Generation of Social Assets and Sharing Knowledge in a Hybrid Intentional Community: Pilot Analysis from Latvia

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Abstract

The present paper is an attempt to investigate the dynamics of social assets building and knowledge exchange among the members of an intentional community (the National Library of Latvia users’ community) based on a hybrid social infrastructure consisting of online and offline (face-to-face) links and communication channels. Although the theoretical framework is primarily based on the social capital theory, knowledge management studies and the theory of social categorization, insights from applied epistemology are also included. The proposed model hypothesizes a positive effect of cognitive proximity on trust, community identity and hence on the quality of knowledge exchange, which should enhance in its turn the growth of individual knowledge. Empirical analysis based on structural equation modelling was performed among the members of the National Library of Latvia community in order to test the above-mentioned hypotheses. Findings show both some common and consistent results with several prominent organisational and community studies (above all, a positive effect of social capital on the quality of knowledge exchange and individual knowledge growth) and some discrepancies (the role of motivational factors enhancing complex knowledge growth) as well.

Keywords: hybrid communities, social capital, knowledge sharing, structural equation modelling.

Introduction

In the last decades, in social sciences, there is a general consensus that ICTs have had a modifying impact on the concepts of neighbouring, proximity and social capital (Hampton and Wellman, 2003). This has led to a strong attention in sociology, organisational science and to some extent regional science to the issue of the extent to which online, virtual communities can be substitutes for traditional, geographical, face-to-face ones. Such an issue has several implications. One of the most relevant and debated topics is related to the cognitive benefits of virtual networking. An effective impact of non-geographical channels on knowledge sharing would imply the independence of knowledge from geographical co-occurrence (geographical location of regions and boundaries) with relevant socio-economic consequences. The issue is, however, controversial. Critiques (e.g., Camagni and Capello, 2005) argued that knowledge exchange and innovation growth based on global virtual channels (ICTs) are limited by a lack of social trust and sense of belonging in virtual communities. Indeed, in organisational and regional studies there is consensus about a strong predicting role of social assets for the effectiveness of knowledge and information exchange in organisations and territories. This leads to another side of the problem, which is crucial in order to address cognitive dynamics: that is, whether it is possible to reproduce in virtual social environments those social assets which are embedded within geographical communities and physical networks. Borrowing terms from territorial innovation studies it is possible to say in other words that the issue amounts to investigating whether a virtual community can reproduce the main features of a community of practice from the point of view of social assets, which are embedded in networks and the consequent cognitive benefits of such assets. Next to it, a reflection on cognitive assets and obstacles to access those assets is needed. This requires careful taxonomy of involved factors and effective cross-fertilization of social and cognitive science threads.

The present paper is an attempt to investigate the effectiveness of knowledge exchange in a mixed physical-virtual environment, rarely investigated in literature, a hybrid community. In particular, the relations between social capital, motivational factors and knowledge sharing are analytically investigated. The approach is based on sociology and social psychology threads (social capital and social
cognitive theory) and on epistemological reflections on the nature of knowledge and its inherent barriers to sharing. A quantitative approach was adopted for empirical analysis based on structural equation modelling (Joreskog and Sorbom, 1979) and was performed at the micro (individual) level.

Our study shares several issues of Gaved and Mulholland (2005), who focused on networked characteristics of a community. Moreover, current analysis is one of few studies that investigate hybrid physical-virtual networking. We especially hypothesize that the interaction between online and offline communication significantly extends and enhances social interactions in particular and cognitive processing in general.

Theoretical research framework
Towards the definition of a community
A comprehensive and unifying definition of what counts as a community in general and an epistemic community (community of shared knowledge) in particular is still lacking. We argue that what is common to all kinds of communities are:

(a) Collections of associative links, nodes, themes, whereby links and nodes can refer to both human and artificial agents (such as knowledge repositories, e.g., libraries). In the case of online communities, communicative links and nodes lack physical or geographic co-occurrence.
(b) Interaction structures, implicit or explicit shared norms and shared principles of behavior, support / feedback cycle and shared goals,
(c) Impact of technical infrastructures and format- or channel-specificity.

