

The Embeddedness of small enterprises to the rural local economy of small and medium sized towns

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This paper addresses the local-regional-supra-regional orientation of small-scale farms and firms in rural areas. Due attention is given to the role of local centres (villages, towns) for the functioning of rural areas. With help of a quantified indicator spatial linkages related to sales and purchases of small enterprises are shown. Furthermore the allocation of labour to the local economy is taken into account. The degree of embeddedness of small local firms in rural areas appears to be fairly strong, which means that they play a significant role in the local economy in several ways. +

Introduction

Modern Europe has rural roots. Even nowadays, eighty per cent of Europe consists of rural areas in which 25% of the population lives. These areas are quite diverse geographically and in terms of landscape, but also in the different challenges they face. These challenges range from restructuring of the agricultural sector, remoteness, poor service provision and depopulation to population influx and pressure on the natural environment, particularly in the rural areas close to urban centres.

It appears that economies in rural areas are characterized by a wide range of economic activities (Terluin, 2001). Although the problems and difficulties of rural areas often are stressed, the role of rural towns in these areas is noteworthy and will most likely be very important in the future. As urban and rural areas are dependent on each other and as simultaneously the direct functional relationships are changing because of new technologies, rural towns can act as an intermediary. These small and medium-sized towns (with a population of 5,000-20,000) form an important component of the economic structure of countries nowadays, especially when taking into account the declining importance of the agricultural sector because of globalization and technical improvements. The towns evolved over many years to serve a range of functions – economic, social and administrative – both for their own inhabitants and the surrounding countryside (Courtney and Errington, 2000).

As stated before, 80% of Europe can be classified as rural. Within these areas agriculture plays an important role. A unique feature of the agricultural sector is its physical link to the soil conditions and therefore its strong relationship with its surroundings. Although in most rural areas the primary sector has become less important in terms of its economic weight and share in employment, agriculture and forestry are still the main land users and they play a key role in the management of the natural resources in rural areas and in determining the rural landscape and cultural heritage. In spite of its reduced share in the overall economic activities, these interdependencies mean that agriculture still has a valuable contribution to make to the socio-economic development and full realization of the growth potential of rural areas (European Communities, 2003).

Changes within the agri-food sector have had a significant impact on many small and medium-sized towns and still form a distinctive component of rural areas. Indeed, they may have an increasingly important role to play in the future diversification of the rural economy and the establishment of multifunctional agriculture. The major challenge currently facing rural countries in Europe is finding and promoting appropriate forms of economic

development to maintain and improve their social and economic vitality, as they adjust to the changing demands placed upon them by society and by the market economy (Marketowns, 2000). Small enterprises can play a key role in this new development context.

Generally the (rural) economy is largely dependent on small enterprises. In the Netherlands as a whole, almost 90% of employees work in firms with less than ten people. As larger offices often are situated in cities or highly urbanized areas, this percentage will be even higher in rural areas. With the relentless decline in employment in agricultural and other traditional rural industries, the identification and encouragement of new sources of jobs for those living in rural communities has become a key priority. Increasingly, it is believed that most of the new jobs in rural areas are going to come from new and existing small firms, not just from service sectors like tourism but also from some lighter manufacturing industries (Tarling *et al*, 1993). North and Smallbone (1996) even state that one of the most important findings from a wealth of the recent research concerned with comparing the performance of small businesses in urban and rural locations, has been that rural firms have shown a superior employment performance to urban firms (North and Smallbone, 1996).

Given the prominent position of rural areas in the economic-geographic landscape of almost all countries, it is an intriguing question how much these areas are locally or regionally integrated (in terms of linkages between local firms and their surroundings). Clearly, the position of rural centres (hamlets, villages) is at stake here.

In this paper we will focus on the role of small enterprises in small and medium sized towns located in Dutch rural areas. In our analysis we distinguish agricultural firms (further referred to as farms) and non-agricultural firms (further referred to as firms). The reason for this distinction is twofold. First of all, there are large differences between the characteristics of firms and farms and, furthermore, there are the spatial linkage characteristics of the agriculture sector related to the concerned town. For the analysis, we make use of survey information derived from the Marketowns project funded by the European Commission.¹ A large quantity of data is available for five countries, including the Netherlands, about the sales, purchases and employment of firms and farms in six different towns per country. With the help of this information, we will illustrate the differences of local embeddedness of (small) firms and farms.

¹ “Marketowns, the role of small and medium-sized towns in rural development”, is funded under Key Action 5 (Sustainable agriculture, fisheries and forestry, and integrated development of rural areas including mountain areas) of the Work Programme “Quality of Life and Management of Living Resources”. More detail can be found in Terluin *et al*, 2003.

