

HOW DO EUROPEAN FIRMS COOPERATE?

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ABSTRACT

This paper presents the existing state of cooperation issues among European manufacturing firms. We have conducted a survey within several European countries and asked their manufacturing firms with at least 20 employees if they are keen to cooperate with other firms and other institutions in the field of R&D with universities and other research institutions, R&D with other firms (customers and suppliers excluded), production (manufacturing) area, purchasing area, service area / sales area / distribution area, education and training area. The authors present results and interpret the cooperation patterns in different countries.

Keywords: production, R&D, cooperations, survey

1. INTRODUCTION

Modern business environment characterized by high competitiveness and frequent turbulences make firms aware on the benefits and outcomes of possible cooperative agreements. The ever growing amount of new knowledge and birth of new technologies make firms specialize in order to achieve excellence in at least one specific area. OEMs transfer their activities to their suppliers. The knowledge is distributed among industries, but there is a need for interdisciplinary approach in new product and service development. This approach can only be achieved by linking firms with other actors. We are surrounded with new business forms, such as business networks, technological networks, industrial clusters, platforms, virtual organizations, living laboratories etc. The actors in this business forms have all identified a need to cooperate with other partners. There are also different areas where firms cooperate with other actors. Firms can cooperate in the area of R&D, manufacturing, purchase, sales, distribution, education, training, ICT issues, marketing etc. [1].

2. METHODOLOGY

Presented data on cooperation issues is a result of European Manufacturing Survey. The European Manufacturing Survey (EMS) was conducted in 2003/2004 as a pilot survey in nine European countries. The survey covers Austria, Croatia, France, Germany, Great Britain, Italy, Slovenia, Switzerland and Turkey. In total 2249 firms answered questions concerning manufacturing strategies, the application of innovative organizational and technological concepts in production and questions of personnel deployment and qualification. In addition, data on performance indicators such as productivity, flexibility, quality and returns was collected. The responding firms present a cross-section of the main manufacturing industries. Producers of rubber and plastics are represented by 11 percent, producers of metal works by 27 percent, mechanical engineering by 31 percent and electrical engineering by 10 percent. This paper will provide characteristics of cooperative behavior of manufacturing firms in six European countries: Spain, Germany, Austria, Switzerland, Croatia and Slovenia in six different areas:

- R&D area with universities and other research institutions,
- R&D area with other firms (customers and suppliers excluded),

- production (manufacturing) area,
- purchasing area,
- service/sales/distribution area and
- education and training area.

3. COOPERATION WITHIN SPECIFIC FIRM AREAS

A special focus is on R&D cooperation between firms and R&D institutions and with other firms, also competitors (e.g. like in industrial clusters). Why are firms cooperating in R&D area with universities? There are several reasons according to Veugelers and Cassiman [2, 3]:

- Since universities are no direct competitors in the output markets of the collaborating firm, not being able to appropriate exclusively the benefits from the new know-how generated is not an issue for firm-university cooperation, as it is in cooperation among firms competing in output markets, unless the know-how would leak out to competitors indirectly through common partners.
- Science institutions offer new technical knowledge which is mainly needed in innovation activities oriented towards developing new technologies and for products very new to the market. These innovation activities take place in the early stages of the innovation process characterized by high technological uncertainty and still low demand for the outcomes of innovation activities [4].
- Given the specific characteristics of scientific knowledge, R&D cooperation between universities and industry is characterized by high uncertainty, high information asymmetries between partners, high transaction costs for knowledge exchange requiring the presence of absorptive capacity, high spill-overs to other market actors (i.e. a low level of appropriation of benefits out of the knowledge acquired), and, restrictions for financing knowledge production and exchange activities due to risk-averse and short-term oriented financial markets.

The results show that almost half of firms in each country cooperate with R&D institutions. That was quite a surprising finding as other studies show lower numbers. A more in-depth survey is needed to find out in what kind of cooperative agreement in R&D area firms engage in with R&D institutions.

