milieu. As actors within the Styrian Vulkanland are characterized by different professional backgrounds and interests, a coherent regional unit was created in order to direct them towards a common direction. Actors of the Styrian Vulkanland are unified via a common cultural background as well as corporate regional values which positively influence interactive learning and innovative activities. As the internal image accounts for the local value system and traditions, 54,5 % of the interviewed enterprises identify with the regional philosophy on which the endogenous developments strategy is based on.

Although the Styrian the Vulkanland clearly fulfils two essential pre-conditions important for the implementation of an innovative milieu, the evaluation of the existence of the third element – collective learning – turned out to be more demanding. Collective learning processes are only rarely exploited by the interviewed enterprises. Regarding the results on innovativeness, the learning patterns of about 36,4 % of the interrogated firms, or more precisely of the group of 'emerging innovating enterprises', develop towards collective

learning. In fact, the Styrian Vulkanland only provides a few of the pre-requisites required by the concept of collective learning (see section 2.3). While collective learning demands persistent territorial relationships, a regional knowledge base and a stable local labour market, only the first condition – territorial relationships – can definitely be regarded as given. In contrast, the evaluation of the existence of a regional knowledge base is more awkward. The existence of a regional knowledge base is in some cases closely connected to the development of regional core competences. The formation of core competences requires specific regional knowledge, no matter whether it is related to technology, marketing or organisation (LAWSON AND LORENZ 1999). As the Styrian Vulkanland succeeded in promoting three traditional core competences within the region, some kind of knowledge base needs to exist. Unlike the fact that the Styrian Vulkanland fulfils the first two pre-requisites, it lacks one essential element necessary in the implementation of collective learning processes – a stable labour market characterized by high levels of skilled labour mobility. In this context two problems arise within the case study area: a lack of human resources, in particular trainees and technical experts as well as the migration of workers (45 % of the employed population is working outside its district). Due to the difficulties arising at the regional labour market, one important ingredient is missing within the establishment of collective learning processes and as a consequence within the realisation of an innovative milieu.

The rural nature of the case study area is one reason why not all elements essential for the creation of an innovative milieu are given. Recalling the regional profile of chapter 3 (section 3.2), the Styrian Vulkanland still suffers from typical economic weaknesses of peripheral regions. Although not all problems are pronounced, the region under consideration is still characterized by a slightly decreasing population, a lower level of income and an unstable labour market. Although the Styrian Vulkanland's industrial structure – a high share of small and medium sized enterprises – benefits the implementation of collective learning (small firms are more likely to exploit collective learning processes due to their restricted internal resources), the insufficient supply of human resources can be regarded as a serious problem.

However, as rural areas are generally characterized by a more difficult economic situation than their urban counterparts, certain difficulties (ranging from infrastructural problems to a low entrepreneurial activity) might always inhibit the implementation of an innovative milieu and the full exploitation of a region's innovative potential. Therefore it is unlikely that the concept of the 'milieu innovateur' and consequently of collective learning can be applied a

hundred per cent, namely with all its pre-conditions to peripheral regions. Moreover, innovative milieus are difficult to implement in reality. They describe an “*abstract entity, an ideal archetype*” (CAPELLO AND FAGGIAN 2005, pg. 78) overlooking that firms are exposed to an unstable changing environment (FROMHOLD-EISEBITH 2002). Accounting for the weaknesses of the concept of the ‘milieu innovateur’ and for the particular economic situation within rural areas, an innovative milieu can only be implemented if peripheral regions succeed in restructuring their regional economies. Although the Styrian Vulkanland still has to solve certain problems (such as the restricted availability of human resources) and probably has to permit the inflow of larger amounts of external knowledge, the Styrian Vulkanland’s development strategy is a first step towards the creation of an up-coming region. A remarkable increase in the region’s popularity and a significant improvement within the collaboration of regional actors are first indicators for a positive further development.

