



Financial Cooperatives as Drivers for Knowledge Economy

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Abstract Knowledge economy has its stakeholders and drivers; some of them are more important than the others. Financial cooperatives do not seem a substantial stakeholder of knowledge economy, but only at first sight. This paper deals with the evaluation of financial cooperatives as drivers for knowledge economy, and positive correlation between the level of prevalence of credit unions in different countries and the level of development of the knowledge economy is demonstrated.

Keywords – financial cooperatives, credit unions, credit union classification, community empowerment, stakeholders, knowledge economy.

I. INTRODUCTION

The ongoing debate about the significance and the necessity of knowledge society in creating welfare economics and ensuring sustainable development provide assumptions to analyze at a glance indirect factors influencing the development of the knowledge economy. One of the most common proposals is related to the development and application of various support and grant mechanisms that would possibly foster and encourage the development of knowledge society. Such mechanisms include various forms starting from the non-refundable grants to the financial engineering instruments.

The authors of this paper have made the assumption that, particularly in the community level, one of the most effective economic mechanisms for fostering the development of knowledge societies could be a traditional cooperative financial institution, which represents not the interests of shareholders (e.g. a commercial bank), but the interest of stakeholders and communities (e.g. cooperatives – cooperative banks and credit unions).

Cooperative banks have already proved their significance in financial crisis management of 2007-2009, and have attracted substantial attention from the economists and researches, trying to calculate various correlations and discussing the peculiarities of corporate management implementation by cooperatives.

However the smaller scale financial market players like credit unions are still somewhere outside the official researches, though they (their members) are actually the nearest and direct community agents and stakeholders. Credit unions enable the interests of communities, and such empowerment potentially may be employed for the development of knowledge economy.

That is why **the problem** arises – how to evaluate the influence of financial cooperatives for community empowerment in knowledge economy? Acknowledgment of financial cooperatives as drivers for knowledge economy would enable to use more methods and ways of knowledge economy development.

The object of this paper is the influence of financial cooperatives for knowledge economy. **The aim** of this paper is to analyse the impact of financial cooperatives for knowledge economy development. **The objectives of this paper are as follows:**

- 1) to analyse community empowerment through financial cooperatives;
- 2) to discuss the role of financial cooperative institutions depending on their maturity level;
- 3) to calculate and evaluate correlations between knowledge economy indexes and certain statistical activity indicators and level of prevalence of financial cooperatives.

Methods of research: comparative analysis of scientific literature, statistical analysis.

II. KNOWLEDGE FOR DEVELOPMENT

Depending on their achieved economic development, all national economies systematically manage the relevant factors of the knowledge economy to ensure that their economies are based increasingly on knowledge, in order to achieve higher rates of economic growth and sustainable development. There is no one universal model of transition to knowledge economy, and the transformations that a particular country should make depend primarily on its achieved current level of economic development [1]

However, the transition to the knowledge economy includes four pillars, which are set by the World Bank [2]

- educated and skilled workers;

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- an effective innovation system of firms, research centers, universities, consultants and other organizations;
- a modern and adequate information infrastructure,
- an economic incentive and institutional regime.

The World Bank [3] is calculating several knowledge economy indexes as an indication of overall potential of knowledge development in a given country

- The Knowledge Economy Index (KEI) takes into account whether the environment is conducive for knowledge to be used effectively for economic development. The KEI is calculated based on the average of the normalized performance scores of a country or region on all 4 pillars related to the knowledge economy - economic incentive and institutional regime, education, innovation and ICT.
- The Knowledge Index (KI) measures a country's ability to generate, adopt and diffuse knowledge. The KI is the simple average of the normalized scores of a country or region on the key variables in three Knowledge Economy pillars – education, innovation and ICT.
- The Economic Incentive Regime (EIR) is the simple average of the normalized scores on three key variables: tariff and nontariff barriers, regulatory quality, and rule of law.
- Information and Communication Technology (ICT) is the simple average of the normalized scores on three key variables: telephone, computer, internet penetration.
- The Innovation System (Innovation) is the simple average of the normalized scores on three key variables: total royalty payments and receipts, patent applications, scientific and technical journal articles.
- Education and Human Resources (Education) is the simple average of the normalized scores on three key variables: adult literacy rate, secondary enrollment, tertiary enrollment.