Communities both in physical and virtual sense have an epistemologically distinct concept of an agency. The sense of belonging and sharing of common goals generate “we-identity” and “we-intentionality” of communities (cp. discussion on shared intentionality and agency: Gilbert, 2004, Tomasello, 2009, Searle, 2008).

Social categorization and generation of self in communities
Knowledge exchange in communities is enabled by the processes of social categorization (for an overview cp. Leary and Tangney, 2003, Fiske, Gilbert, and Lindzey, 2010). The core part of social categorization and the ground gor epistemic agency is the generation of self-representation. On the one hand, self is generated by the sense of being unique; on the other hand, self is generated by the sense of belonging to a community (Brewer, 1991, Brewer and Gardner, 1996). Further, if we explore the structure of self-representation we may explore different mutually in-
that are based on joint commitment: “Population P believes that p if and only if the members of P are jointly committed to believe […] that p.” (Gilbert, 2004, p. 100). Although we are not able to provide empirical evidence for the joint commitment thesis, we argue that hybrid communities possess it.

**Physical and virtual communities: social assets and cognitive dynamics**

Studies of virtual communities from the point of view of reproducibility of social assets, which are observed and relevant in geographical communities and their consequent capability to enhance, among other effects, virtuous cognitive dynamics, is widespread in sociology and organizational science (Rheingold, 1993). Social capital-based community studies and organisational studies widely describe the nature of such social assets. Authors generally agree about reproducibility of trust as the key factor behind knowledge and information exchange. In geographical community studies, trust is meant as one of the main social assets which lead to socio-economic development (Putnam, 1993). In terms of social capital taxonomy, trust is one of the main components of relational capital, that is, the set of assets which are embedded within linkages and networks (meant as structural capital). Ridings, Gefen and Arinze (2002) stated that trust enhances information sharing in virtual communities, trust is, in turn, enhanced by perceived responsive relationships, disposition towards trust, belief that others confide personal information. Usoro, Sharratt, Tsui and Shekhar (2007) also stated that trust is antecedent for knowledge sharing.

In social capital-based cognitive studies, however, the structural / relational dichotomy has been deemed insufficient to describe all relevant aspects of social capital with regard to knowledge exchange and transfer effects. An enriched taxonomy was proposed in the field of organisational science by Nahapiet and Ghoshal (1998), who added a cognitive component representing mutual compatibility of agents with regard to shared vision, culture, language. Chiu, Hsu and Wang (2006) empirically studied the effect of social capital and personal motivation on knowledge sharing in virtual communities, combining Nahapiet and Ghoshal’s taxonomy of social capital and Bandura’s social cognitive theory (1989). Cognitive social capital, community expectations and trust were found to affect exchange quality; structural social capital, norm of reciprocity and identification, and community expectations affect exchange intensity.

**Physical networks versus virtual networks in the regional science**

Implications for regional science threads related to knowledge and information exchange, territorial innovation studies in particular, are extremely relevant. One of the most controversial topics in this context has been, in the last years, assessment of the real impact of ICTs on knowledge growth and the extent to which virtual channels can be substitutes for geographical proximity. As mentioned above, Camagni & Capello (2005) argued that lack of social trust and sense of belonging in virtual communities limits the positive impact of ICTs on knowledge and innovation growth. On the other hand, Lundvall and Nielsen (2008) stated that ICTs have positive effects on knowledge exchange, however, such effects are strongly dependent on the nature of exchanged knowledge.

**The issue of inner barriers: the nature of knowledge**

Quite surprisingly, social capital studies, that investigate knowledge transfer dynamics, rarely attempt an epistemological discourse and discriminate between different forms of knowledge. Such lack of interest in this issue is surprising since it is relevant for two main reasons. Firstly, since Nonaka’s studies on organisational learning (1991; 1994) it has been acknowledged that information and knowledge are two distinct concepts, which may follow different social learning patterns (Inkpen and Tsang, 2005). Secondly, although most debates on the social exchange of knowledge, as evident from the previous paragraphs, focus on the interaction of agents and their social linkages (of an affective and cognitive nature), which are reflected in the relational and cognitive dimensions of social capital, Szulanski (1996), while investigating knowledge exchange in large organisations, found that it can be affected by the inner complexity of knowledge as well.