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ANNEX 1: TABLES

Table 5: Demographic development

Austria	2,4%
Styria	1,2%
Vulkanland	-0,4%

Table 6: Unemployment rate 2002-2007

	2002	2003	2004	2005	2006	2007
Austria	6,9	7	7,1	7,3	6,8	6,2
Styria	7,2	7,3	7	7,3	6,8	6,4
Feldbach	7,2	7,4	6,4	6,8	6,6	6,2
Radkersburg	7	7,3	6,6	7,1	6,8	6,4

Table 7: Employees according to the size of enterprises

	Radkersburg	Feldbach	Styria	Austria
in very small enterprises (1-9 employees)	26,3%	26,7%	16,5%	16,8%
in small enterprises (10-49 employees)	28,0%	34,0%	21,1%	21,5%
in medium sized enterprises (50-249 employees)	38,8%	25,9%	21,5%	22,7%
in large enterprises (more than 250 employees)	6,9%	13,4%	40,9%	38,9%

Table 8: Economic structure: comparing the share of total employees within Austria, Styria and the Vulkanland

	Austria	Styria	Vulkanland
Tertiary sector	72,20%	68,30%	61,60%
Secondary sector	27,00%	30,60%	36,00%
Primary sector	0,90%	1,10%	2,40%

Table 9: Composition of the secondary within the Vulkanland according to the share of employees

Secondary Sector	
C Mining, power and water supply	7,10%
D Manufacturing industry	49,70%
F Construction industry	43,20%

Table 10: Composition of the tertiary within the Vulkanland according to the share of employees

Tertiary Sector	
G Commerce	41,9%
H Gastronomy	14,2%
I Traffic, telecommunication	5,5%
J Facility, insurance industry	4,3%
K Economic services	9,5%
L-Q Public administration, education, health, others	24,7%

Table 11: Gross median income 2002-2006

	2002	2003	2004	2005	2006
Austria	1.901	1.936	1.972	2.008	2.057
Styria	1.871	1.908	1.947	1.984	2.031
Feldbach	1.527	1.577	1.603	1.647	1.696
Radkersburg	1.602	1.695	1.730	1.723	1.769

Table 12: Co-operative profile of the interviewed enterprises in the Styrian Vulkanland

	Vulkanland	Handcraft region	Culinary region
Component suppliers reg.	63,6%	50%	71,4%
Component suppliers ext.	54,5%	100%	28,6%
Costumers reg.	100%	100%	100%
Costumers ext.	90,9%	100%	85,7%
Tert. educational institutions	36,4%	50%	28,6%
Sec. educational institutions	63,6%	75%	57,1%
R&D, innovation centres	45,5%	75%	28,6%
Partner reg.	81,8%	75%	85,7%

Table 13: Export share

Export share	relativ
1-10%	27,3%
11-20%	9,1%
21-40%	0%
41-60%	0%
61-80%	9,1%
81-95%	9,1%

Table 14: Knowledge sources

	Vulkanland	Handcraft region	Culinary region	Most important knowledge sources
Costumers	9,1%	0,0%	14,3%	0,0%
Employees	36,4%	75,0%	14,3%	0,0%
External consultants	18,2%	25,0%	14,3%	9,1%
Technical literature	63,6%	25,0%	85,7%	9,1%
Vulkanland	27,3%	50,0%	14,3%	18,2%
Workshops	63,6%	75,0%	57,1%	27,3%
Learning-by-doing	54,5%	25,0%	71,4%	36,4%
Co-operation partner	63,6%	75,0%	57,1%	36,4%

Table 15: Mode of knowledge exchange

	Vulkanland	Handcraft region	Culinary region
consciously	81,8%	75,0%	85,7%
unconsciously	18,2%	25,0%	14,3%
formal	9,1%	0,0%	14,3%
semi-formal	54,5%	75,0%	42,9%
informal	36,4%	25,0%	42,9%

Table 16: Acquisition of labour

	Vulkanland	Handcraft region	Culinary region
Internal training	45,5%	50,0%	42,9%
Educational institutions	63,6%	100,0%	42,9%
Leasing companies	18,2%	50,0%	0,0%
Public employment service	36,4%	25,0%	42,9%
External	18,2%	0,0%	28,6%
Regional	90,9%	100,0%	85,7%

Table 17: Labour force: qualification and further competences

	Vulkanland	Handcraft region	Culinary region
Completed apprenticeship	36,4%	50,0%	28,6%
Completed comp./sec. school	36,4%	25,0%	42,9%
Expertise	27,3%	25,0%	28,6%
Experience	9,1%	25,0%	0,0%
Stand-by-duty	45,5%	25,0%	57,1%
Loyalty	27,3%	50,0%	14,3%
Reliability	45,5%	50,0%	42,9%

