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Roles of the coepetitive networks in the local business life

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Abstract

The paper scrutinizes empirically on one hand the structural characteristics of the coepetitive networks of SMEs, on the other hand analyzes the effects of the coepetitive networks on economic development at nodal regional level. Altogether three Hungarian coepetitive networks were found and examined longitudinally embracing 127 entrepreneurs, thus 127 interviews and 127 questionnaires were conducted as well. The primary datasets were investigated by combining the methods of network science and spatial econometrics. The key findings show that the coepetitive networks determine significantly the new jobs creation and pay raise, in general, the accumulation of territorial capital.

Keywords: regional economic development, Hungarian coepetitive networks of SMEs, scale-free property, focal firm.

JEL Classification: L14, O18, R10, R11.

Introduction

The paper theoretically and empirically concentrates on scrutinizing the Hungarian coepetitive networks of SMEs (hereinafter coepetitive networks) and their effects on the regional economic growth. The coepetition has occurred as a new category in the terminology system of social sciences. It refers to the special dynamic interplay between same firms in which the competitors collaborate and compete with each other simultaneously so as to reach higher profit [Bradenburger-Nalebuff 1996; Czernek, Czakon 2016]. By applying coepetition,

the market automatism do not disappear from economic structure. The competition remains in hegemony in the economic setting, but in only some place of business life the rivals collaborate to achieve effectively their purposes.

Moreover, well-known fact that every cooperative network has territorial extension hence a territory which is covered by a network has to be named as a *nodal region* [Thilenius, Havila, Dahlin, Öberg 2016]. Since economic networks, economic relationships and the territorial concentration of economic activities create nodal region, it must be scrutinized by combining toolkits of network science and spatial econometrics. Taken together, the paper thus describes impacts of the cooperative networks on the economic development of nodal regions (hereinafter: regions). Spatial extensions of the cooperative networks are illustrated by maps in the paper. The paper is organized as follows.

In the first chapter, on one hand the theoretical underpinning and empirical overviews of the SMEs' networking is demonstrated and, on the other, short Hungarian socioeconomic background is presented as well. After that, I show how the network dataset is collected and analyzed. Fundamentally, three Hungarian cooperative networks were mapped locating on (1) Tihany-Budapest, (2) Nyíregyháza and (3) Budapest including 127 entrepreneurs all together. The study combines quantitative and qualitative methods of the network science as well in order to understand deeply the architecture and impacts of the cooperative networks in the real business life. Actually, interviews and questionnaires are conducted as well with every entrepreneur thus 127 sociological, semi-structured interviews and 127 questionnaires are studied. The last chapter deals with how the cooperative networks have impacted on the Hungarian regional economic development.

In the next theoretical chapter the paper demonstrates the functions of inter-firm relationships in the business life. After that, the focus of the paper is narrowed down analyzing the cooperative network that is a new type of the business network.

1. Theoretical underpinnings and empirical overviews

Empirical results of the concept of territorial capital suggest [Jóna 2015] that the Hungarian regional economic growth and development have been determined by networking of the small- and medium-sized enterprises. At first time Hakansson [2015] concentrated on examining the evolving of the business networks theoretically and empirically, the basic information and characteristics of the entrepreneurial networks were mustered by him. Hakansson stresses that a firm is not 'an island but a multiple system' encompassing human being with

emotion, regional past, traditions, special socialization, etc. It is clear, the entrepreneurial decisions, performances and the networking are defined by on one hand exogenous and endogenous assets and on the other hand regional proximities as well [Barnela, Levy 2015]; these usually have to be taken into account by the regional economic analysis.