**Research methodology**

**Theoretical model. Main tenets**

The aim of the paper is to investigate the interplay existing in a hybrid community among social capital (meant as social assets which are embedded within networks), personal motivation, the quality of knowledge exchange and the growth of individual knowledge, among individuals belonging to a hybrid community.

Quantitative studies on hybrid communities and knowledge dynamics are basically absent in literature; however, a few relevant studies which analyze such dynamics in the context of virtual and organisational communities do exist. The adopted framework partly relies on the model developed by Chiu et al. (2006) who investigated knowledge transfer in virtual communities taking into account the contribution of both social capital and personal motivation to
the intensity and quality of knowledge transfer. The hypotheses of Nahapiet and Ghoshal (1998) and the findings of Tsai and Ghoshal (1998) on the correlation among different social capital dimensions and their effects on inter-unit knowledge sharing in large organisations are also the basis for the model. Two features, however, make the present approach different: a) the hybrid nature of the investigated community; b) an attempt to discriminate between different forms of knowledge.

As for the former, the study of a mixed physical-virtual community provides with the possibility to investigate the effects of both face-to-face and virtual structural capital on social assets and cognitive dynamics, and compare them.

As for the latter, knowledge taxonomy is adopted, based on two popular dichotomies: a) Russell’s (1998) distinction between experiential and declarative knowledge, that is, knowledge derived by experience, of a procedural nature (knowledge by acquaintance) and knowledge derived from notions and data sources, of a declarative nature (knowledge by description); b) Nonaka’s (1994) distinction between information (organized data) and knowledge in a strict sense (information-sustained belief).\(^1\)

The identification of different forms of knowledge and the presence of the factor, that measures the quality of knowledge exchange, allows to investigate the relevance of barriers to access which are related to the nature of knowledge itself, as in Szulanski (1996).

**Data collection**

The model, described in the following paragraphs, was tested on the basis of a survey carried out among the members of the National Library of Latvia (the largest library institution in the Baltic States) users’ community. The community includes several thousands of regular members and over 70,000 of occasional users, based in Latvia and abroad, interacting both in real life and virtual online platforms (portals, forums, social networks) in order to exchange information, materials, documents related, in particular, to the cultural and historical heritage of Latvia. Its features (an intentional community characterized by the hybrid infrastructure and an intense exchange of information and knowledge among members) make it a very suitable case study for the scope of the paper.

Data were collected on the basis of answers to questions / statements measured on 5-point Likert psychometric scale (Likert, 1932). The questionnaire was structured according to sections associated with the theoretical model variables which are outlined in the following paragraphs (social capital dimensions, motivational attitudes, knowledge exchange quality, knowledge dimensions) with a subset of questions / statements associated with each hypothesized variable.

**Variables**

The choice of social capital dimensions is based on Nahapiet and Ghoshal’s work (1998), which set the standard for taxonomy useful to investigate the cognitive benefits of social capital:

- **Structural social capital**, meant networks, linkages, i.e. the social networking structure of a community;
- **Relational social capital**, meant positive attitudes among members of a community (e.g., trust in community members). Putnam (1993) defined it as consisting of trust and shared norms. Nahapiet and Ghoshal (1998) attributed it to a crucial motivating role for knowledge exchange dynamics.
- **Cognitive social capital**, meant common narratives, language, vision of the community members (Nahapiet and Ghoshal, 1998). With regard to knowledge exchange dynamics, it is associated with the combination of capability and relative absorptive capacity (Lane and Lubatkin, 1998).