Rural areas in the Netherlands

Settlement patterns of small and medium sized towns vary between different parts of Europe. While some of their determinants are universal - such as the economies of agglomeration - others vary. For example, in the most densely populated countries such as the Netherlands, strong national planning controls have sought to contain economic activity and housing within towns to protect the surrounding countryside. In addition, the concern on the social viability of small rural communities has generated several policy incentives in the Netherlands to protect small villages and hamlets in rural areas. As a result, rural settlements are quite diverse, while some of the smallest ones are merely “dormitory” settlements for bigger towns. In other countries, various settlement patterns are found with some very small settlements still containing a relatively wide range of economic activities (van Leeuwen and Mayfield, 2004). The Netherlands is a small and very densely populated country with a high degree of urbanization. This affects the significance and use of the countryside to a great extent. Of the overall territory of the Netherlands, 70 per cent is used as agricultural area (including roads and waterways), 13 per cent is taken up by building development and transport and 14 per cent consists of woodland and nature areas. This indicates that agriculture is relatively important in the countryside. In the rural areas, many (small and medium sized) towns also are located. Around 55 per cent of the overall Dutch population lives outside the twenty main urban agglomerations. Only a limited proportion work in the field of agriculture, and this proportion will decrease further in the future as more citizens choose to live in small towns or in the countryside. Changes in the primary sector will also affect these areas. Increasing efficiency and thus decreasing employment will cut down on the quality of life in the local community. Growing unemployment, increasing commuting and the exit of young people are examples of these effects. Environmental policy and market developments are drastically changing agricultural practices and land-use. Spatial and regional planning will have to offer sufficient scope for the establishment and expansion of agricultural business and different uses of agricultural land. This will enable farmers (to continue) to keep up with social, economic and technological developments.

Nowadays, new economic activities are developing in rural areas, such as recreation and tourism. The decrease in agricultural activity has led to a decline of service provisions in the countryside. The increase in other activities can, however, compensate for this lack of provision. The countryside, with its characteristic peace, space and local identity becomes increasingly important to urban centres and urban dwellers.

The data

As stated before, we used data derived from the European Union research project ‘Marketowns’. The Marketowns project focuses on the role of small and medium towns as growth poles in regional economic development. For this purpose, the flow of goods, services and labour between firms and households in a sample of six small and medium-sized rural towns in EU countries are measured. The countries reflect the varied conditions of the existing and enlarged European Union, viz. France, Poland, Portugal, the Netherlands and the UK (Marketowns).

In each of the five participating countries, small and medium-sized towns have been collected on the basis of three criteria. First of all, there is the type of rural area (namely agricultural, tourist and peri-urban areas) according to the employment level. Secondly, no other town with more than 3,000 inhabitants should be located in a hinterland of approximately 7 km. Thirdly, the population size of the town is taken into account when small towns and medium towns are distinguished. Table 1 shows the selected small and medium sized towns in the Netherlands.

Table 1. Selected small and medium-sized towns in the Netherlands

	Small towns (5-10,000 population)	Medium-sized towns (15-20,000 population)
Area where employment in agriculture is above national average	Dalfsen	Schagen
Area where employment in tourism is well above national average	Bolsward	Nunspeet
“Accessible” peri-urban area within daily commuting distance of metropolitan centre	Oudewater	Gemert

Source: Terluin et al. (2003)

To facilitate the determination of economic linkages of firms and households in a town, several zones around a town have been distinguished. The town-centre itself is classified as zone A, the area within a circle of 7 km around the town-centre as zone B (the hinterland of the town-centre), the area within 7 to 16 km around the town-centre as zone C, and the metropolitan centre in case of the peri-urban towns as zone D. The remainder of the province is classified as zone E, the rest of the country as zone F, the rest of the EU as zone G and the rest of the world as zone H. For each town (zone A) and the immediately surrounding countryside (zone B), data were gathered from a systematic sample for respectively farming and non-farming households, and farming and non-farming businesses using postal questionnaires and face-to-face interviews (Terluin et al, 2003).

In the Netherlands alone, 18,000 surveys were sent out to firms, farms and households of which 16% were returned and filled in correctly. Table 2 shows the usable response for the six Dutch towns.

Table 2. Usable response for firms and farms in the six Dutch towns

	Dalfsen	Schagen	Bolsward	Nunspeet	Oudewater	Gemert
	Usable Response					
Firms	125	136	150	144	126	147
Farms	87	70	64	26	81	87

Source: Terluin et al. (2003)

Embeddedness Indicators (EI)

Embeddedness emphasises on among the importance of social relations in generating trust and discouraging opportunism, also on linkages that an enterprise forms with a network of enterprises within the region. These include links, for the purpose of improving the activities of the firm, with local suppliers and customers.