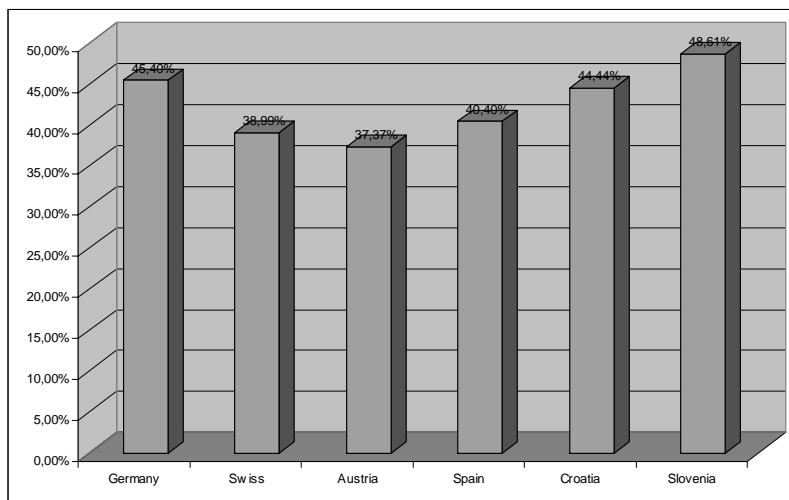


Figure 1. R&D cooperation with R&D institutions.

It is no surprise that the percentage of firms cooperating in R&D area with other firms is lower than in case with R&D institutions. Approximately one third of firms admitted this cooperation. The only exception is Slovenia with a bit higher rate. This can be a consequence of the fact that majority of surveyed firms were a part of some kind formal network organizations that were promoted in Slovenia at the beginning of this century (e.g. industrial cluster, technological platforms). We could conclude

that this formal network business forms lead to a higher cooperative behavior in R&D projects (Figure 2).

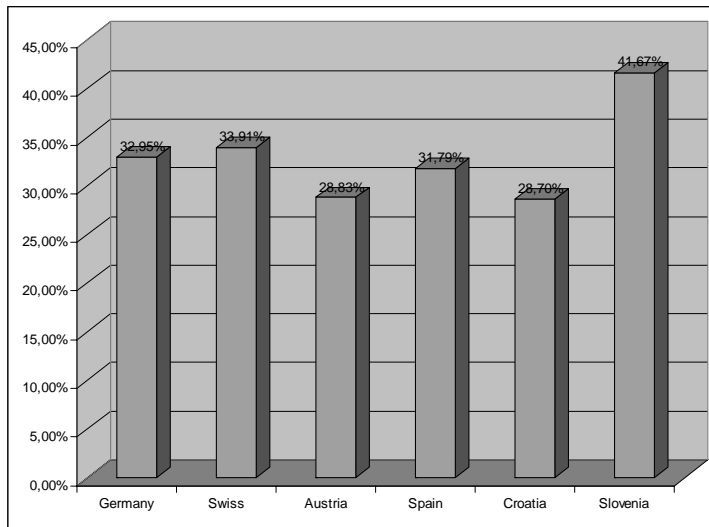


Figure 2. R&D cooperation with firms.

Production cooperation covers many different possibilities and reasons for it: production of new product prototypes (result of R&D cooperation with other firms), exchanging free machine capacities, outsourcing a part of production to partners (lack of knowledge, equipment, overloaded capacities), joint production and assembly with suppliers or even customers (OEMs) etc. There are quite substantial differences in production cooperation among countries (Figure 3). In Western countries approximately one third of firms cooperate with other firms in production activities, while the percentage in Croatia and Slovenia is quite higher. This can be due to the fact that a lot of firms in these two countries are suppliers and they cooperate with domestic and mostly foreign OEMs.