The authors of this paper will analyze the correlation of those indexes with the certain statistical activity rates of financial cooperatives.

The environment is directly related with the economic and institutional regime, that provides economic policies and institutions, incentives for the efficient use of existing and new knowledge, entrepreneurship, stimulate creativity and ensure sustainable development in all levels.

Traditionally, there are four levels of sustainable development: global, regional (national), corporate and individual, each of them differ depending on their actors, mode of operation, and applied measures. The relations between different levels of sustainable development are managed in several ways: formal legislation, empowerment, individual initiatives.

The significance of the corporate level for sustainable development is based on formation of knowledge society and networking. Knowledge society sometimes is referred to as organizations' society, as the goal and purpose of any organization is integration of various specific knowledge and competencies for the achieving of common goals. The recent

studies [4] on management and community research indicate for the increased weight of stakeholder management and related community empowerment mechanisms.

III. COMMUNITY EMPOWERMENT

Empowerment is a construct that links individual strengths and competencies, natural helping systems, and proactive behaviors to social policy and social change. Empowerment theory, research, and intervention link individual well-being with the larger social and political environment [5]. Empowerment theory provides principles and a framework for organizing one's knowledge. A theory of empowerment suggests ways to measure the construct in different contexts, to study empowering processes [6].

Community empowerment networks and organizations use various methods to help and assist communities to satisfy their needs and promote and develop various initiatives. It should be noted that the best known and usually world-wide networks and initiatives are mostly related to the primary issues of sustainable development, i.e. social and discrimination issues, life quality, environmental protection, democracy.

However, there is plenty of other, smaller scale and local community empowerment cases around us. The most important thing about such local community empowerment cases is that they enable more people to play active role in the decisions that affect their communities [7]

An empowered community has 5 community empowerment dimensions [8]:

- confident – working in a way which increases peoples skills, knowledge and confidence – and instills a belief that they can make a difference;
- inclusive – working in a way which recognizes that discrimination exists, promotes equality of opportunity and good relations between groups and challenges inequality and exclusion;
- organized – working in a way which brings people together around common issues and concerns in organizations and groups that are open, democratic and accountable;
- co-operative – working a way which builds positive relationships across groups, identifies common messages, develops and maintains links to national bodies and promotes partnership working;
- influential – working in a way which encourages and equips communities to take part and influence decisions, services and activities.

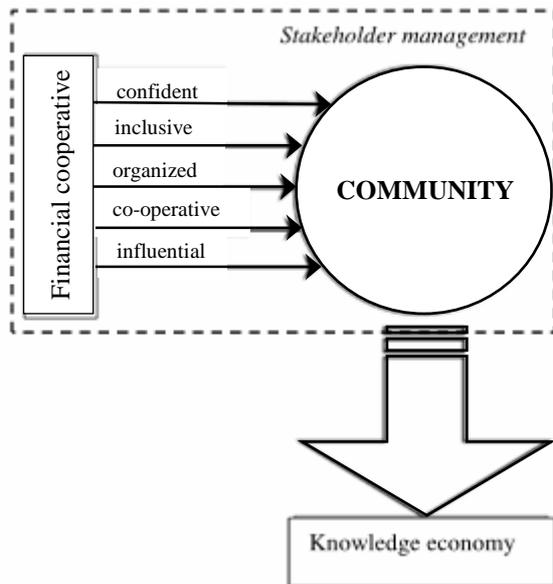


Fig. 1. Financial Cooperatives as Drivers for Knowledge Economy

Based on their previous researches [9, 10, 11, 12, 13], the authors of this paper consider the financial institutions as strong and substantial stakeholders in sustainable development and knowledge economy development processes.

Additionally, the recent researches show that the diversity of ownership types and business models in banking is particularly important for a sound and reliable financial system. A financial system that presents a diversified institutional structure, including institutional types, will be more efficient in promoting economic growth and reducing poverty [14]. The crisis of 2007-2009 has shown the added value of the cooperative banking model. Cooperative banks are stakeholder-value institutions, when the traditional commercial institutions are referred to as shareholder-value ones. However, it should be noted that the contribution of cooperative banks to banking market structures is only noticeable if the cooperative banking model enjoys a critical mass.