Furthermore, as the network structure is analyzed intensively in the next chapters, the scale-free architecture of network has to be understood adequately. Obviously, the random graph theory cannot describe the network scheme in the nature but the Barabási–Albert model can grab it highlighting that the real networks usually follow scale-free property [Barabási 2016]. Fundamentally, the scale-free network structure can be defined as power-law degree distribution. In principle, the degree distribution illustrates how often nodes occur with varying edges in a network. Simply put, usually one or only some nodes have a large number of connections in the network, in so doing, the most of agents have only a few links thus hubs (high degree nodes is called hub) are formed that guarantee the robustness and integration of the network. The power-law degree distribution system is usually evolved by preferential attachment automatism referring to the more connected players, the more likely it is to receive new and new ties. Consequence of the scale-free network topology is that the robustness of network becomes high. More precisely, in the cooperative network a focal firm is known by everyone in the network, playing crucial role in the allocation of information, organizing, coordinating and integrating the actors of network. Lastly, the dominant firm (the hub) is defined as the Achilles Heel of network of SMEs [Barabási 2016] since it is the main actor in the network.

Significant close connection can be gauged between the business network and regional economic growth; it can be proved by not only conceptually but also by empirically as well. Tangible examples of the economic networking emerge both the Silicon Valley and Hollywood [Cohen, Fields 1999]; 80% of the Italian agricultural sector based on small family business and almost whole Danish economic structure bases on the networks of SMEs [Chetty, Partanen, Rasmussen, Servais 2014].

As above mentioned, the driving force of the Hungarian regional economic growth is the networking of SMEs. However, establishment of private ownership companies was forbidden in the socialist area indicating private ownership companies did not exist formally and there were no networks of firms, of course [Kornai 2008]. After the regime change the Hungarian local residents could establish firms but they did not have economic links and enough relational capital; SMEs were allowed to be formed but the SMEs networking was restricted on account of early wrong political and social experiences [Berend 1996]. This mul-

tiple situation determined significantly both the fluctuation of entrepreneurship and the networking of SMEs. In a nutshell, after 1989 numerous enterprises were established in Hungary, but these had to functionalize almost total alone because entrepreneurs did not believe in each other, the inter-firm nexus has not been configured easily. The social network of entrepreneurs has been specified by the communist heritages. The communism had been over but the socialist socio-cultural and personal effects have remained in the Hungarian patterns of connections.

Notwithstanding, I managed to find three bottom-up, supply-oriented cooperative networks that have been operating as real networks.

In the next sections the paper demonstrates how datasets of the three networks were collected and analyzed. Afterwards, the chapter of result on one hand characterizes above mentioned three Hungarian cooperative networks and on the other hand explains how cooperative networks impact regional economic growth.

2. Research methodology

The primary network datasets were assembled as follows. Employing my informal friendship including so many enterprises I found four collaborating same firms. Firstly I fixed up and conducted interviews separately with them and after that I asked entrepreneurs for telling me who else belong to this informal network. By following snowball method, three bottom-up, cooperative networks were revealed. Nevertheless, quantitative (questionnaires) and qualitative (sociological semi-structured interviews) methods were applied simultaneously in order to the characteristics of the cooperative networks can be understood in-depth [Paula 2015]. Basically, the primary graph database includes 127 interviews and 127 questionnaires. In general, the questionnaire consists of basic information of firms such as postal code, street, house number of firm location, number of employees, annual income, etc., besides, the interviews map out the nature of links between rivals. The interviews lasted 110 minutes on average, the longest one is 4 and a half hours, the shortest one is 55 minutes. The dataset was mustered between April and September 2015.

Nevertheless, the paper accepts statement that almost every cooperative network has spatial extension thus toolkits of network science and spatial econometrics are needed to combine. The first cooperative network is located from Tihany to Budapest (network of Budapest and Tihany: NTHBP), the second one exists in Nyíregyháza (network of Nyíregyháza: NNYH), and the last

one is situated in Budapest (network of Budapest: NBP). NTHBP embraces 72 firms, NNYH consists of 14 firms, and NBP includes 41 firms, all together ($72 + 14 + 41 = 127$) 127 enterprises belong to the network model. In a nutshell, $NTHBP = \{1,2,3 \dots 72\}$, $NNYH = \{1,2,3, \dots 14\}$, and $NBP = \{1,2,3, \dots 41\}$. Moreover, these have to be defined as disjoint sets, so $NTHBP \cap NNYH \cap NBP$, meaning that the networks can be analyzed separately and compared to each other in the next sections.

