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Tel: +1-323-984-7526, 323-410-1082 Fax: +1-323-984-7374, 323-908-0457

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9460 Telstar Ave Suite 5, EL Monte, CA 91731, USA

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Domenico Celenza, Fabrizio Rossi

Domenico Celenza, Ph.D. in Business Economics, Researcher in Business Economics, Department of Economics and Law, University of Cassino and Southern Lazio.

Fabrizio Rossi, Ph.D. in Management Engineering, Adjunct Professor of Economics and Business Organisation, Department of Electrical and Information Engineering, University of Cassino and Southern Lazio.

Correspondence concerning this article should be addressed to Fabrizio Rossi, University of Cassino and Southern Lazio, Via G. Di Biasio 43, Cassino, Italy. E-mail: f.rossi@unicas.it.

Optimum Currency Areas and Synchronization of Business Cycles in Sub-Saharan Africa

Yaya Sissoko

Indiana University of Pennsylvania, Indiana, USA

This paper investigates the theory of optimum currency areas in Sub-Saharan Africa (SSA). This issue is examined in a context of small open economies of SSA using a structural vector auto-regression (VAR) approach with limited capital mobility and a weak-banking system in Africa. A structural VAR implies long run restrictions of a small open economy model to identify the shocks. Using annual data series for 30 SSA countries from 1960 to 2000, the findings suggest similar terms of trade and trade balance disturbances in the Communauté Financière Africaine (CFA) and non-CFA countries in contrast to the supply and demand shocks which tend to influence the non-CFA zone to a greater extent. The sizes of the disturbances and the speed of adjustment confirm that the CFA and non-CFA countries are suitable of forming a monetary union. The adjustment speed is on average nine to 18 months in the CFA zone and 12 to 24 months in the non-CFA zone. These results also suggest the creation of smaller monetary arrangements in the CFA and non-CFA regions as preliminary steps in creating one monetary union in Africa. The findings support evidence of weaker business cycle synchronization in Sub-Saharan Africa.

Keywords: optimum currency areas theory, African monetary unification, vector auto-regression, size and speed of adjustment

Introduction

The idea for monetary union has been around for a while. The globalization and the internationalization of the world economy push countries to get together and create a monetary unification. But, there are costs and benefits of forming a monetary union. Mundell (1961, 1968) rightly considered as the father of the Optimal Currency Areas (OCA) theory, discussed the conditions for the realization of a monetary unification with a single currency. To achieve an OCA, countries should be economically integrated and have some experiences of flexible exchange rate regime. Factors of production should move freely within the area with stable relative prices. The size of the economy is a key factor. The theory of OCA also requires a single currency with a single central bank without losing reserves and impairing convertibility. This means national central banks have to give up their sovereignty over their own currency. Furthermore, Mundell (1999)¹ underlined seven criteria to realize a monetary union. First, there should be a large transactions area in order to have a low, flat transaction cost. Second, monetary policy should be stable. An unstable monetary policy could result in an unstable real money balances. Third, there should be no controls by the governments of the monetary union. Of course, this

Yaya Sissoko, Dr., Associate Professor of Economics, Department of Economics, Indiana University of Pennsylvania. Correspondence concerning this article should be addressed to Dr. Yaya Sissoko, Department of Economics, 213E McElhaney Hall, Indiana University of PA, Indiana, PA 15705, USA. E-mail: ysissoko@iup.edu.

¹ See Mckinnon (1963) and Kenen (1969) for further discussion on the theory of OCA.

is a difficult task given the political situation in each country member of the union. The fourth feature is the need of a strong central state to avoid the collapse of its currency when the country is invaded. The fifth factor is a central bank committed to stabilize the prices. To achieve this criterion, the central bank has to hold substantial gold reserves and foreign exchange reserves. The sixth feature is a sense of permanence. There should be a belief that the monetary union and the currency are going to be here forever, not just for a limited period of time. Finally, the OCA should provide low interest rates for the single currency to dominate and prevail as a currency bloc. In the end, there should be a Euro bloc, which has already started in the European Monetary Union².