Such taxonomy is extremely influential in studies that investigate knowledge sharing and enrichment in organisations and communities. However, many social capital theorists, in particular those who have studied social capital assets as resources owned by individuals or groups rather than collective ones (e.g., Bourdieu, 1986) and those who have adopted a network-based approach (Portes, 1998; Burt, 2001), define social capital as the set of assets (i.e. the relational and cognitive dimensions) which are embedded within networks, excluding networks themselves from such a definition. In the context of the present paper, which adopts an analysis approach at the micro (individual) level, structural capital is not included in the theoretical model; it is hypothesized that it consists of a mix of face-to-face and virtual networking and the attention is focused on embedded social assets and the way in which they interact with motivational factors and knowledge sharing in such a context, characterized by a hybrid social network infrastructure.

Besides, on the basis of preliminary factor analysis, we identified two sub-dimensions of cognitive capital:

a) component related to the existence of a common language;

\(^1\) In cognitive science there are also different but at least partially consistent taxonomies used regarding distinction procedural vs. declarative knowledge, cp. Winograd, 1976; however, detailed analysis of those is the topic of a different study.
b) component related to a common professional background.

**Personal motivation**, as in Chiu et al. (2006), was broken down into two sub-dimensions:

a) motivation oriented towards personal benefits, as a measure of ‘egoistic’ behaviour;
b) motivation oriented towards community benefits, implying the sense of belonging to the community.

Three dimensions of knowledge were taken into account by combining Russell and Nonaka’s dichotomies quoted below:

*Declarative knowledge or know-what.* This is knowledge about facts, consisting of organised data (information) and knowledge about sources of information. It is a simple form of knowledge, supposedly not characterized by relevant inner barriers; the main barriers to its access are rather related to the context and to the involved actors.

*Procedural knowledge or know-how.* This is knowledge about procedures, practical skills. It is characterized by relevant inner barriers, since it is usually tacit. Organisational learning studies investigate the ways through which it can be made explicit. It may be linked to Polanyi’s (1967), Nonaka and Takeuchi’s (1995) tacit knowledge and to Schon’s (1988) knowledge-in-action.

*Conceptual knowledge or know-why.* This is knowledge about laws and principles. It is usually expressed in coded forms and languages, not understandable for everyone; besides, it requires the ability to connect causes and effects. Hence, it is characterized by relevant inner barriers.

**Hypotheses**

Social capital dimensions and personal motivation are supposed to enhance the intensity and quality of knowledge exchange, which, in turn, have a positive effect on the growth of individual knowledge dimensions. As mentioned above, most hypotheses are based on the findings of Tsai and Ghoshal (1998) in the context of inter-unit knowledge exchange in large organisations and on Chiu et al. (2006) study of knowledge transfer in virtual communities. The hypotheses are listed below.

**Relations between social capital dimensions**

*Hypothesis 1.* Communication (a) and profession-related (b) cognitive social capital positively affect relational capital. Tsai and Ghoshal (1998) found support for the hypothesis, which implies a positive effect of shared vision on perceived trustworthiness.

**Effects of social capital on personal motivation**

*Hypothesis 2.* Relational capital positively affects altruistic personal motivation. It is supposed that a trustful climate enables community-oriented behaviour.

*Hypothesis 3.* Language-related (a) and profession-related (b) cognitive social capital positively affect community-oriented personal motivation. It is supposed that a common language and terminology and the perception of common interests may lead to strongest community linkages and the sense of belonging.

*Hypothesis 4.* Language-related (a) and profession-related (b) cognitive social capital positively affect egoistic personal motivation. It is supposed that a common language and terminology and the perception of common interests, may lead to behaviour aimed at collecting useful information and knowledge for personal benefits.

**Effects of social capital and personal motivation on the quality of knowledge**

*Hypothesis 5.* Relational social capital positively affects knowledge quality. Trust is found to be an antecedent of knowledge exchange both in organisations (Tsai and Ghoshal, 1998) and virtual communities (Ridings et al., 2002). Chiu et al. (2006) found empirical evidence that various dimensions of relational capital affect not only the intensity but also quality of knowledge exchange in virtual communities.

