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Process capital of Mongolia: Year 2005-2014

By Tzu-Yorn KAO ^{a†} & Margad-Erdene SANDUI ^b

Abstract. The purpose of this study is to explore and explain what the process capital of Mongolia is, and its national wealth that affect and being affected by national competitive advantage. Using secondary data from worldwide sources in the last 10 years, process capital at national level of analysis was analyzed. Mongolians try to use the limited capital of mining first, but they need to develop knowledge about the more structural part of this nation's capital framework just to assist industry of limited resources. We propose that this is an important part for business decision-making of policy generation that can be a reference for foreign investors.

Keywords. Process capital, National wealth, Intangible assets, Mongolia.

JEL. M10, M11, M14.


1. Introduction

In Mongolia, people live in such a rigorous weather that exists between -40 in winter and +40 in summer. From this, people can know that Mongolians are very adaptable, and are capable to think freely with action agility. In addition to tangible resources such as natural mining resources, however, Mongolians should know their hidden values that come from significant aspects of the large national economic "machines", including human, knowledge process, and financial capitals.

Process capital is one critical factor that is formalized in the research of national intellectual capital, inspired from the seminal book of Lin & Edvinsson (2011). Intellectual capital is promoted, measured and valued mainly at the micro-economics level but we need to know more about value of intangible assets and how to benchmark these between countries. At the national level, though intellectual capital is hard to measure (Bontis, 2001, 2004; Weziak, 2007), the worth is in serving as an addition to GDP, which might forecast future national wealth, is effectively identified. As a solution, more world organizations and researchers intend to investigate this future-oriented national topic.

In sum, it is worthy for a nation like Mongolia to conduct a research on structural capital at national level. Then, why is it a right time to witness Mongolia as important and suitable for such kind of study? Mongolia has bribes in every stage of government, even in choosing the members of parliament. Real politicians are not members of Parliament but it is instead businessmen who are elected by the public. It's because the era of "democracy" began. An increasing support from the government can facilitate the value of every kind of important capitals, including the process capital. Nonetheless, advance knowledge about how to utilize national capital well must be first be created as a premise. After that we would have opportunity and capability to acquire, use and share. It will give us the opportunity to become a nation which creates and uses intangible aspect of the nation's

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structure, and to have a knowledge-based economy. In sum, process capitalis extremely in this age of Mongolian’s development (Garcia-Ayuso, 2003).

Process capitalin not only a phenomenon within organizations. We can research it in higher level which is National intellectual capital. Researchers have moved to intention. Moreover, *process capitals* the cooperation and flow of knowledge that require structural intellectual assets, such as information systems, hardware, software, databases, laboratories, and national infrastructure, including transportation, information technology skills, communications and computerization, technological readiness and telecom services, personal computers, cellular subscribers, cyber security, quality scientific research institutions, knowledge relocate, legal environment for businessmen, the least days to begin a business, a quality management system, and agricultural productivity. This kind of intellectual assets support and grow the return of human capital.

2. Methodology

We followed and adopted the NIC40 models because it is most updated and commonly accepted academically (Lin & Edvinsson, 2011). The data were collected through several sources, including the OECD database, the World Competitiveness Yearbook published by the IMD and the World Bank database. After having the data, there were many missing values in the datasets; therefore, we had to substitute some of the indicators to act as a proxy measure. In addition to missing values, some values were not up-to-date. For example: The Scientific articles indicator was missing data last year of. In the Tables 1 demonstrates the indicators used in this study for each type of capital. The table compares the NICI40 indicators to the proxy measure indicators used in this study.

Table 1. Proxy Indicator for Process Capital

Process Capital Indicators		
	NICI40	MINE
1	Business competition environment	CPIA business regulatory environment
2	Government efficiency	Business extent of disclosure
3	Intellectual property rights protection	same
4	Capital availability	Firms using bank to finance investment
5	Computers in us eper capita	same
6	Convenience of establishing new firms	Ease of doing business
7	Mobile phone subscribes	same

Business regulatory environment - Assesses the extent to which the legal, regulatory, and policy environments help or hinder private businesses in investing, creating jobs, and becoming more productive.

Business extent of disclosure index - measures the extent to which investors are protected through disclosure of ownership and financial information.

Firms using banks to finance investment - are the percentage of firms using banks to finance investments.

Ease of doing business ranks economies from 1 to 189, with first place being the best. A high ranking (a low numerical rank) means that the regulatory environment is conducive to business operation.

3. Result and Discussion

In this section, we will present the findings, analysis, and interpretations that derived from the data collected and to produce a meaningful way to facilitate the discussion. The following trends will show each of the indicators from process capitals with their figures.