Small and medium-sized towns are valuable for future rural development initiatives, because the concentration of initiatives within these settlements takes advantage of the existing economies of agglomeration and the existing networks. At the same time the benefits have the possibility (in terms of both employment and income) to spread out from these sub-poles into the surrounding countryside in a way that meets the economic objectives of sustainable rural development.

Of course, this spread of benefits into the surrounding countryside is a very interesting phenomenon. To describe the linkages of small enterprises in small and medium sized towns with the surrounding countryside and existing networks, we make use of embeddedness indicators. These indicators show the proportion of a particular economic activity (input purchases, output sales, employment, etc.) of a particular group of economic entities (all firms, all households, small enterprises, manufacturing enterprises, etc) allocated to the (local) economy. For example, the firms located within town X may derive 25% of their inputs (by value) from other businesses locally (within zone A and B), a further 50% from elsewhere in the country, 5% from elsewhere in the EU and 20% from countries outside the EU. In this case the Local Embeddedness indicator for the purchases of this town is 0.25. They may sell only 10% of their outputs to businesses or households in the locality, in which case the Local Embeddedness indicator for the sales of the town is 0.1. Taken together, and measured for a particular town, these indicators give an immediate measure of the extent to which a firms is embedded into its immediate locality or the national, European or global economy.

We explored five different embeddedness indicators (see Figure 1).

Distinguished zones	Town	7 km zone	7-16 km zone	City	Rest of the Province	Rest of the country	Rest of the European Union	Rest of the World
	A	B	C	D	E	F	G	H
Local E.I.								
Regional E.I.								
City E.I.								
National E.I.								
International E.I.								

Figure 1: The Embeddedness Indicators and their accompanying zones

First of all, we define the Local Embeddedness indicator that includes the town and the 7km zone around it, and next the Regional Embeddedness indicator including the 7-16 km zone around the town as well as the rest of the province. Furthermore, we explore the city Embeddedness indicator which includes the city if applicable (Gemert and Oudewater), the national embeddedness indicator including the rest of the Netherlands and, finally, the international embeddedness indicator which includes the rest of the European Union and the rest of the world.

Of course, all these embeddedness indicators are interesting and of importance but as we are now focussing on the role of small enterprises in small and medium sized towns, we are especially interested in the local and regional embeddedness indicator. The embeddedness indicators we focus on describe the proportion of purchases, sales and employment of farms and firms, allocated to the local and regional economy.

But which values of the different embeddedness indicators are desirable for the economy of the small and medium sized towns? When a firm or farm buys its inputs on the local market other (local) actors will have more money to spend. This can lead to new investments or to higher incomes, which local shops and other services in a town can benefit from. In turn, this leads to new investments, higher incomes or new jobs. This effect of re-circulation of spending is called a ‘multiplier effect’. Multipliers are often used in the input-output theory. From this theory we learn that the nature of the specific sectors at hand can have a significant effect on the re-circulation of spending. Multipliers vary across different sectors of the economy based on the mix of labour and other inputs and the tendency of each sector to buy goods and services from within the region. When sectors import a lot of their inputs from outside the local economy, their spending ‘leaks’ to the other region and the multiplier effect decreases. But when sectors sell their products outside the local economy, when they export them, more capital enters and the multiplier effect increases.

This means that the desirable effects originate from enterprises that have high local embeddedness indicators for their purchases and high national or international embeddedness

indicators for their sales. Furthermore, the economy will benefit from high local employment embeddedness.

We have to keep in mind that the indicator only describes the allocation of sales and purchases of the enterprises that responded to the questionnaire, and not all the enterprises within a certain town.

Embeddedness of purchases and sales of farms

Unlike firms, farms can be classified under one sector, being the agricultural sector. Some of the characteristics of this sector are relatively homogeneous, but most of them differ very much. Family-ownership and a small number of employees are general, but the required inputs can vary. Furthermore it is often thought that farms are strongly integrated in the local economy and society. Therefore we disaggregated the agriculture sector into 5 sub-sectors. For this analysis we make use of a database of 406 farms located in the six towns: 242 of them have 1-3 workers (including the owner) and 143 of them have 4-10 workers. We counted the number of persons working at the farm and not the FTE (full-time equivalents). This can affect the outcomes (and the division of firms according to their size) of the sectors with much seasonal work such as the horticulture sector.

Table 3 shows the embeddedness indicators of the purchases (P) and sales (S) of farms per sector, related to the size of the farm. ‘Group 1’ includes the farms at which a maximum of 3 people work, ‘Group 2’ the farms at which between 4-10 people work and ‘total’ includes all farms. In the table, the embeddedness indicators in bold show the two highest sales embeddedness indicators or purchases indicators for a certain sector. They indicate where most of the inputs are bought and most of the outputs are sold. The specialist livestock farms, for example, buy most of their input locally and regionally, but sell their products in the region or throughout the rest of the country.