IV. COOPERATIVE INSTITUTIONS

Cooperatives exist to serve their members, whether they are the customers, employees or the local community. These members are the owners, with an equal say in what the cooperative does. As well as getting the products and services they need, members help shape the decisions their cooperative makes. 100 million people around the world are employed by cooperatives, 800 million are members. Cooperative enterprises also fit with the EU2020 strategy that aims for “a sustainable economy, putting people and responsibility first with a sustained fight against exclusion and a transition to a green economy” [15]

Certain major principles define cooperatives and their specific corporate governance features. The International Cooperative Alliance has prepared a list of principles upon which cooperatives rely worldwide in order to conduct their operations. While certain specific regional principles are found throughout the world, seven major principles are predominant.

More specifically, cooperatives are marked by the following [16]:

- open and voluntary membership,
- democratic management by members,
- economic involvement of members,
- autonomy and independence vis-à-vis any external power,
- training and information duties,
- tendency to cooperate with other cooperatives and involvement in community life.

The existence of members is one of the major differences between cooperatives and any other type of enterprises. Members of cooperatives are their stakeholders at different levels. The most specific attribute of cooperatives is their corporate governance. Corporate governance that is based on participation of stakeholders of different social groups and competencies, and on meeting the interest of such different stakeholders, needs to be analyzed in the context of modern management theories.

Different studies show that due to their “one member – one vote” corporate management system, cooperative banks may develop a more sustainable lending models, have the ability to develop more socially oriented business, their legal statutory mandate, their ethical codes and the stakeholder oriented governance produce positive effect on economic development, economic growth, reducing financial exclusion, improving the value of entrepreneurial human capital with long run banking relationships and horizons, cooperative Banks become active part of economic change. Moreover cooperative banks produce financial sustainability, and the ability of cooperative banks to produce financial stability is showed both theoretically and empirically. [17]

Despite their stakeholder oriented governance, cooperative banks are still banks – most often large, vertical and slow organizations, and their communication with communities is often of a “presenting the annual social accountability report” manner. However, the active role of members in the decision making processes, their direct influence at the local level, and immediate social or/and economic affect to the local community makes the issue specific.

The authors of this paper have indicated the credit unions – small cooperative financial institutions – as possible change actors for the direct empowerment of local communities.

V. CREDIT UNIONS

Credit unions are self-help cooperative financial organizations geared to attaining the economic and social goals of members and wider local communities. Each credit union is governed by its members. Credit unions cannot do business with the general public due to charter limitations based on serving a membership that is characterized by a common bond. The common bond is based on a pre-existing social connection (such as belonging to a particular community, industrial or geographic group) [18]. In the past, this helped in the absence of more formal control and management systems of credit unions. However, the recent tendencies in credit union movement show that the common bond also limits commercial diversification, and in many

jurisdictions has become less important as the movement has matured.

In 2012, there were 55.952 credit unions operating in 101 countries. These credit unions had a membership of over 200 million, which equates to a population penetration of 7,72% and had total assets under their control of approximately \$1.694 billion, savings of USD 1.293 billion, loans of USD 1.083 billion and reserves of USD 162 billion [19]. The aforementioned indicators will be analyzed by the authors of this paper in order to establish possible correlations between the knowledge economy development indexes and the credit union development stage.

An organizational life-cycle theory assumes that credit unions pass the following stages of development: nascent, transition and mature. This typology contains an assumption concerning "economic determinism" in so far as the asset size of credit unions is seen as a major determinant of credit union behavior [20]. Though with a certain limitations, the typology provides a sufficient framework to assess the credit union movement within each country (Table 1)

TABLE I

STAGES AND ATTRIBUTES OF CREDIT UNIONS MATURITY [20].

