

Competition and cooperation in the Lombardy Higher Education system

Seeber M.¹, Agasisti, T.², Montanari², C., Catalano G.², Lepori B.¹

¹Centre for Organizational Research, University of Lugano, Switzerland, marco.seeber@usi.ch

² Department of Management, Economics & Industrial Engineering, Politecnico di Milano, Italy

Abstract submitted for the Science, Technology and Innovation Indicators Conference 2011, Rome, 7th – 9th September 2011

1 Introduction

The article aims at understanding the rationales of cooperative and competitive relationships between universities across different competitive domains. Education and research activity will be considered as distinct “competitive arenas”. According to the Organizational ecology niche theory, competition between organizations derives from occupying similar position in the resources space (Hannan & Freeman, 1989). However the same space also represent the background of cooperative relations between rivals and the outcome of niche overlap is often uncertain (Barnett, 2006). We want to test two main hypothesis that follow from the literature: that cooperative relations will be more common between organizations that compete also in other domains (Ingram & Yue, 2008)(Lomi & Pallotti, Forthcoming); that the likelihood of competitive and cooperative relationships is influenced by the perceptions that the actors have of a ‘shared identity’ (Ingram & Yue, 2008).

The analysis will be developed on the Higher Education (HE) system of Lombardy, the largest Italian region, which counts 9 million inhabitants and over 200 thousands HE students. Empirical evidences will be provided by the Eumida dataset (a large survey on European HEIs) and the data collected directly from the universities; moreover, a survey will be developed to collect information on the perceptions of the relevant actors.

2 Theoretical Frame

2.1 Cooperative and competitive relationships between organizations

Literature foresees different possible behaviors of organizations sharing a similar resource space. Many theories, and empirical evidence, support the idea that organizations whose survival depends on a similar set of resources will compete. The theory of density dependence argues that competition rises with the density of organizations in the same space of resources, reducing the rate of founding of new institutions and increasing failures of existing ones (Carroll & Hannan, 2000). The concept of structural equivalence in the network analysis describes actors that have similar relations with other actors, and predicts competition for the same position in the network (Burt, 1992). More nuanced conclusions emerge from theory of resource partitioning, according to which the competition for the central position in the resource space leaves room for the emergence of smaller specialized organizations in the periphery, and may give birth to a symbiotic equilibrium with generalist bigger organizations in the center (Carroll, 1985). Strategic group literature regroups organizations in the same industry by the kind of strategy they adopt; similarity may spur competition either cooperation depending on the perceptions of the actors, and how they conceive their akin firms (Hoskisson, Hitt, Wan, & Yiu, 1999).

Ingram and Yue identify three cases in which organizations occupying the same niche may develop cooperative relations (Ingram & Yue, 2008). In the first case (symbiosis) organizations are not completely competitors, in the sense that they operate also in other arenas where they are not competitors; the competitive context makes them knowing each other and favors cooperation in the non-competitive contexts. In case 2 (growth commensalism) organizations cooperate to increase the space of resources to which they are both linked. Cooperation may take the form of collusion; while mutual forbearance occurs when they meet in multiple markets where they have different stakes and they avoid intense competition to allow the other exploit its key market. Growth commensalism is strictly connected to sharing information because similar organizations own the knowledge that is relevant to you. The last case (exclusion commensalism) occurs when two competitors cooperate to protect the resources from a third competitor.

The approach of the strategic group theorist focuses on the structure of the industry and the position of the organization in order to understand when organizations cooperate (Hoskisson et al., 1999). But this view is not able to explain why, at equal conditions, in some cases cooperation emerges and in others it does not. Ingram and Yue (2008) emphasize the perceptions of the actors over structure and position; competitors will be more likely to cooperate when they share a common identity, i.e. when they are linked by affective relationships and/or they believe to belong to the same 'group' facing a common competitor (ingroup-outgroup dynamics).

2.2 Universities as competitive and cooperative organizations

Despite the limitations in the development of universities as full strategic actors, still the increasing financial need and the increasing importance of attracting financial resources have spurred the emergence of stronger academic leaderships and strategic behaviors to attract funding and increase effectiveness (Seeber, forthcoming). A large literature has emerged studying the competitive relations of universities for the attraction of resources for research and in quasi markets for students. Universities are multitask organizations that operate in different competitive arenas, namely teaching, research activity and third mission, and correspond to the definition of spatial multipoint competitors, i.e. organizations competing in different social and physical spaces (Elchanan, Sherrie L. W., & Maria C., 1989)(Haveman & Nonnemaker, 2000). Several studies demonstrate that cooperation is more likely among organizations competing in multiple domains, thus this paper analyses the connections between competitive and cooperative relationships between universities.