If we look at the purchases in general we find that most of them are bought in the town and its direct hinterland (local) and in the rest of the region (regional). This holds for almost every sector.

Most of the products are sold on a regional level as well as on a national level. On average the regional part of the sales are lower than the regional part of the purchases. It also appears that both the national and the international part of the sales are higher than those of the purchases. Thus we can say that in general the purchases are more local and sales are more nationally and internationally oriented.

Table 3: Embeddedness indicators of Purchases and Sales of farms per sector according to the size of the farm

		Local	Region	City	National	International	# Farms
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		P	S	P	S	P	S	P	S	P	S	
Specialist livestock	Group 1	42	23	41	39	6	3	9	28	2	7	80
	Group 2	29	13	32	47	0	3	24	31	16	7	38
	Total	39	19	35	42	1	3	16	29	8	7	118
Mixed livestock	Group 1	47	22	41	36	2	0	10	31	0	10	73
	Group 2	55	39	36	25	1	0	8	22	0	13	45
	Total	49	29	39	34	2	0	11	26	0	11	119
Pigs/poultry	Group 1	23	14	42	42	3	2	28	34	5	8	35
	Group 2	30	18	55	39	5	25	6	18	3	0	14
	Total	31	16	44	41	2	13	19	26	4	4	49
Mixed livestock and arable	Group 1	30	23	48	40	1	1	21	14	0	22	36
	Group 2	29	24	36	25	0	0	8	31	0	1	19
	Total	38	23	52	42	0	0	8	23	2	11	56
Horticulture	Group 1	47	13	40	43	0	0	13	9	0	35	7
	Group 2	29	1	52	20	1	0	10	30	8	16	19
	Total	27	3	53	49	0	8	16	33	3	8	45
Total	Group 1	35	20	43	39	3	2	17	29	2	10	242
	Group 2	36	21	46	33	1	6	11	26	5	7	143
	Total	37	18	44	41	1	5	15	29	3	8	406

(Group 1 = 1-2 employees, Group 2 = 3-10 employees)

If we take a closer look at the sectors we see that the mixed livestock farms and the mixed livestock and arable farms sell more of their products to local and regional buyers. On the other hand the horticulture farms have a relatively high share of international sales.

When focussing on the size of the farms, there are not all that many differences, although surprisingly, small farms sell more of their products on the international market. Maybe this is because they make less use of distributive traders.

As a next step, Tables 4 and 5 respectively show the embeddedness of the purchases and the sales of farms for the small and medium sized towns. In every town between 60-80 farmers responded to the questionnaire, except in Nunspeet where we had a usable response of 20. First of all it appears that the shares of the purchases of farms in smaller towns are the highest in the town and its direct hinterland (local). In the medium sized towns, the purchases are more often made somewhere else in the region. The two agricultural towns (Schagen and Dalfsen) also tend to make most of their purchases in the region. The high share of international purchases in Group 2 of the farms in Bolsward is striking. This is due to the specialist livestock farms in Group 2, which corresponds with Table 3.

Table 4: Embeddedness indicators of Purchases of farms per town according to the size of the farm

Size Firms	Medium towns	Local	Region	City	National	Inter-national	Small towns	Local	Region	City	National	Inter-national
Group 1	Gemert	55	32	0	11	2	Oudewater	36	33	6	25	0
Group 2		31	54	3	11	1		45	44	4	6	0
Total		33	51	2	13	1		38	36	5	20	0
Group 1	Nunspeet	32	54	0	14	0	Bolsward	45	40	0	15	0
Group 2		43	33	0	23	0		37	30	0	16	17
Total		34	49	0	16	0		41	36	0	16	8
Group 1	Schagen	44	36	0	21	0	Dalfsen	32	41	0	18	9

Group 2		35	49	0	12	4		38	42	0	14	5
Total		41	42	0	15	2		35	42	0	17	7

(Group1 =1-2 employees, Group 2 = 3-10 employees)

The local embeddedness indicators for the sales are lower in general than the indicators for the purchase of farms as we saw earlier on. For the rest, the similarities are less clear. We could say that the farms in the agricultural towns sell more products in the rest of the country, and the tourist towns (Nunspeet and Bolsward) more in the region. Oudewater stands out because of its high share of international sales. This is mainly due to the sales of mixed livestock farms. For the first time there are also significant city embeddedness indicators in Gemert due to the pigs and poultry sector.

If we take the size of the farms into account, we see that smaller farms have relatively high regional embeddedness indicators.