All of three unintentional cooperative networks are regarded as unweighted and undirected graphs referring to the interaction is mutual among firms, nodes are in symmetric relationship.

In this model: $N_{NTHBP,NNYH,NBP} = (V, E)$, where N is network, V are vertices and E is edge. In this case V means firms and E means link among firms. More precisely, the vertices mean premises of firms and the edge refers to cooperative interactions between competitors.

The structural properties of the cooperative networks are gauged by degree centrality, betweenness centrality, closeness centrality, the Duranton–Overman index, geodesic distance, average degree, small world, graph density, scale-free network topology and the large of network [Jackson 2016]. The details can be found in Table 1.

Table 1. Some calculations of the cooperative network

Parameter	Formula	Description
degree centrality (C_D)	$C_D = \frac{\sum_{i=1}^g [C_D(n^*) - C_D - (n_i)]}{[(n-1)(n-2)]}$	$C_D(n^*)$ is the highest degree, g expresses the number of players
closeness centrality C_C	$C_C(n_i) = \left[\sum_{i=1}^g g(n_i, n_j) \right]^{-1}$	it highlights that a firm has central position in the graph if a company can be accessed easily thus it can gather and distribute market information
betweenness centrality C_B	$C_B(n_j) = \frac{\sum g_{ij}(n_j)}{g_{ij}}$	it expresses that those player has power in the graph who is located among numerous other actors, where $i \neq j$, $l \neq j$ and $g_{ij}(n_j)$ expresses the number of the shortest edges between i and j
Duranton–Overman index [$\hat{K}(d)$ -index]	$\hat{K}(d) = \frac{1}{EN} \sum_{i=0}^n \sum_{j,e(i,j \in E)} f\left(\frac{g-g_{ij}}{h}\right)$	f is a Kernel function, h stands for the optimal bandwidth, i and j show the distance between firms
clustering coefficient (C_i)	$C_i = \frac{E_i}{k_i(k_i - 1)/2}$	where k_i is a degree of a node; (C_i) refers to ‘the extent to which one’s friends are also friends of each other’
average path (AP)	$AP = \frac{\sum_{i=1}^n \sum_{j=1}^n g_{ijt}}{N(N-1)}$	
small world (SW)	$SW = \frac{CL_t}{AP_t}$	

The qualitative dataset is elaborated by both the structured content analysis and qualitative input-output analysis. The dimensions of interviews are classified as follows:

- introduction,
- network evolution,
- collaborating with competitors,
- horizontal and vertical network structure,
- business model,
- the network effect on the income and establishing of new jobs.

3. Research findings/results

This chapter provides insight into the empirical results focusing on the topology of three Hungarian cooperative networks and effects of the cooperative networks on the regional economic growth.

3.1. The cooperative network between Tihany and Budapest

Tihany has always been a typical ecclesiastical and historical middle-sized town in Hungary; it is located in a peninsula of the north-Balaton Lake approximately 140 km far from Budapest (capital of Hungary). The local society of Tihany can be called special too, consisted of few members of elite and a large number of citizens who had been living under the Hungarian average living standards [Horváth 2015]. Nevertheless, this sad socio-economic circumstance has been reshaped basically by a very successful entrepreneur of Budapest who was born in Tihany. He decided on establishing a new local market in Tihany where the poor local inhabitants could sell their old and handmade products, odds and ends, vegetables and fruits from home gardens etc. Put another way, because of the new local market overwhelming of unemployed local people started working at new market and became entrepreneur and taxpayer citizens, moreover, they have been able to sign on further unemployed people of Tihany. Spread of the local entrepreneurship and the new marketplace have led to eliminate both the poverty and regional inequalities.