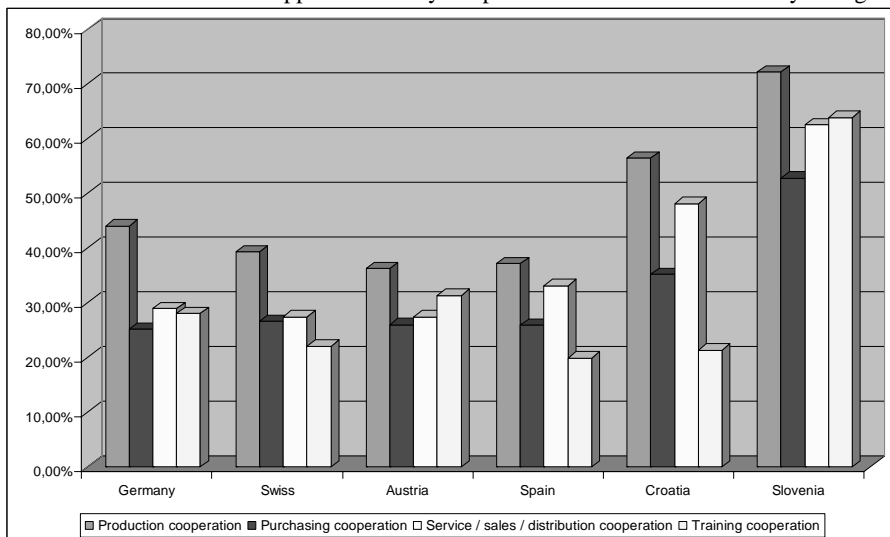


Figure 3. Production, purchasing, service-sales-distribution, education-training cooperation.

Similar story as with production cooperation can be seen in three other cooperation areas: purchasing, service-sales-distribution and education-training cooperation. The overall impression is that firms in Western countries are less keen to cooperate than in Croatia and Slovenia. Especially surprising is the

low level of joint purchasing cooperation. It is widely acknowledged that joint purchase of input materials, raw materials (e.g. steel) together with other firms (even competitors) can be much more cost effective than single purchase, where you can hardly bargain good prices and delivery dates with strong suppliers. In the sales area firms are also not using enough joint mechanism to penetrate and conquer new markets with their products and services. Especially, small and medium sized firms should be aware that isolated market approach could be much harder than sales relationships with other (bigger, more established) firms. One could also conclude that firms do not look for a help of agents in sales, service and distribution area, meaning that they want to control the whole value chain by themselves. We can argue that this is too demanding for many, especially smaller firms that have a lack of knowledge, finance and other resources. Training and education cooperation is also quite low. A lot of bigger firms have internal training and education processes, tailored to their needs. Joint training can also be seen as knowledge spill-over process that can threaten firm's competitive advantage.

4. CONCLUSION

Some general findings of our research, including geographical distances between partners, formality of cooperation and number of partners, were:

- German manufacturing firms like to cooperate with many partners, but in a very formal way. They like to cooperate with other actors within national borders, while at the same time they show tendency for international cooperation (especially in sales).
- Switzerland and Austria are extremely similar. Their manufacturing firms show less cooperation activities than firms in other countries. But when they engage in cooperation they like to work with several partners, where cooperative agreements can be formal or informal. Both countries are very internationally oriented.
- Croatia and Slovenia are also quite similar. They have the highest share of firms that cooperate with other actors. Their firms prefer bilateral agreements that are mostly informal. Slovenia is very internationally oriented, while Croatia is still looking to become (joining EU will certainly help their firms).
- Results of the survey for Spanish manufacturing firms were probably the most interesting results of all countries. On average approximately one third of Spanish manufacturing firms cooperates in all six areas. Exception is education and training where only one of five firms looks for partners. Looking at the total picture Spain was among the countries where their firms do not cooperate extremely often (only Austria had a slightly lower percentage). But when Spanish manufacturing firms engage in cooperation they prefer bilateral cooperative agreements and are reluctant to cooperate with more than one partner. And what is even more interesting, even within this bilateral agreements their cooperation is mostly very formal (especially in R&D area and sales). This is not the end of interesting findings. Spain was also the only country where regional cooperation in some cooperation areas prevails above national and international cooperation (R&D, production and education cooperation).

A more in-depth analysis of the survey will be made in the future, where size of firms, level of R&D activities and other characteristics will be considered. Nevertheless, these results already show a very good picture of cooperation behaviour in selected European manufacturing firms. This analysis can help each firm to find out what are the basic characteristics of domestic and foreign firms and other actors when it comes to cooperation.

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