Table 5: Embeddedness indicators of Sales of farms per town according to the size of the farm

Size Firms	Medium towns	Local	Region	City	National	Inter-national	Small towns	Local	Region	City	National	Inter-national
Group 1	Gemert	24	55	8	13	0	Oudewater	10	23	4	29	34
Group 2		19	43	17	21	0		17	24	0	11	48
Total		14	51	16	20	0		12	23	3	24	38
Group 1	Nunspeet	12	73	0	14	1	Bolsward	22	45	0	33	1
Group 2		54	40	0	6	0		20	42	0	34	4
Total		25	64	0	11	0		21	43	0	33	2
Group 1	Schagen	22	33	0	30	16	Dalhsen	26	32	0	40	2
Group 2		5	37	0	46	11		43	15	0	42	0
Total		9	42	0	39	11		34	24	0	41	1

(Group1 =1-2 employees, Group 2 = 3-10 employees)

Summarizing, we find that in general purchases of farms are more local and sales are more nationally and internationally oriented. The embeddedness of purchases and sales of the different sector is rather homogeneous. When focussing on the size of the farms, there are not many differences. When looking at the six case-study towns, it appears that the shares of the purchases of farms in smaller towns are the highest in the town and its direct hinterland (local). In the medium sized towns, the purchases are more often made somewhere else in the region. Furthermore the two agricultural towns (Schagen and Dalhsen) tend to buy most of their purchases in the region. The local embeddedness indicators for the sales are generally lower than the indicators for the purchases of the farms.

Embeddedness of purchases and sales of firms

We have information concerning 533 firms at our disposal in this analysis. In this case too, most of them are small firms. The firms are disaggregated into eight sectors of which a large share belongs to the retail or real estate sector.

If we look at Table 6, showing the embeddedness indicators for firms, at first it would appear that the outcomes are much more diverse than these of the farms.

Table 6: Embeddedness indicators of Purchases and sales of firms per sector according to the size of the firm

		Local		Region		City		National		International		#Firms
		P	S	P	S	P	S	P	S	P	S	
Manufacturing	Group 1	4	5	37	10	0	0	24	72	35	13	7
	Group 2	8	24	27	25	0	0	42	24	22	27	22
	Total	21	4	40	12	0	0	35	63	4	21	41
Construction	Group 1	23	44	47	43	3	1	26	11	1	1	34
	Group 2	23	39	47	49	1	1	23	11	5	0	29
	Total	4	10	21	45	1	2	73	43	2	0	87
Wholesale and distribution	Group 1	25	13	42	19	4	4	17	28	13	36	17
	Group 2	4	6	13	8	0	0	41	48	41	38	20
	Total	6	6	16	17	0	0	41	44	37	33	44
Retailers	Group 1	14	66	23	26	0	1	58	7	5	1	45
	Group 2	18	58	29	30	0	1	42	9	11	2	72
	Total	15	55	24	24	0	1	56	20	5	1	125
Hotels and restaurants	Group 1	92	94	8	6	0	0	0	0	0	0	4
	Group 2	62	57	31	42	7	0	0	0	0	0	11
	Total	61	55	37	45	2	0	0	0	0	0	19
Recreational, cultural and sporting activities	Group 1	72	43	13	39	1	0	14	18	0	0	17
	Group 2	38	55	48	21	0	0	13	23	1	1	4
	Total	26	25	20	15	0	0	22	60	32	0	23
Real estate, renting and business activities	Group 1	7	4	20	21	0	1	26	57	47	18	82
	Group 2	18	45	17	16	2	2	60	31	4	6	46
	Total	10	15	21	22	2	6	37	41	30	15	141
Other services	Group 1	31	27	34	20	1	3	32	50	2	1	25
	Group 2	29	68	23	14	0	1	38	13	9	4	16
	Total	21	39	34	30	0	0	44	30	1	1	47
Total	Group 1	15	17	28	23	1	1	27	44	29	16	231
	Group 2	11	28	21	18	0	1	41	31	27	22	222
	Total	11	16	25	28	0	1	52	42	11	12	533

Also for the firms, the region is relatively important both for purchases and for sales. Furthermore, the local embeddedness indicators for the sales are relatively high in comparison to the local sales embeddedness indicators of the farms, which are much lower. Of course most of the agricultural products first need to undergo processes before they are consumable. Milk, for example, is often transported to milk factories located in the region. We also see that the national embeddedness of the purchases is relatively high in comparison to the purchases of the farms. This also accounts for international embeddedness. When we look at the international indicators of the firms, the purchases are higher than the sales, whereas for the farms this is the other way around. In general the sales and purchases of firms are more dispersed over the different zones than those of the farms.

The firms that buy and sell most of their products in the town and its direct vicinity are hotels and restaurants and firms linked to recreational activities. Especially the smaller hotels and restaurants have very high local Embeddedness indicators. The somewhat larger enterprises

are, apart from the town, also oriented towards the rest of the region. Retail enterprises buy most of their merchandise from the rest of the country as well as in the rest of the region, but they sell most of it locally; this is especially valid for the smaller firms. The wholesale and distribution sector has high national and international embeddedness indicators and buy most of their products directly from the producer. When focussing on the smaller Group 1 firms, however, the purchases, and to a lesser extent, the sales are allocated locally. Also the manufacturing sector and the real estate enterprises are relatively strongly integrated on a national and international level but in this case the firms with 4-10 workers have higher local embeddedness indicators, whereas those of the small firms are comparatively low.