Stage of industry	Attributes
Nascent Industry	Small Asset Size Highly Regulated Tight Common Bond Strong Emphasis on Voluntarism Serve Weak Sections of Society Single Savings and Loans Product Requires Sponsorship from wider Credit Union Movement to take root High Commitment to Traditional Self-Help Ideals
Transition Industry	Large Asset Size Shifts in Regulatory Framework Adjustments to Common Bond Shifts towards greater Product Diversification Emphasis on Growth and Efficiency Weakening of Reliance on Voluntarism Recognition of need for Greater Effectiveness and Professionalism of Trade Bodies Development of Central Services
Mature Industry	Large Asset Size Deregulation Loose Common Bond Competitive Environment Electronic Technology Environment Well Organized, Progressive Trade Organizations Professionalization of Management Well Developed Central Services Diversification of Products and Services Products and Services Based on Market Rate Structures Emphasis upon Economic Viability and Long Term Sustainability of a Credit Union Rigorous Financial Management of Operations Deposit Insurance Mechanism Established

Nascent industries can be found primarily in the developing countries where they are often seen as vehicles for reducing poverty within more general microfinance programs. Most credit unions are somewhere in the transition stage, and few industries can be ascribed to the mature phase (i.e. USA, Canada, Australia, France, Korea). In 2002, the typology was updated to include a post-mature phase [20]. The post-mature phase is supposed to be the final stage in the life cycle development of a credit union. At this stage the credit union and the industry supporting the credit union is of sufficient standard to allow the credit union to convert (to transform) into commercial financial institution (mostly – a commercial bank). The identification of this phase was mainly determined by a specific case in Canada, where one particular credit union was successfully reorganized to a commercial bank.

Credit unions exist to attain the economic and social goals of their members, and not maximizing profit and shareholder wealth. This enables credit unions to empower communities to pursue specific interests of the communities.

VI. CORRELATIONS

The authors of this paper have made a preliminary analysis of statistical data in order to establish whether there is a correlation between the level of prevalence of credit unions in different countries and the level of development of the knowledge economy.

The data of unions (number of credit unions, amount of savings, loans, assets and level of penetration) all over the world has been grouped [19] and maturity levels of credit unions in every country have been determined according to Ferguson Ch. and McKillop D.G [20].

The data of KEI, KI, EIR, Innovation, Education and ICT has been grouped [3].

The research scope has included 78 countries.

Main findings are represented in tables (II – VII) below.

TABLE II
CORRELATIONS WITH NUMBER OF CREDIT UNIONS

	1-st maturity level	2-nd maturity level	3-rd maturity level
KEI	-0,214	-0,224	0,135
KI	-0,234	-0,218	0,247
EIR	-0,095	-0,184	0,088
Innovation	-0,240	-0,072	0,716
Education	-0,181	-0,298	-0,515
ICT	-0,259	-0,218	0,750

Correlation of credit union number with KEI, KI and EIR is not established in any maturity level.

Strong direct correlation between the number of the 3rd maturity level credit unions and Innovations and ITC is established.

The inverse correlation between the 3rd maturity level and Education is established.



TABLE III

CORRELATIONS WITH NUMBER OF CREDIT UNIONS MEMBERS

	<i>1-st maturity level</i>	<i>2-nd maturity level</i>	<i>3-rd maturity level</i>
KEI	-0,073	-0,200	0,221
KI	-0,097	-0,167	0,322
EIR	-0,128	-0,216	0,165
Innovation	0,027	-0,026	0,746
Education	-0,128	-0,174	-0,486
ICT	-0,151	-0,208	0,808

There is no significant correlation of number of credit unions members neither with KEI, KI, EIR nor Education in any maturity level.

The significant correlation is established between the number of credit union members of the 3rd maturity level and Innovation and ICT.

TABLE IV

CORRELATIONS WITH SAVINGS

	<i>1-st maturity level</i>	<i>2-nd maturity level</i>	<i>3-rd maturity level</i>
KEI	-0,029	-0,063	0,271
KI	-0,043	-0,025	0,354
EIR	0,019	-0,120	0,214
Innovation	0,077	0,058	0,769
Education	-0,080	-0,067	-0,481
ICT	-0,094	-0,024	0,835

There is no significant correlation of savings neither with KEI, KI, EIR nor Education in any maturity level.

The significant correlation is established between the savings in credit unions of the 3rd maturity level and Innovation and ICT.

TABLE V

CORRELATIONS WITH LOANS

	<i>1-st maturity level</i>	<i>2-nd maturity level</i>	<i>3-rd maturity level</i>
KEI	-0,033	-0,041	0,414
KI	-0,046	-0,016	0,296
EIR	0,015	-0,070	0,399
Innovation	0,075	0,079	0,902
Education	-0,080	-0,062	-0,618
ICT	-0,099	-0,026	0,839

There is no significant correlation of granted loans neither with KEI, KI nor EIR in any maturity level.