Bayoumi and Eichengreen (1992, 1994) empirically investigated the OCA theory in light of a monetary union in Western Europe, Asia and the United States using a structural VAR to identify the incidence of aggregate supply and demand shocks. Countries experiencing symmetric or similar disturbances of aggregate supply and aggregate demand would form a monetary union. Of course, the size of the disturbances and the speed of adjustment will matter. They find that there should be a Northern European bloc, a Northeast Asian bloc and Southeast Asian bloc. The Americas region is less plausible as candidate for a monetary unification but the United States, Canada, and possibly Mexico may get together to form the North American bloc. Moreover, Horváth and Grabowski (1997) found that asymmetric supply disturbances across African countries and symmetric demand shocks across African regions during the 1960-1992 period. These regions include Northern, Western, Eastern, and Southern Africa. Their findings make the African continent to be a less plausible candidate for monetary union but monetary arrangements might be possible at a smaller scale.

Bayoumi and Eichengreen (1997) suggested that economic integration and monetary integration went together. They apply the OCA theory to the European countries by computing an OCA index. The OCA index is driven by the relative size of the country and the degree of economic integration. Eichengreen (1997) argued that Europe was an OCA since European countries experience region-specific shocks and a higher variability of real exchange rates than the United States and Canada. Furthermore, Bayoumi and Eichengreen (1998) showed that the patterns of exchange rate variability and intervention across countries using the theory of OCA. Countries experiencing larger asymmetric shocks are countries with more flexible exchange rates. Bayoumi, Eichengreen, and Mauro (1999) investigated the feasibility of monetary arrangements for ASEAN³. They identify gradual steps such as standard economic criteria, higher level of intra-regional trade, and firm political commitment for the ASEAN to achieve a monetary unification.

More importantly, Frankel and Rose (1998) outlined four criteria of forming a potential OCA. The first factor is the extent of trade, that is, the trading intensity with other potential members of the currency union. The degree of openness of potential members of an OCA depends of their economic integration, which leads to low transaction costs and risks associated with different currencies. The second criterion is the similarity of the shocks and the cycles. Countries might experience closer international trade linkages when they do a lot of intra-industry trades which in turn, leads to similar business cycles. The degree of mobility of labor is the third criterion. Factors of production should move freely between regions according to their marginal productivity. The last feature is the system of risk sharing with respect to fiscal transfers. This is known as the balanced

² The European Monetary Union, created by the Maastricht treaty (1993), includes currently 27 members.

³ ASEAN consists of 10 countries, namely, Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

budget or fairness criterion. Countries with a huge budget deficit should not transfer their burdens to countries with a balanced budget or small budget deficit. Frankel and Rose (1998) focused on the former two criteria known as the “Lucas Critique”. They consider that international trade and international business cycles are endogenously correlated. That is, trade integration leads to more international trade, which in turn will result in high correlations of business cycles across countries. Countries with the same or close international trading partners will benefit from a monetary unification. The benefits of joining a monetary union have to be higher than the associated costs, namely, transaction costs and loss of monetary independence costs.

Sub-Saharan Africa (SSA) already has two monetary unifications. The first one consists of seven countries in West Africa and six countries in Central Africa plus the Islamic Federal Republic of Comoros. The single currency used is the CFA Franc (CFAF)⁴. The Comoros Franc (CF) is the currency in Comoros Island. The CFA Franc Zone was created in 1946 after the Second World War⁵. The CFA Franc was originally pegged to the French Franc. The French Treasury provides foreign exchange reserves to the CFA Franc Zone and maintains a freely convertibility vis-à-vis the French Franc (FF). However, the CFA Franc is now pegged since 1999 to the Euro, the currency of the European Union⁶. The second currency union in SSA is the Common Monetary Area (CMA) in Southern African, which includes South Africa Republic, Lesotho, Namibia, and Swaziland. Bank notes issued by these countries are freely convertible into the South African Rand.

Bayoumi and Ostry (1997) applied the theory of OCA to SSA countries by investigating the size and correlation of the real disturbances across countries and the level of intra-regional trade. According to the theory of OCA, the benefits of forming a monetary union are lower transaction costs and the elimination of the exchange rate variability while the cost is the loss of monetary sovereignty. Assuming the same speed of adjustment, if countries face similar or symmetric disturbances then they will gain from forming a monetary union. Of course, the benefits depend upon the degree of diversification of their export commodity base. That is, the desirability of monetary unification should decrease with the degree of specialization of production. Other factors such as the poor quality of the data, the complement of the production structure, the poor local and intra-regional transportation and communications networks might explain the asymmetric of African trade disturbances.