*Hypothesis 6.* Both community benefits (a) and personal benefits (b) oriented personal motivation affect knowledge quality. Various studies (e.g., Butler et al., 2002; Zhang and Hiltz, 2003) suggested that personal expectations (both egoistic and altruistic) play a relevant role in the will of people to share knowledge within communities and organisations. Chiu et al. (2006) found partial empirical support for such hypotheses.

**Effect of social capital and personal motivation on individual knowledge growth**

*Hypothesis 7.* Cognitive (profession-based) social capital positively affects (a) procedural and (b) conceptual knowledge. It may be supposed that interactions with people who have the same background may lead to increase of procedural and conceptual skills.

*Hypothesis 8.* Both community benefits (a) and personal benefits (b) oriented personal motivation affect declarative knowledge.

**Effects of knowledge exchange quality on individual knowledge growth**

*Hypothesis 9.* Knowledge exchange quality affects the growth of declarative knowledge. Szulanski (1996) found evidence of causal ambiguity being the main barrier to access knowledge in organ-
isations. Therefore, it seems reasonable to hypothesize that personal knowledge growth is affected by the quality (in terms of reliability, accurateness, completeness) of sharing.

Relations between knowledge dimensions

Hypothesis 10. Declarative knowledge affects (a) procedural and (b) conceptual knowledge. It is supposed that (at least to some extent) the individual’s information base affects his beliefs and practical skills.

Hypothesis 11. Conceptual and procedural knowledge positively correlate.

Besides, a default hypothesis for structural equation modelling (that is, correlation between exogenous variables – in this case, the two sub-dimensions of cognitive capital) is included in the model.

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**Empirical analysis: methodology and data**

The hypothesized model is a recursive one, i.e. it follows the patterns of path analysis (Bollen, 1989): effects are structured according to a causal chain from left to right, lacking loop effects.

As mentioned above, the model was tested on the basis of a survey of a big community of the National Library of Latvia users. However, due to timing problems, structural analysis described in this paper was based only on 12 observations. The amount of observations is sufficient to be considered reliable in statistical terms for general analysis; however, it was not possible to test results against control dimensions (socio-demographic factors, preference of the use of virtual/physical social channels). Therefore, analysis is meant as a pilot one, to be further integrated on the basis of a larger sample.

Because of the complex nature of the hypothesized cause-effect patterns and the ambivalent (both dependent and independent) role of intermediate variables, the chosen approach to model analysis was structural equation modelling (Joreskog and Sorbom, 1979). A particular nature of the variables, most of which were measured on psychometric scales and therefore were non-metric (Stevens, 1952) led to the choice of an ad-hoc estimation method, Bayesian estimation, which is a standard technique for the analysis of ordinal variables-based models in the chosen software (Amos 7.0, integrated in SPSS 15.0).

**Analysis of research results**

Results supported the significance of the most hypotheses, with two exceptions:
- **Hypothesis 3b** was found to be non-significant; cognitive capital based on professional proximity was not a relevant factor for community motivation building.
- The default option on the correlation of the two exogenous variables was also found to be non-significant, which seems to imply the absence of common predicting factors outside the model.

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**Fig. 1. Theoretical model**
Besides, some unexpected significant direct effects were found:

**Relational social capital positively affects declarative knowledge.** Such a finding seems to suggest that the impact of trust on information sharing does not only depend on the way trust affects sharing quality and the community sense of belonging but also has a direct component. However, such a direct effect was found to be relatively weak.

**Community-oriented motivation positively affects procedural and conceptual knowledge.** Such findings imply that community-related motivational factors affect the individual growth of complex forms of knowledge. This partially contradicts the work of Szulanski (1996). Such a finding was quite surprising since, at first sight, access to procedural and conceptual knowledge would seem to be mainly impeded by inner rather than motivational barriers.

The adaptation of the model (including the above mentioned unexpected significant effects) to data was good ($P=.510$). Besides, it is worth noting that squared multiple correlations were relatively high, implying that the explicative power of the model with regard to endogenous variables was acceptable.