Table 18: Measures of competitiveness

	Vulkanland	Handcraft region	Culinary region
Product portfolio	18,2%	50,0%	0,0%
Service	72,7%	100,0%	57,1%
Innovation	54,5%	25,0%	71,4%
Co-operations	36,4%	50,0%	28,6%
Price	36,4%	0,0%	57,1%
Quality	100,0%	100,0%	100,0%

Table 19: Advantages of the location 'Styrian Vulkanland'

	Vulkanland	Handcraft region	Culinary region
Quality of life	100,0%	100,0%	100,0%
Cultural landscape	27,3%	25,0%	28,6%
Corporate landscape	27,3%	25,0%	28,6%
Landscape	45,5%	50,0%	42,9%
Educational institutions	63,6%	25,0%	85,7%
Networks of regional actors	63,6%	50,0%	71,4%
Regional philosophy	54,5%	50,0%	57,1%
Increased popularity	27,3%	25,0%	28,6%

Table 20: Disadvantages of the location 'Styrian Vulkanland'

	Vulkanland	Handcraft region	Culinary region
Institutional framework for SMEs	54,5%	25,0%	71,4%
Geographical position	18,2%	50,0%	0,0%
Mentality (jealousy)	27,3%	25,0%	28,6%
Infrastructure	18,2%	25,0%	14,3%
Transport connection	72,7%	75,0%	71,4%
None	27,3%	25,0%	28,6%

Table 21: Areas of influence of the Styrian Vulkanland

	Vulkanland	Handcraft region	Culinary region
Competitiveness	81,8%	75,0%	85,7%
Marketing	27,3%	25,0%	28,6%
Co-operation	81,8%	100,0%	71,4%
Reg. popularity	63,6%	75,0%	57,1%
Reg. awareness	54,5%	75,0%	42,9%
Reg. economy	36,4%	25,0%	42,9%

Table 22: Identified types of innovation

	Vulkanland	Handcraft region	Culinary region
Innovation in marketing	27,3%	25,0%	28,6%
Innovation in design	27,3%	75,0%	0,0%
Process innovation	27,3%	25,0%	28,6%
Product innovation	81,8%	100,0%	71,4%

Table 23: The firms' economic objectives for innovation

	Vulkanland	Handcraft region	Culinary region
Extension of product range	54,5%	100,0%	28,6%
Improve product quality	36,4%	25,0%	42,9%
Maintain/increase competitiveness	72,7%	50,0%	85,7%
Lower production costs	9,1%	0,0%	14,3%
Replace phased-out products	54,5%	75,0%	42,9%
Interest	45,5%	25,0%	57,1%

ANNEX 2: INTERVIEW GUIDELINE

Date: _____ Time: _____ Interviewee: _____

I. GENERAL INFORMATION

1. General information concerning the firm's development during the past five years:

- a) **Number of Employees** **2008:** _____ **2003-08:** _____
- b) **Transaction Volume** **2008:** _____ **2003-08:** _____
- c) **Number of graduates/technicians** **2008:** _____ **2003-08:** _____
- d) **Product portfolio**
- Which of your products account for the largest proportion of your transaction volume? Which of your products are demanded most?
 - Did you introduce any new products in the last 5 years?
- d) **Sales markets**
- Export share and/or exports to other regions within Styria, Austria, foreign countries (share of exports in transaction Volume in %): _____
 - Does the domestic demand differ from the international demand concerning your products?

II. CO-OPERATION PARTNER

2. Who are your co-operation partners (along the value chain) in and outside the Styrian Vulkanland? How would you describe the intensity of co-operation with each of your partners? Are these interactions frequent or seldom?

<i>Who [partners/suppliers/costumers]</i>	<i>Form of co-operation/Interaction [What?]</i>	<i>How often during the last 5 years?</i>
a) Partner <ul style="list-style-type: none"> • ... • ... 		
b) Component suppliers <ul style="list-style-type: none"> • ... • ... 		
c) Costumers <ul style="list-style-type: none"> • ... • ... 		