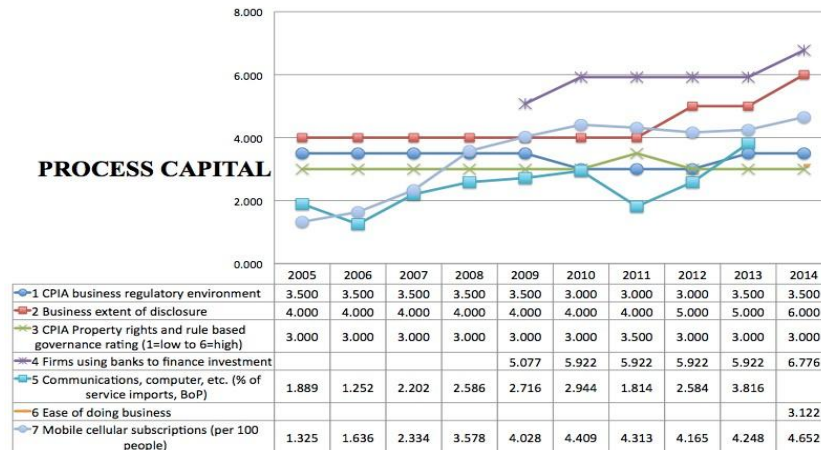


Figure 1. The numbers and trends of Mongolia's Process Capital

Figure 1 shows that trends of process capital in Mongolia with Firms using bank to finance investment has the highest score (6,776) and the lowest indicator is Mobile cellular subscriptions (1.889 in 2005). Even Mobile subscriptions is the lowest indicator in 2005, it has been increased constantly until 2012. According to the Communications Regulatory Commissions of Mongolia (CRCM) reported that the number of people who actively used mobile phones reached 3 million and this number exceeded the population. However, 1.6 million of the population is using smartphones to connect to internet, it demonstrates that use of smartphones in Mongolia has reached 55 percent, which is close to United states (57%).

From the year of 2009 the Firms using banks to finance investment shows possible rating for process capital and this indicator is the highest of all of 10 years. But the lowest one is the Communications, computer in 2005 (1.889) but it has been increased until 2013 (3.816).

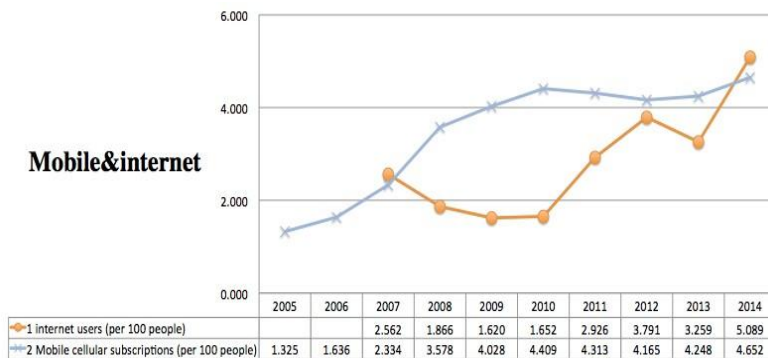


Figure 2. Comparison of Mobile Subscriptions & internet users

This graph illustrates comparison of mobile cellular subscriptions and internet users in Mongolia period of 2005-2014. Mongolia possesses a competitive telecoms market served by several competing players and formal operators that no longer holds a dominant share of its market. Operators have been focused on expanding network reach and capacity to improve the growing population of fixed and mobile broadband services.

From this graph, we can see that very interesting statement that internet users were always lower than mobile subscriptions except in 2014. Most of the countries it's in contrary to this situation, such as in Taiwan they use internet always if they have mobile phone, but in Mongolia it's not always useable when you have smartphone but do not have internet. It might be because of geographical issue, Mongolia has huge and wide territory. And it's not easy to cover all the places.

4. Conclusion and suggestions

The main aim of this study was to give perception of Intellectual capital of Mongolia to policy makers and any investors who are interested to make business or cooperation with Mongolian companies. Based on the discoveries of each types of indicators are the clearer conclusion of indicators and capitals and where is improvement needed and which has more strategic advantages than others (Edvinsson, 2002).

When we compare to the book there could be two implications related to this study: Firstly, we might suggest to government about which sector should be improved how to benchmark. Therefore, it would be helpful for government and policy maker where should they take attention. Secondly, NIC research is not every country evaluated as the same indicators. They have data, but we do not have large international project NIC40 book.

The limitation and so research direction in the future. of this research includes following: 1. A required compound of quantitative and qualitative scores on a scale of 1-10 might decrease the differences. 2. The value of the result depend much on the quality of the data in World Bank database, especially for the qualitative rating. 3. The variables of all capital can be filled following by researcher's insights of their significance, while some of them might have unlike standard of significance. Statistics could be divided by two or three terms of time, for example the first five years and the second five years, that can be estimated to define some essential resemblances and dissimilarity between those two periods. 4. The research might be reduplicated every season or year; it would be specifically very important in the matter of making it feasible to study the rank and tendency of a country 5. Different types of intellectual capital or indicators of capitals are examined as relationships, it could provide further comprehension.

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