It has to be emphasized that the local market was formed in 2008, but the solvent demand missed therefore owner of new market managed to invite his VIP friends from Budapest so that they could purchase local residents' productions and as a result the local market has expanded; relational capital of the owner has been

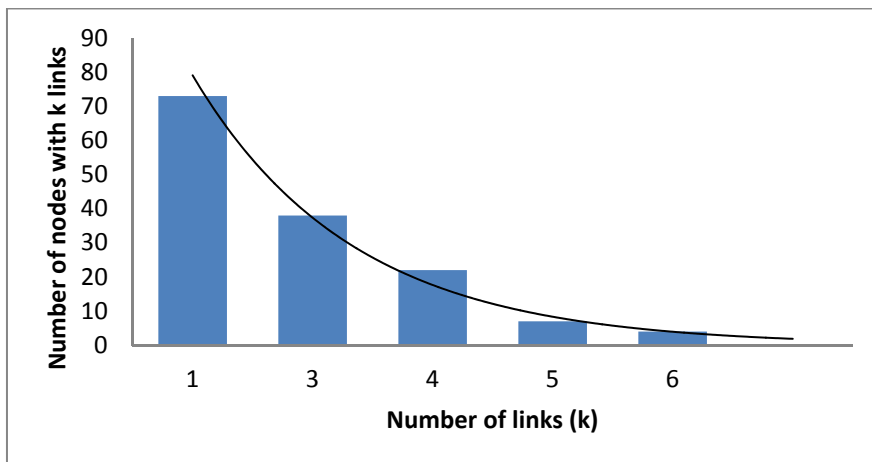
converted into economic capital. As a consequence, some successful enterprises of Budapest have been interested in selling products at new market of Tihany so nowadays approximately 20% of the NTHBP come from Budapest.

Indeed, the NTHBP has to be defined as an unintentional coepetitive network because its counterparts collaborate with each other in the field of mutual transportation of goods. Since the mutual transportation, a typical form of co-competition, prevails in the all three Hungarian coepetitive networks, the mechanisms of mutual transportation have to be demonstrated thoroughly at this point.

Initially, members of the coepetitive network understood that the price of transportation (expenditure) can be reduced by mutual transportation. So, when products start running out, an entrepreneur (the focal firm of the network) books orders and musters the list of needed goods. Just as many trucks are used for transporting goods that is enough for delivering the ordered volume of products hence savings can be realized collectively. For example, in the NTHBP usually 57 tracks deliver goods for 72 firms thus the cost of transportation and amortization of 57 tracks have to be paid by 72 enterprises. By sharing and reducing transportation cost, firms can save financial resources to establish new workplaces or to increase income of their employees.

Arguable, the focal firm has core function in the coepetition in Hungary. The role of dominant firm (sometimes it is called broker by Pathak, Wu and Johnston [2014]) can be identified adequately by scrutinizing architecture of the NTHBP. As Figure 1 shows, the NTHBP has scale-free property referring to that only one agent (namely the focal firm) in the network has a large number of coepetitive connections, conversely, numerous nodes have only a few coepetitive links.

Figure 1. The topology of NTHBP



Source: Own calculation.

Simply put, the dominant firm, owner of new marketplace, is known and trusted fully by everybody in the NTHBP, but the entrepreneurs do not trust in each other. As already indicated, it is because on one hand these entrepreneurs have been socialized in distrustful milieu of communism, on the other the rivals' relationships are not friendly. Therefore, the focal firm mediates among firms in the network and can build bridge among competitors; this hub is the Achilles Heel in the cooperative network. It can be lighted by a part of an interview:

“I hate C.J. (name of an entrepreneur was mentioned) because she deceived me a lot earlier. We hate each other. But I know A.P. (name of focal firm of the NTHBP was mentioned) who also knows C.J. I know that mutual transportation always brings me huge profit but I cannot negotiate with her so A.P. manages transportation between us. A.P. is a really good man, I trust him. He asks me and C.J. what we need next weekend and these are transported for us. But I never negotiate with C.J. but the mutual transportation works because A.P. helps and mediates between us!” (121st interview)

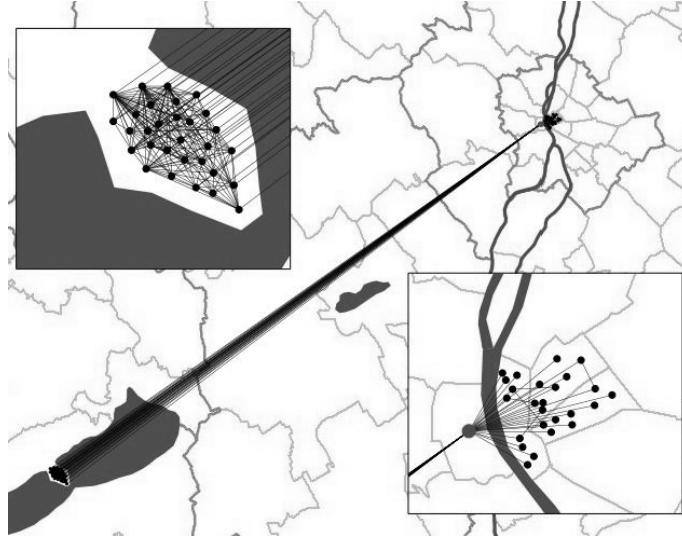
Basically, the focal firm guarantees integration and robustness of the cooperative network [Pachura 2010]. Formally, the central firm organizes mutual transports so that price reduction and profit maximization can be reached by all entrepreneurs in the NTHBP.

The NTHBP is defined territorially because it consists of 72 enterprises (57 from Tihany and 15 from Budapest) but only some firms of Budapest have cooperative nexus with enterprises of Tihany. More specifically, the NTHBP might be divided into two sub-graphs territorially. The first sub-graph can be found in Budapest, another one is revealed in Tihany and the two sub-networks are integrated by the focal firm (big point in Figure 2) therefore the NTHBP become a connected network.

Besides, the Table 2 indicates adequately the comprehensive and spatial architecture of three cooperative networks.

Table 2. Some structural values of three cooperative networks

Specification	N	L	k	C _{DF}	C _B	C _C	kd	D	AP	CL	SW	P
NTHBP	72	1742	48.38	0.73	1.93	0.82	0.19	0.69	1.36	2	0.4264	$1.6314T^{-2,135}$
NNYH	14	91	13	1	4	1	0,41	1	1	1	1	–
NBP	41	431	21.02	0.64	1.11	0.71	0.23	0.53	1.44	2	0.2361	$1.4871T^{-2,018}$

Figure 2. Spatial extension of the NTHBP

Source: Own calculation.

To date, the NTHBP possesses domestic and international reputation showing a large number of the elites, VIPs and celebrities have already visited to purchase and meet friends at local market. The solvent demand and urban milieu can be improved intensively and the NTHBP promotes to the value creation, values capture and value appropriation at regional level.