**Fig. 2. Results (standardized direct effects)**

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**Conclusions**

Results seem to support some common findings in organisational and community literature, whereas some unexpected effects were found, which may depend on the specific nature of hybrid communities. The main and most significant results may be summarized as following:

- Social capital dimensions positively affect (either directly or indirectly) knowledge quality exchange and individual knowledge growth. This confirms the findings of several social capital-based studies in organisational literature (Tsai and Ghoshal, 1998; Chiu et al., 2006)

- This said, different social capital dimensions play different roles with regard to the investigated dynamics. In particular, relational (trust) capital is a relevant factor behind information access and knowledge sharing both directly and in an indirect way (by fostering community-related motivation). Cognitive capital sub-dimensions have an indirect impact on information access and knowledge sharing by fostering both relational capital and motivational factors; besides, the profession-related dimension of cognitive capital (which implies a common knowledge base between interacting individuals) has a direct impact on the growth of complex forms of knowledge.

- Unexpectedly, as mentioned above, community-oriented motivation is a predictor of individual knowledge growth even with regard to com-

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\[\text{2 Solid lines: significant effects} \\
\text{Dash-dot lines: unexpected significant effects} \\
\text{***: significant at 99% confidence level (error probability < 0.01)} \\
\text{**: significant at 95% confidence level (error probability < 0.05)} \\
\text{*: significant at 90% confidence level (error probability < 0.1)}\]
plex forms of knowledge. Therefore, motivational factors (in particular when expressing a collective benefits-oriented attitude) seem to play a more relevant role than the quality of knowledge exchange in enhancing access to knowledge. Such findings seem to contradict partially to the studies of Szulanski (1996) who identified inner barriers to knowledge as more relevant than motivational ones. This finding, however, supports the conception of collaborative and collective epistemic agency of social communities (Gilbert, 2004, Tomasello, 2009).

• In general, social patterns of knowledge access and growth look very rich in their variety. This may support Wellman’s (2001) and Hampton and Wellman’s (2003) claims about a positive complementary role played by ICTs and face-to-face contacts in fostering socio-cognitive dynamics in communities (e.g., ICTs may foster weak ties that span structural holes; see Burt, 2000). An interesting question that cannot be answered using the present methodology is: are virtual links psychologically less significant than face-to-face ones? Perhaps the answer is more complex and depends on the communicative situation, there might be psychologically more real virtual links and there might be also psychologically more real face-to-face links. We may hypothesize that the determining factor is not the format or channel specificity but the meaning assigned to the message and to the actors within the situation.

As said above, this empirical analysis should be strictly interpreted as a pilot one. Results will be further tested in the future with a larger sample of individual observations, what may allow to compare socio-cognitive patterns among users on the basis of their preferences in the use of physical or virtual social networking. Besides, further analysis will test the sensitivity of results to control variables of a socio-demographic and socio-economic nature, what may help identify intra-community divides accounting for differences in socio-cognitive dynamics (see Lamont, 1992).

References
Génération des actifs sociaux et partage des connaissances dans une communauté intentionnelle hybride: une analyse pilote de la Lettonie