3. Do you collaborate with training centres and/or educational institutions in and outside the Styrian Vulkanland? Are these interactions frequent or seldom?

- a) **Tertiary educational institutions** [universities and technical colleges (Karl-Franzens Universität Graz, TU Graz, FH Joanneum, FH Joanneum Bad Gleichenberg, others)]:

<i>Who [partners/suppliers/costumer]</i>	<i>Form of co-operation/Interaction [What?]</i>	<i>How often during the last 5 years?</i>
<ul style="list-style-type: none"> • ... • ... • ... 		

- b) **Secondary educational institutions** [Secondary technical college, school for tourism in Bad Gleichenberg, others]:

<i>Who [partners/suppliers/costumer]</i>	<i>Form of co-operation/Interaction [What?]</i>	<i>How often during the last 5 years?</i>
<ul style="list-style-type: none"> • ... • ... • ... 		

- c) **R&D institutions and innovation centres** [Joanneum Research, Innovation Centre Auersbach, others]:

<i>Who [partners/suppliers/costumer]</i>	<i>Form of co-operation/Interaction [What?]</i>	<i>How often during the last 5 years?</i>
<ul style="list-style-type: none"> • ... • ... • ... 		

4. Did the regional development strategy and common activities of the Styrian Vulkanland facilitate co-operation and the establishment of contacts with co-operation partners?

III. KNOWLEDGE SOURCES

5. How do you generate knowledge within your firm? How do you get access to new information and technology?

Exogenous sources of knowledge [technical colleges, universities, others]:	Endogenous sources of knowledge [employees, others]:
<ul style="list-style-type: none"> • ... • ... • ... 	<ul style="list-style-type: none"> • ... • ... • ...

6. Which source of knowledge is the most important to your firm? To what extent is the Styrian Vulkanland of importance (concerning workshops, seminars...)?

7. Do you exchange knowledge with your co-operation partners [partners/component suppliers/customers/educational institutions]? If you do, how would you describe the process of knowledge exchange [consciously/ unconsciously; formal/informal]?

<i>Who?</i>	<i>What?</i>	<i>How?</i>
<ul style="list-style-type: none"> • ... • ... • ... 		

8. How do you sensitise your employees to participate in the exchange of knowledge?

- | | |
|------------------------|-----------------------|
| a) Workshops | c) Quality management |
| b) Monetary Incentives | d) Processes |

Who is responsible for knowledge exchange within your firm?

9. Do you pursue innovative activities within your firm?

YES

- a) **How much do you spend on innovation per year?**
- b) **How did your expenditures on innovation change during the last 5 years?**
- c) **Who pursues innovation within your firm?**
 - Do you pursue innovation in collaboration with other enterprises and/or educational institutions?
 - In which areas do you use innovation and innovation within your firm

Core area	Other area
Sporadic	Continuously
 - Why do you pursue innovation? Give reasons.

NO

- a) **Why don't you pursue innovation?**
- b) **Do you think it is necessary (to your firm) to pursue innovation in future?**
- c) **If yes, do you have any plans concerning the expansion of your R&D capacity?**

IV. LABOUR FORCE

10. Where do you obtain labour from and how do you do it?

- a) Do you obtain labour mainly from inside or outside the Styrian Vulkanland?
- b) By leasing? How large is the proportion of leased labour?
- c) Public employment service?
- d) Do you obtain labour from educational institutions?

11. Which qualifications must your employees have?

- a) Which level of education is required (compulsory school, apprenticeship, university degree, others)?
- b) Which characteristics are most important to you (loyalty, experience, reliability, others)?

12. How would you evaluate the regional availability of human resources?

13. How would you evaluate the mobility of regional labour?

14. How could you prevent the migration of labour force?

V. COMPETITIVENESS

15. What is the distinguishing characteristic of your firm? Which measures do you take to stay competitive?

- Price competition
- Quality competition
- Long lasting relationships
- Innovation

16. Do you focus particular on external markets?

17. What do you do to keep your costumers satisfied?

THE REGIONAL BRAND 'STYRIAN VULKANLAND'

18. To what extent does the regional brand 'Styrian Vulkanland' influence your competitiveness within and outside the region [not at all/a little bit/very much]? How does the brand affect your sales or the entry on new markets?