Generally, the smaller firms have higher local and regional embeddedness indicators for their purchases and lower national indicators than other firms. The embeddedness of their sales in the rest of the country is relatively high. The Group 2 firms sell a larger share of their output on a local level than on a regional level.

Table 7: Embeddedness of Purchases of firms (%) per town according to the size of the firm

Size Firms	Medium towns	Local	Region	City	National	Inter-national	Small towns	Local	Region	City	National	Inter-national
Group 1	Gemert	19	16	3	18	44	Oudewater	13	29	2	25	32
Group 2		3	3	1	66	27		13	27	1	51	8
Total		8	10	1	56	25		6	12	1	75	6
Group 1	Nunspeet	14	22	0	55	9	Bolsward	12	34	0	40	13
Group 2		6	14	0	25	55		13	31	0	43	13
Total		10	29	0	36	25		9	34	0	44	12
Group 1	Schagen	15	40	0	38	7	Dalfsen	31	23	0	42	5
Group 2		33	35	0	26	7		7	42	0	34	17
Total		26	44	0	24	6		22	48	0	25	6

When looking at the embeddedness indicators for the six towns, the former conclusion about the relatively high local and regional embeddedness of the purchases of small firms is confirmed (see Table 7). The weak embeddedness of small firms on a national level only applies to the two urban towns, Gemert and Oudewater. But in these towns the international Embeddedness indicators for small firms is extremely high. This is mainly due to the wholesale and real estate enterprises located there.

In general the largest shares of purchases are obtained from the rest of the country. For the medium sized towns, the international market is of importance, whereas for the small sized towns, it is the regional market. Especially the two agricultural towns, Schagen and Dalfsen are more strongly integrated in the town and the rest of the region.

This also accounts for the sales of the agricultural towns as Table 8 shows. As stated before, on average the local embeddedness indicators of the sales are much higher than those of the purchases. This time also the local sales embeddedness within Bolsward is quite strong. This

could be related to the fact that Bolsward is a tourist town with a lot of retail enterprises including hotels and restaurants.

Table 8: Embeddedness of Sales of firms (%) per town according to the size of the firm

Size Firms	Medium towns	Local	Region	City	National	International	Small towns	Local	Region	City	National	International
Group 1	Gemert	23	24	9	23	22	Oudewater	8	21	1	53	17
Group 2		20	11	1	6	63		26	16	4	48	6
Total		20	16	5	11	48		6	36	2	47	10
Group 1	Nunspeet	18	31	0	45	6	Bolsward	41	33	0	19	7
Group 2		18	8	0	53	21		35	33	0	25	6
Total		20	33	0	36	11		23	22	0	47	8
Group 1	Schagen	36	32	0	24	9	Dalhsen	21	19	0	48	12
Group 2		45	35	0	16	4		44	26	0	21	9
Total		47	29	0	21	2		16	15	0	67	2

As for the sales (and purchases) of firms, it appears that the national embeddedness indicators are generally very high. Here too, the international embeddedness of sales in Gemert, and to a lesser degree in Nunspeet and Oudewater, is relatively strong.

When we focus on the small firms, we find that their products are more often sold on a regional and a national level. The other firms sell more products on a local and international level.

Embeddedness of employment

Of course, purchases and sales are of importance to a certain economy but what is more important to the community concerned, is the employment rate. Clearly, a relationship exists between the amount of local purchases and the number of jobs but there are a lot of other factors effecting employment. In this paper we will not discuss these factors but focus on the Embeddedness of different kinds of farms and firms concerning their workforce.

When looking at the embeddedness indicators of the farms, it appears that the values are rather homogeneous, just as for the sales and purchases. Most of the workers of the farms live in the town itself or in the 7 km hinterland around it. From the data behind these figures we learn that actually most workers on 61% of all farms (including the owner and its family), live in zone B where the farm is located as well. This especially counts for group 2 farms with between 3-10 workers. The other workers live in the rest of the region; in the case of these farms they all live in zone C (the zone within 7-16 km around the town). The horticulture sector is relatively more dependent of its workers living in this zone.