3.2. A cooperative network in Budapest

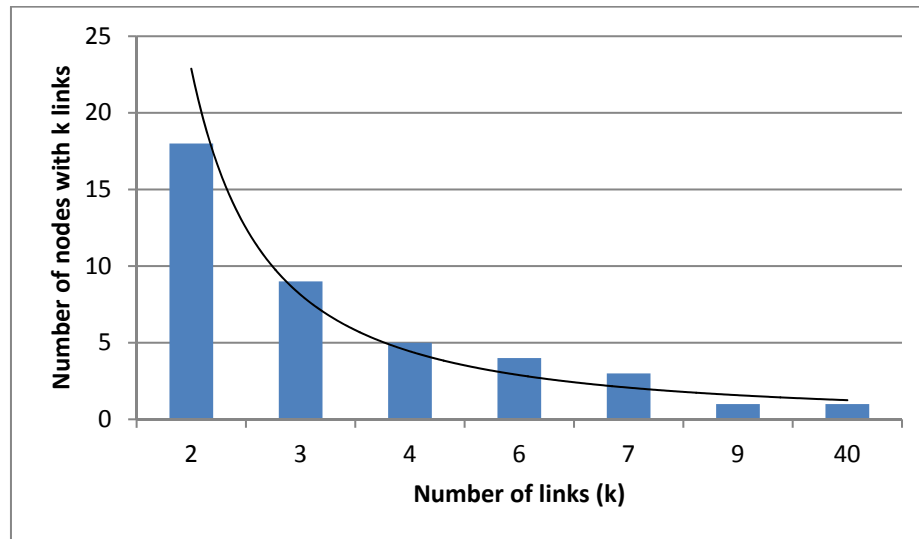
Actors of the NBP sell wine establishing in 2008 and encompass 41 same firms. The unintentional cooperation of NBP was constituted for mutual transportation so the NBP similar to the NTHBP. A central firm of the NBP manages mutual transport thus wine has not been needed to transport separately so the rivals of the NBP could save price of fuel to invest in creating new workplaces [Thorn-ton, Henneberg, Naudé 2015]. Basically, partners of the NBP compete fiercely on quality, price and value but collaborate in the sphere of mutual transportation simultaneously so it has to be called a dynamic cooperative network.

By dissecting architecture of the NBP, scale-free network topology can be found again. Dominant firm in the NBP is the Achilles Heel so robustness of the NBP is so high (see Figure 3).

The NBP is determined territorially meaning that actors of the network locate in the 5th, 6th and 9th (the most developed) districts. Besides, the focal firm (big point in Figure 4) is situated in the 2nd district, the richest place of Budapest.

In this respect, the Hungarian élite has prominent function in the regional economic development nowadays. Irrespective of salient tension, the NBP can functionalize because the central firm brings so strong cohesion power and high robustness in the entrepreneurial graph.

Figure 3. Topology of the NBP



Source: Own calculation.

Figure 4. Spatial extension of the NBP



Finally, the Marshall–Arrow–Romer specialization externalities (so-called the localization economies of scale) has been revealed on territory of the NBP because of coepetition.

3.3. A coepetitive network in Nyíregyháza

The entrepreneurs of NNYH sell perfumes, establishing with 14 members in 1993, so far the number of entrepreneurs has not been changed and the NNYH has been operating without any formal contracts. The NNYH can be named as very special coepetitive network due to rivals of the NNYH are Christians following strongly the dogmas of Church thus it should be called a closed coepetitive network. This closeness has to be explained by the religion since Christian entrepreneurs of the NNYH do not cooperate with non-Christians. The results of structured content analysis and qualitative input-output analysis of interviews suggest clearly that non-religious entrepreneurs attempted to engage in coepetition but the Christian entrepreneurs did not trust them. Nowadays, two coepetitive activities can be distinguished in the NNYH such as mutual transportation and allocation of market information.

For the first time, the NNYH had scale-free property indicating a focal firm had been organizing mutual transportation and allocating market information among competitors. Notwithstanding, after a short time all rivals started cooperating with each other intensively in some fields of business life hence they did not need more dominant firm. The central firm disappeared because all entrepreneurs of the NNYH trusted in each other and could make coepetitive interactions. Trust-building of the NNYH has been motivated by mutual faith therefore the role of central firm was marginalized gradually and the NNYH became a complete graph. In the complete network every actor is connected to every other actor; every entrepreneur has coepetitive interaction with every entrepreneur in the NNYH. In general, the NNYH might have become complete graph so quickly because its entrepreneurs have been Christians preferring reciprocal trust and respect as well.