19. Which impact does the regional economic offensive (focus on three core competences – quality food, handcrafts, tourism) have on your competitiveness?

20. Did the Styrian Vulkanland and its regional brand increase your competitiveness?

VI. LOCATION - STYRIAN VULKANLAND

21. Which are the advantages and disadvantages of the Styrian Vulkanland?

<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> • ... • ... • ... 	<ul style="list-style-type: none"> • ... • ... • ...

22. How would you evaluate [insufficient/sufficient/good/very good]

- a) the infrastructure?
- b) the transport connection (to Graz, Vienna, foreign countries)?
- c) the quality of life?
- d) the quality of regional educational institutions?
- e) the network of/collaboration between regional actors?
- f) the Association for the promotion of the Styrian Vulkanland?

Suggestions for further improvements:

23. How would you evaluate the institutional framework?

- a) For innovation
- b) For the foundation of new enterprises

24. How would you evaluate the collaboration between the municipalities/the Styrian Vulkanland and local enterprises? (Does your municipality support your activities?)

25. How important is the ‘Association for the promotion of the Styrian Vulkanland’ to your enterprise (on a scale of 0 to 4)?

26. How would you evaluate the potential for development of the Styrian Vulkanland?

27. How do you want the further development to be? (Do you have some special requests?)

VII. MACTOR – ACTORS AND OBJECTIVES

How important is the realization of the Styrian Vulkanland's objectives to your enterprise? Assess the importance of each of the following objectives on a scale of 0 to 4 or (if you are against the realization of the objective) on a scale of -1 to -4? [0: not important at all, 4: very important, -4: completely against]

Medium-term objectives (following 4 years)	0	1	2	3	4	-1	-2	-3	-4
The maintenance of the innovation budget within the municipalities	<input type="checkbox"/>								
Further investments in the three regional core competences	<input type="checkbox"/>								
Increase the willingness to participate in common activities	<input type="checkbox"/>								
Continuing the activity concerning local supply	<input type="checkbox"/>								
Support for the regional economy and youth	<input type="checkbox"/>								
Long-term objectives (following 15 years)	0	1	2	3	4	-1	-2	-3	-4
Extension and improvement of the living, working and economic culture	<input type="checkbox"/>								
Solving problems concerning the supply of regional jobs	<input type="checkbox"/>								
Improving the collaboration between firms and municipalities	<input type="checkbox"/>								
Sustaining the cultural landscape by promoting regional products	<input type="checkbox"/>								
Increasing the use of regional energy sources (biological gas, wood, ...)	<input type="checkbox"/>								
Project for the participation of retired people on basis of a honorary position	<input type="checkbox"/>								

ANNEX 3: DEFINITIONS AND CLASSIFICATIONS

Unemployment rate

Unemployed: Number of people announced at the public employment service who are not employed or in training.

The unemployment rate (based on the national definition) is calculated by the ratio of the unemployed to the number of people employed plus the stock of unemployed. This evaluation concept is different from the Labour-force method of the European Union, where the unemployment rate is calculated by dividing the number of unemployed by the total labour force (employees, self-employed persons and unemployed). The national definition used at the level of a Bezirk, however, is simply the share of unemployed in the stock of employed people (according to ÖIR). The regional allocation of unemployed persons results according to his/her place of residence (WIBIS STEIERMARK 2008).

Gross median income

The basis is the monthly gross income including all supplementary grants of all employees covered by the social insurance system (not included are trainees, marginal employed people and appointees). In the following, the median (and not the arithmetic average) is calculated, yielding the value of the gross median income (WIBIS STEIERMARK 2008).

ÖNACE

The ÖNACE represent an economical, statistical classification defining the economic activity of enterprises, educational institutions and others at national level. For this purpose the ÖNACE consists of a numerical, 5-digit code (STATISTIK AUSTRIA 2008).

LAU (Local Administrative Unit)

LAU is a low level administrative division of a country, province, region, or state.

LEADER+

After two completed program periods (LEADER I: 1991–1993, LEADER II: 1994–1999), the current LEADER+ constitutes a program for innovative development strategies in rural areas. The ‘Leader method’ is subject to seven specific criteria and guiding principles (for further information see <http://www.leader-austria.at/network/leaderplus>).