Table 9: Embeddedness indicators (%) of employment of farms per sector according to the size of the firm

		Local	Region	City	National	International	# workers	#Farms
Specialist livestock	Group 1	88	12	0	0	0	123	76
	Group 2	87	13	0	0	0	117	37
	Total	88	12	0	0	0	249	113
Mixed livestock	Group 1	91	9	0	0	0	116	65

	Group 2	83	17	0	0	0	109	44
	Total	87	13	0	0	0	271	110
Pigs/poultry	Group 1	78	22	0	0	0	45	29
	Group 2	96	4	0	0	0	53	14
	Total	88	12	0	0	0	106	43
Mixed livestock and arable	Group 1	85	15	0	0	0	54	35
	Group 2	96	4	0	0	0	47	18
	Total	86	14	0	0	0	133	54
Horticulture	Group 1	42	58	0	0	0	12	7
	Group 2	93	7	0	0	0	82	16
	Total	77	23	0	0	0	222	42
Total	Group 1	86	14	0	0	0	373	226
	Group 2	87	13	0	0	0	511	139
	Total	85	15	0	0	0	1061	389

The employment embeddedness indicators of the firms are also quite comparable. Again most of the workers have their residence in the town and its direct hinterland, this time both in zone A and in zone B. Especially the smallest firms have high local embeddedness indicators but also the indicator values of group 2 are higher than average. The rest of the workers live in the rest of the region and some of them in the rest of the country. Especially the wholesale and real estate sectors have fewer workers living in the local area and relatively more living in the rest of the region and in the rest of the country. This does not apply to the smallest firms, but is does apply to group 2 and the rest of the firms.

Table 10: Embeddedness indicators (%) of employment of firms per sector according to the size of the firm

		Local	Region	City	National	International	# Workers	# Firms
Manufacturing	Group 1	100	0	0	0	0	18	12
	Group 2	65	34	0	1	0	169	25
	Total	63	35	0	2	0	293	50
Construction	Group 1	94	6	0	0	0	85	55
	Group 2	75	23	0	2	0	248	43
	Total	65	31	1	3	0	629	129
Wholesale and distribution	Group 1	85	15	0	0	0	41	25
	Group 2	62	27	2	8	1	146	23
	Total	59	33	1	6	1	311	59
Retailers	Group 1	79	19	0	2	0	110	63
	Group 2	73	25	0	1	0	503	92
	Total	74	25	0	1	0	798	164
Hotels and restaurants	Group 1	67	33	0	0	0	6	4
	Group 2	73	27	0	0	0	98	14
	Total	67	33	0	0	0	181	23
Recreational, cultural and sporting activities	Group 1	89	8	3	0	0	36	25
	Group 2	74	20	0	6	0	70	10
	Total	73	22	1	3	1	143	37
Real estate, renting and business activities	Group 1	80	16	1	1	1	196	108
	Group 2	56	33	2	10	0	293	53
	Total	57	32	2	9	0	706	176
Services	Group 1	73	25	0	2	0	55	29
	Group 2	80	19	0	1	0	129	26
	Total	67	28	0	5	0	323	66
Total	Group 1	83	15	1	1	0	550	324

	Group 2	69	27	1	4	0	1679	290
	Total	65	30	1	4	0	3425	718

If we compare the indicator values of the farms and firms, we find that in general the local Embeddedness indicators of the firms are lower than the indicators of the farms. However the extent of local employment embeddedness of the smallest enterprises are comparable. Also the total regional embeddedness indicators are of the same size. The rest of the firms (excluding group 1), have more workers living in the rest of the region and some even live in the rest of the country compared to the farms.

Table 11 shows the employment embeddedness indicators for the farms located in the different towns. It appears that the farms in medium sized towns have higher local indicator values. Furthermore this Table confirms an earlier observation that the smallest firms have the highest local indicators.

Table 11: Embeddedness indicators of employment (%) per town according to the size of the farm

Size Farms	Medium towns	Local	Region	City	National	Inter-national	Small towns	Local	Region	City	National	Inter-national
Group1	Gemert	88	12	0	0	0	Oudewater	90	10	0	0	0
Group 2		98	2	0	0	0		84	16	0	0	0
Total		93	7	0	0	0		87	13	0	0	0
Group1	Nunspeet	97	3	0	0	0	Bolsward	86	14	0	0	0
Group 2		76	24	0	0	0		75	25	0	0	0
Total		88	12	0	0	0		80	20	0	0	0
Group1	Schagen	85	15	0	0	0	Dalfsen	81	19	0	0	0
Group 2		81	19	0	0	0		90	10	0	0	0
Total		75	25	0	0	0		87	14	0	0	0

The local embeddedness indicators of the firms are lower than the indicators of the farms but they are still the most important ones. The regional indicators are slightly higher, especially for the smaller firms. Again the firms in the medium sized towns have more workers living in the town than the smaller towns have. The smallest firms have relatively more local people employed.