Resume

Le rôle de l’infrastructure des TIC dans l’amélioration des processus d’innovation favorisant l’échange de connaissances et d’information est un sujet controversé dans la science régionale. Des points de vue opposés existent, en particulier, en ce qui concerne deux thèmes: a) la persistance d’un rôle spécifique de la proximité géographique dans les processus d’échange de connaissances à l’ère du réseau virtuel planétaire; b) la capacité du réseau virtuel de recréer les biens sociaux d’une communauté physique (la confiance, la solidarité, etc...). Notre essai représente une tentative de contribuer à ce débat, en adoptant des analyses centrées sur le niveau micro (individuel), et en outre une formalisation plus complexe de la dynamique sociale, et une réflexion plus approfondie sur la nature des facteurs cognitifs en jeu. En particulier, on examine la dynamique de construction des acteurs sociaux et l’échange de connaissances entre les membres d’une communauté hybride - c’est-à-dire une communauté intentionnelle (en particulier, la communauté des utilisateurs de la Bibliothèque nationale de Lettonie), basée sur une infrastructure hybride sociale composée de ligne et hors ligne (face-à-face). Cela veut dire sans doute que les communautés hybrides ont un effet particulier sur l’auto-catégorisation de l’identité des individus, car elles favorisent des extensions cognitives du soi à la fois en face-à-face et par des canaux virtuels. Le cadre sur lequel le modèle analytique est basé repose principalement sur la théorie du capital social (en particulier, sur le travail de Nahapiet et Ghoshal (1998)), sur les théories de psychologie sociale (catégorisation sociale et apprentissage), et sur des taxonomies pertinentes de l’épistémologie moderne théorique et appliquée, en vue d’adopter un point de vue non-monolithique en ce qui concerne la connaissance partageable. En outre, il s’appuie sur l’analyse de Chiu et al. (2006) à propos de l’échange de connaissances au dedans des communautés virtuelles d’organisation. Le modèle théorique proposé est basé sur les macrofacteurs suivants: a) les deux dimensions...
principales du capital social (relationnel et cognitif, selon Nahapiet et Ghoshal), b) la motivation individuelle pour l’activité des communautés; c) la qualité de l’échange de connaissances, d) les connaissances partageables. Le modèle qu’on propose ici suppose un effet positif de la proximité cognitive ou cognitive du capital social (c’est-à-dire l’existence d’une langue commune ou d’une histoire commune entre les utilisateurs professionnels) sur le capital social relationnel (confiance), axé sur la communauté et sur les facteurs égoïstes de motivation, et donc sur la qualité de l’échange de connaissances: ce qui devrait améliorer à son tour la croissance des différentes dimensions de la connaissance individuelle (déclaratives, procédurales et cognitives). Les données psychométriques recueillies au niveau micro (individuel) parmi les 142 membres de la communauté de la Bibliothèque nationale de Lettonie, et mesurées sur des échelles de Likert, sont analysées par une analyse factorielle préliminaire pour obtenir leur réduction, puis grâce à la modélisation par équations structurelles pour tester les hypothèses du modèle. On adopte donc une technique d’estimation spécifique (estimation bayésienne) pour psychométriques (ordinal) variables. L’analyse se propose en forme d’un projet pilote. Bien que la quantité d’observations soit suffisante pour être considérée comme fiable, elle ne l’est pas assez, en effet, pour permettre de vérifier la robustesse du modèle en ce qui concerne les variables de contrôle.

Les données montrent à la fois des résultats communs et cohérents avec l’organisation de premier plan et avec plusieurs études sur les communautés: en particulier, les dimensions du capital social se trouvent à affecter positivement (directement ou indirectement) à la fois la qualité de l’échange des connaissances et la croissance des connaissances individuelles, à travers une grande variété de modèles. Cependant, certains résultats inattendus sont également présents: en particulier, la motivation axée sur la communauté, ayant comme but de produire un avantage, c’est un facteur prédictif de croissance de la connaissance individuelle, même pour ce qui se réfère aux formes complexes de la connaissance. Par conséquent, les facteurs de motivation (en particulier lors de l’expression collective d’une attitude axée sur les avantages) semblent jouer un rôle plus important que la qualité de l’échange de connaissances dans l’amélioration de l’accès aux connaissances.

Par ailleurs, la richesse des schémas identifiés pour le partage des connaissances et pour la croissance semble souligner un rôle positif complémentaire des infrastructures sociales et du réseau.

Les résultats de l’analyse suggèrent de réaliser un autre modèle de test, qu’on pourrait effectuer sur la base d’un échantillon plus important, afin d’identifier les différences entre les motifs qui caractérisent principalement le face-à-face, ou bien au contraire les utilisateurs virtuels, et d’identifier aussi d’autres facteurs intra-communautaires possibles, c’est à dire des critères socio-économiques et des différences socio-démographiques.

**Mots-clés:** communautés hybrides, capital social, partage des connaissances, modélisation par équations structurelles.

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