The universities of Lombardy are examined; Bachelor degree education and research activity are considered as different competitive domains. These domains differ as to the regional, national or international orientation, as well as to the expected level of cooperation and competition. Bachelor students represents an important source of funding; we expect this market to be mostly regional based and competitive, because universities generally do not need external competences and provide courses with in-house expertise. Research is based on competitive as well as cooperative relations; two activities related to research can be analyzed: Doctoral education and research projects. Doctoral education is not a source of funding, rather a source of prestige and the implicit competition is to attract the best minds; given its strong connection with research activity, we expect to find mostly cooperative relationships and national- international orientation. Research projects are often developed in the context of research grant competitions, which imply both cooperative relations with project partners and competitive relations with other project proposals.

Consistently with the literature (Lomi & Pallotti, Forthcoming), we want to test the hypothesis that cooperative relationships are favored when universities meet in multiple social and geographical locations and that competition at one level may coexist with collaboration at another level (Baum & Korn, 1996).

Thus, we expect to find that cooperative patterns in research will be influenced by the competitive relationships existing in the graduate market: i.e. universities competing in the graduate market will be more likely to cooperate in common research fields.

Then, we want to deepen the perceptions of the actors versus industrial characteristics (and institutional factors), and how they interplay in order to stimulate competitive either cooperative relations. We expect, for instance, cases of universities that are similar in terms of expected cooperation according to the structure of the industry but that evolve differently because of the different underlying perceptions of the actors.

3 Data sources

The analysis will use quantitative and qualitative data.

The Eumida database provides some basic information to describe the universities in terms of staff, students, funding and degree of internationalization.

A matrix containing the web-links between the Lombardy universities will give a basic outlook on the regional Higher Education network.

Data collected by the ministry and by the evaluation agencies¹, as well as the institutional websites and databases will be used to further specify the disciplinary and geographical specialization of the universities. It will be specified how they are represented in the different competitive domains: where students and resources come from, the composition of the Doctoral collegium², the members in the research project proposals (PRIN program³).

Perceptions of the actors as to their main competitors and partners will be collected through an on-line survey directed to faculty deans and Doctoral courses coordinators.

4 Empirical tests

Competition will be structured around geographical and product spaces, being products identified by the discipline orientation of the course. University will be positioned in a competitive map according to the geographical position and the teaching supply.

Cooperative links will be based on the composition of the doctoral collegium and PRIN projects (example: intensity of cooperative link= n° members from other universities in Lombardy/ total n° members).

First, we will compare the competitive map with the actual level of cooperation and verify the first hypothesis, that universities competing in multiple spaces will be more likely to cooperate.

¹ <http://statistica.miur.it/>; <http://nuclei.cnvsu.it/>

² <http://dottorati.cineca.it/>

³ <http://prin.miur.it/>; <http://datiprin.cineca.it/>

Second, we will confront the expectation of cooperative relations according to the industry structure versus the perceptions, and the measured relationships.

References

- Barnett, M. L. (2006). Finding a working balance between competitive and communal strategies. *Journal of Management Studies*, 43, 1753–1773.
- Baum, J. A. C., & Korn, H. J. (1996). Competitive dynamics of interfirm rivalry. *Academy of Management Journal*, 39, 255-291.
- Burt, R. S. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Carroll, G. R. (1985). Concentration and specialization: Dynamics of niche width in populations of organizations. *American Journal of Sociology*, 90(6), 1262–1283.
- Carroll, G. R., & Hannan, M. T. (2000). *The demography of corporations and industries*. Princeton, NJ: Princeton University Press.
- Elchanan, C., Sherrie L. W., R., & Maria C., S. (1989). Institutions of higher education as multi-product firms: Economies of scale and scope. *The Review of Economics and Statistics*, 71(2), 284-290.
- Hannan, M. T., & Freeman, J. (1989). *Organizational ecology*. Cambridge, MA: Harvard University Press.
- Haveman, H. A., & Nonnemaker, L. (2000). Competition in multiple geographic markets. the impact of growth and market entry. *Administrative Science Quarterly*, 45, 232-267.
- Hoskisson, R. E., Hitt, M. A., Wan, W. P., & Yiu, D. (1999). Swings of a pendulum: Theory and research in strategic management. *Journal of Management*, 25, 417–456.
- Ingram, P., & Yue, L. Q. (2008). Structure, affect and identity as bases for organizational competition and cooperation. *The Academy of Management Annals*, 2, 275-303.
- Lomi, A., & Pallotti, F. (Forthcoming). Relational collaboration among spatial multipoint competitors. *Social Networks*,
- Seeber, M. (forthcoming). Efficacy and limitations of research steering in different disciplines. *Studies in Higher Education*,