The significant correlation is established between the granted loans by the credit unions of the 3rd maturity level and Innovation and ICT.

The inverse correlation between the granted loans by the 3rd maturity level and Education is established.

TABLE VI

CORRELATIONS WITH ASSETS

	<i>1-st maturity level</i>	<i>2-nd maturity level</i>	<i>3-rd maturity level</i>
KEI	-0,068	0,026	0,345
KI	-0,088	0,048	0,311
EIR	0,003	-0,006	0,314
Innovation	0,048	0,139	0,850
Education	-0,129	0,011	-0,572
ICT	-0,141	0,022	0,836

There is no significant correlation of assets neither with KEI, KI nor EIR in any maturity level.

The significant direct correlation between the assets of the 3rd maturity level and Innovation and ICT is established.

The inverse correlation between the assets of the 3rd maturity level unions and Innovations and Education is established.

TABLE VII

CORRELATIONS WITH PENETRATION LEVEL

	<i>1-st maturity level</i>	<i>2-nd maturity level</i>	<i>3-rd maturity level</i>
KEI	-0,190	0,183	0,852
KI	-0,260	0,244	0,338
EIR	0,062	0,029	0,897
Innovation	-0,192	0,225	0,937
Education	-0,310	0,228	-0,556
ICT	-0,230	0,274	0,735

One of the key indicators of the impact of credit unions on social trends - participation in credit union activities (penetration) rate, which is measured by calculating the percentage of the working-age population having membership with the credit union - in other words, what part of the community, whose interests may be empowered by the credit union, is involved in the credit union activities.

There is no correlation established between the penetration of the 1st and the 2nd maturity level unions with any of the six analyzed KE indicators.

There is no correlation established between the KI and penetration in any maturity levels.

However, the strong direct correlation is established between the penetration of the 3rd maturity level unions and KEI, EIR, innovation and ICT, and inverse correlation with Education.

VII. CONCLUSIONS

Depending on their achieved economic development, all national economies manage the relevant factors of the knowledge economy to ensure that their economies are based increasingly on knowledge, in order to achieve higher rates of economic growth and sustainable development.

The recent studies on management and community research indicate for the increased weight of stakeholder management and related community empowerment mechanisms.

Community empowerment networks and organizations use various methods to help and assist communities to satisfy their needs and promote and develop various initiatives. The most important thing about local community empowerment cases is that they enable more people to play active stakeholder role in the decisions that affect their communities.

Financial institutions are strong and substantial stakeholders in sustainable development and knowledge economy development processes. The recent researches show that the diversity of ownership types and business models in banking is particularly important for a sound and reliable financial system.

Cooperative banks are stakeholder-value institutions, when the traditional commercial institutions are referred to as shareholder-value ones. The existence of members is one of the major differences between cooperatives and any other type of enterprises. Members of cooperatives are their stakeholders at different levels. Small financial cooperatives, like credit unions exist to attain the economic and social goals of their members, and not maximizing profit and shareholder wealth. This enables credit unions to empower communities to pursue specific interests of their local communities.

Credit unions of the 1st and the 2nd maturity level are not KE drivers, there are no reliable correlations with KEI, KI, EIR, Innovation, Education and ICT. It may be assumed that unions of the first maturity levels do not empower communities for the development of knowledge society and knowledge economy.

Credit unions of the 3rd maturity level become an evident drivers for knowledge economy, as the direct correlation between the different characteristics of the credit unions of the 3rd maturity level with Innovation and ICT are established. The most significant is the correlation between the penetration level and KEI.

The nonexistence of correlation between the 3rd maturity level and KI justifies the analysis, as the difference between the KEI and KI is mainly the institutional aspect and indicators, i.e. the economic incentive and economical regime, which is the indicative description of the activity of the financial cooperatives.

The analysis indicates for an increasing positive correlation depending on credit union industry development stage. The future challenge for the researches is to develop a comprehensive model for the successful empowerment communities of credit unions in creating and developing knowledge economy.

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