Indeed, the NNYH has been effective but a static and closed network with only 14 nodes it has not scale-free scheme. The complete graph (see Figure 5) determines functionalizes of network [Knieps 2015], on one hand the robustness of NNYH is relatively low, and on the other hand it works democratically as horizontal bonds emerged among them.

Figure 5. Adjacency matrix of the NNYH

$$\text{NNYH} = \begin{bmatrix}
 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 1 \\
 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 & 1 & 1 \\
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 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & 1 \\
 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 & 1 \\
 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0 & 1 \\
 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 0
 \end{bmatrix}$$

Source: Own calculation.

Simply put, vertical competition and horizontal cooperation can be revealed and merged among rivals of the NNYH and these have brought financial success to them. The cooperation of rivals significantly contributes to appear the localization economies of scale (Marshall–Arrow–Romer specialization externalities) on territories of the NNYH.

3.4. Effects of the cooperative networks on the regional economic development

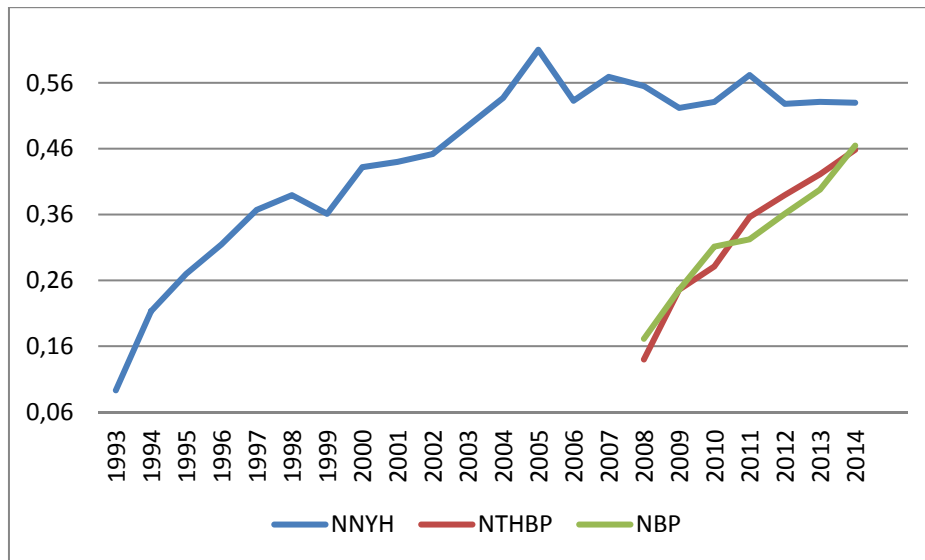
Now paper focuses on quantifying longitudinally how the cooperative networks define trajectory of regional economic growth. To date, there is no standard spatial econometrics method how the effects of the cooperative networks can be operationalized on regional economic development. In this vein, the paper now attempts to quantify network effects. In developed network model, the effect of the cooperative networks on the regional economic development is defined by (1) pay raising and (2) new jobs creating [Boucher, Fortin 2016]. Actually, the applied network model answers the question how and to what extent the competition strategy defines the change of income and employment rate on a certain network territory.

Basically, the gauging is divided into two components such as quantitative and qualitative ones [Thomason, Simendinger, Kiernan 2013]. On one hand the quantitative research focuses on employment and income data of the networks,

on the other hand the qualitative dataset depicts how the regional milieu and atmosphere have been shifted in studies phase.