Table 12: Embeddedness indicators of employment (%) per town according to the size of the firm

Size Firms	Medium towns	Local	Region	City	National	Inter-national	Small towns	Local	Region	City	National	Inter-national
Group1	Gemert	85	11	3	1	0	Oudewater	82	18	0	0	0
Group 2		72	24	2	0	2		60	30	2	8	0
Total		70	25	3	2	1		60	30	2	8	0
Group1	Nunspeet	84	15	0	1	0	Bolsward	73	21	0	3	2
Group 2		71	25	0	3	1		72	27	0	1	0
Total		69	28	0	2	0		64	32	0	3	0
Group1	Schagen	79	19	0	2	0	Dalfsen	87	13	0	0	0
Group 2		66	29	0	5	0		56	38	0	6	0
Total		68	28	0	4	0		60	35	0	5	0

To summarize, we find that the Embeddedness indicators of the farms are rather homogeneous. Most of the workers of the farms live in the town itself or in the 7 km hinterland around it. This counts especially for group 2 farms with between 3-10 workers. The other workers live in the rest of the region. Also the employment embeddedness indicators of the firms are quite comparable. Again most workers of the firms have their residence in the town and its direct hinterland. The smallest firms have relatively high local embeddedness indicators but also the indicator values of group 2 are higher than the average values. The rest of the workers live in the rest of the region and some of them in the rest of the country. For both farms and firms it appears that local indicators in medium sized towns have higher values.

Differences between firms and farms

Now that we have examined the proportions of purchase and sales activities of firms and farms allocated to several zones within the economy, we are able to look for similarities and differences between the two kinds of enterprises.

First of all, it appears that the farm embeddedness indicators are homogeneous when different sectors, different sized farms, or different towns are taken into account. The purchases mostly take place on a local or regional level and the sales on a regional or national level. Furthermore the purchases and sales are rather equally distributed among the different spatial zones.

The Embeddedness indicators of the firms are much more diverse. They are not equally distributed among the zones but more concentrated on certain areas. In general the regional and national indicators of the purchases are relatively high. The sales are more often located in the towns (locally) or in the rest of the country. If we take into account the size of the total embeddedness indicators, we can state that the farms are more locally and regionally embedded and the firms more national and international.

When focussing on the size of the enterprises it seems that smaller farms sell a relatively high share of their products on the international market compared to larger farms. This is true especially for mixed livestock and arable farms as well as for horticulture farms. Furthermore, the regional embeddedness indicators for the sales of the small farms are higher in general. This also applies to the small firms, which have high indicators for the rest of the country. While the purchases of small firms are lower on a national level, their inputs are more often more local.

By far most of the workers of both farms and firms live in the locality. Still the local embeddedness values of firms are lower than those of the farms. However the extent of local employment embeddedness of the smallest enterprises are comparable. Also the total regional embeddedness indicators for the small enterprises are of largely the same size. The rest of the firms (excluding group 1) have more workers who live in the rest of the region or sometimes in the rest of the country, compared to the farm workers.

Conclusions

In the introduction, we argued that small and medium-sized towns form an important component of the economic structure of countries nowadays. Furthermore, in general, the (rural) economy is largely dependent on small enterprises. In the Netherlands as a whole, almost 90% of employees work in firms with less than ten people. Increasingly, it is believed that most of the new jobs in rural areas are going to come from new and existing small firms, not just from service sectors like tourism but also from some lighter manufacturing industries. In the present study we have especially focussed on the local embeddedness of sales and purchases of firms and farms as well as on the local embeddedness of their workforces. To do so, we assessed so-called embeddedness indicators that show the proportion of an economic activity of a group of economic entities allocated to the (local) economy.

We also used analytical frameworks concerning multiplier effects, which imply that when sectors import a lot of their inputs from outside the local economy, their spending 'leaks' to the other region and the multiplier effect decreases. But when sectors sell their products outside the local economy, when they export them, more capital enters and the multiplier effect increases.

If we focus first on the purchases, it appears that local embeddedness indicators of farms are higher than those of firms. Yet there are some exceptions such as the hotels and restaurants, the recreational sector and the real estate sector, which buy most of their inputs locally. As most of the firms obtain their purchases from the rest of the country, it means that their spending leaks out of the local economy. On the other hand, they also sell most of their output on a national and international level, which leads to a flow of capital to the local economy.

As the smaller firms have higher local embeddedness indicators for their purchases, their activities can improve the local economy more than the larger firms can. Of course we have to keep in mind that we talk about proportions of spending and not about absolute numbers.

The importance of small enterprises to the local economy and society is also due to their contribution to local employment. From our results, we learn that some employees of both

farms and firms live in the region, but most of them in the central town. Again the local embeddedness indicators of the smallest enterprises are the highest.

In summary, we may conclude that farms are more integrated in the local economy than firms are. But more importantly, we may conclude that smaller enterprises, both farms and firms, have a higher local embeddedness than larger enterprises and thus are of significant importance to the local economy.

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