The sharp question is how the gross costs of pay rise (PR) and the gross costs of creation new workplace (NW) can be financed by saving (S) that comes from cooperative activities. On one hand, the cooperative activities of firms can be expressed by saving (S), and on the other hand $PR+NW=GCRD$ where $GCRD$ is the gross cost of regional development. On condition that $S \geq GCRD$, then saving can finance absolutely the gross cost of regional development. Of course, if $S < GCRD$, then S is not enough to cover GCD . Moreover, $GCRD = \frac{S}{NW+PR}$ where $GCRD [0,1]$ shows what proportion the gross costs of pay rise and creation new workplace can be covered by saving. The global value of $GCRD$ within a time period: $\sum_{i=1}^n GCRD$. The Figure 6 reports the longitudinal changing of $GCRD$, obviously, the NNYH is the most successful in savings.

Figure 6. What proportion can the gross costs of pay rise and creation new workplace be financed by savings?



Source: Own calculation.

The Figure 6 demonstrates that in 2014 the 52.98% of pay rise and new job creation could be financed by the savings in the NNYH. Moreover, in same time the 45.83% of the regional economic development were covered by cooperative accomplishment in the NTHBP. Lastly, the 46.47% of regional economic development could be financed by the cooperative business strategy in the NBP. It is clear that competition in the practice has provides economic possibilities so that firms could expand market or create new marketplace, raise income and improve employee rate.

The quantitative data collection provides insight into the employment rate of three cooperative network separately. According to the data, 136 new workplaces were created by savings of NTHBP, 54 new jobs have been established by competition actions of NBP and 94 new workplaces were constituted by the savings of NNYH in 2014. In brief, the cooperative actions of rivals significantly contribute to the job creation.

Interestingly, the influence of financial economic crisis of 2008-2009 was not strong on accomplishment of the cooperative networks. The cooperative capacities of NTHBP and NBP were picking up sharply while the cooperative performance of NNYH was falling slightly under the period of economic crisis. Put another way, the cooperative network effects were stable on the regional economic development irrespective of the global financial crisis.

In parallel, the qualitative results show that the regional milieu and atmosphere were reshaped in Tihany. The local attitude has been changed and urban habit was emerging representing that local residents have started following modern life style meanwhile retaining their traditions and past simultaneously. In a nutshell, qualitative research findings demonstrate that the new local marketplace has been able to modify the conservative image in Tihany by forming a special mixed form of the modern and historical conventions with local folklore. As a whole, the cooperative networks have a qualitative spillover-effect namely these contribute to the strengthening of the local social integration.

Conclusions

Entrepreneurs of the Hungarian cooperative networks have already increasingly started understanding and exploiting both collaborative and competitive advantages thus contributing to the regional economic development directly. It means that relatively developed business culture appeared and evolved among the Hungarian small enterprises and competitors. In the practice, entrepreneurs of cooperative network share risks, cost and market information in order to maximize their profit. On one hand, the localization economies of scale emerged on territories of the NBP and NNYH, and on the other hand the urbanization economies of scale revealed on territory of the NTHBP.

Obviously, savings could be accumulated in every cooperative network by cooperative activities so as to be able to finance both creation of new workplaces and pay rising. In particular, the cooperative networks of same local entrepreneurs have established peculiar economic ecosystem and pleasant atmosphere through exploiting both local endogenous and exogenous assets as well.

My empirical evidences have clearly proved that coopetition in the real business process has to be scrutinized by applying both quantitative and qualitative methods to understand in depth economic automatisms and impacts of this new inter-firm partnership. Two-fold combined methodology framework must be taken into account by researchers in the further investigations. Moreover, the limitation of this study is that the results are valid on only involved Hungarian coooperative networks. Nonetheless, a large number of coopetition-based business networks have already been evolved in the Polish regions as well [Rosinska-Bukowska 2016] thus the methodological toolkits and findings of this paper might be adapted in the future.

Finally, the accomplishment of coooperative networks might provide a new message to the Hungarian regional policy and territorial planning. The local competitors can increasingly organize and contribute to the regional economic growth therefore activities of coooperative network ought to be taken into account within a framework of the formal Hungarian regional economic development policy in the future. Formally, the economic sector and political stakeholders should collaborate more intensively with each other to strengthen the regional economic growth.

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