A monetary union requires that the participating countries give up their sovereignty over the national currency and monetary policy. A unified monetary system implies some costs and benefits shared by the member countries. The main objective of this paper is to examine whether SSA countries should form one or more monetary arrangements in the light of the theory of an OCA. Another objective is the synchronization of business cycles in SSA countries. The economic integration of SSA countries will tend to raise the inter-linkages of their business cycles.

The remaining of this paper is as followed: The first section discusses the introduction and review literature. The second section contains the methodology and model identification. The data set, the unit root test and empirical results are mentioned in the third section. The last section concludes and draws the policy implications of the study.

⁴ The CFA stands for the “Communauté Financière Africaine” in the West African Economic and Monetary Union (WAEMU) and for the “Coopération Financière en Afrique Centrale” in the Central African Economic and Monetary Union (CAEMC).

⁵ See Clement et al. (1996).

⁶ The exchange rate is 1 French Franc (FF) for 50 CFAF before the 1994 devaluation and 100 CFAF after and 1 Euro for 655.957 CFAF.

Model and Methodology

The analysis of the theory of an OCA is used to determine potential members of a monetary union. Potential members of an OCA tend to have synchronized business cycles (Bayoumi & Eichengreen, 1992, 1994). Roughly speaking, the partners of synchronization depend upon the mechanism of transmission via common shocks or a weaker form of transmission.

A structural Vector Auto Regression (VAR) framework is used first to assess the possibility of one or more OCAs in SSA countries. This methodology follows Blanchard and Quah (1989).

Consider a small open economy with limited capital mobility. Political instability and weak financial/institutional infrastructure in SSA suggest that it is inappropriate to assume uncovered interest parity. In what follows, one can adapt a small open economy aggregate supply/aggregate demand (AS/AD) model to reflect exogenous capital mobility that may be more appropriate for SSA. The following equations provide the elements of such a model that will provide the restrictions to identify the shocks within a structural VAR framework:

$$\text{Terms of trade} \quad h_t = h_{t-1} + \varepsilon_t^h \quad (1)$$

$$\text{Aggregate Supply} \quad y_t^s = \bar{y}_t + \theta h_t \quad (2)$$

$$\text{Evolution of Capacity output} \quad \bar{y}_t = \bar{y}_{t-1} + \varepsilon_t^s \quad (3)$$

$$\text{Trade balance} \quad nx_t = \eta_1(s_t - p_t) - \eta_2 y_t + z_t = 0 \quad (4)$$

$$\text{Trade balance shock} \quad z_t = z_{t-1} + \varepsilon_t \quad (5)$$

$$\text{Aggregate Demand (AD)/IS} \quad y_t^d = d_t - \gamma[i_t - E_t(p_{t+1} - p_t)] - z_t \quad (6)$$

$$\text{Evolution of autonomous AD} \quad d_t = d_{t-1} + \varepsilon_t^d \quad (7)$$

$$\text{Money demand} \quad m_t^d = p_t + y_t - \lambda i_t \quad (8)$$

$$\text{Money supply} \quad m_t^s = m_{t-1}^s + \varepsilon_t^m \quad (9)$$

$$\text{Goods market equilibrium} \quad y_t^s = y_t^d = y_t \quad (10)$$

$$\text{Money market equilibrium} \quad m_t^s = m_t^d = m_t \quad (11)$$

where h = terms of trade as proxied by the relative price of the primary export commodity; y = real GDP; \bar{y} = capacity output; i = nominal interest rate; s = nominal exchange rate (e.g., CFA Franc per dollar); p = domestic price level; m = money stock; d = autonomous aggregate demand, all variables except the interest rate are in logarithms; E_t is the conditional expectations parameter, and all Greek parameters are positive.

The observed movements in the variables are due to five mutually uncorrelated “structural” shocks with finite variances. These are terms of trade shocks— ε_t^h ; aggregate supply shocks— ε_t^s ; trade balance shocks— ε_t^z ; aggregate demand or real demand shocks— ε_t^d ; and money supply shocks— ε_t^m .

Equation (1) is the evolution of the world oil or export commodity price, which is assumed to be exogenous. Equation (2) is an aggregate supply equation, where aggregate supply depends on capacity output and terms of trade (world oil price or export commodity price). Capacity output in equation (3) is a function of the productive capacity of the economy (e.g., capital stock and human capital or employment), and for simplicity, is assumed to be a random walk process. The balance on goods and services (equation (4)) is assumed to be a function of the real exchange rate, $(s_t - p_t)$ and domestic real income. For simplicity, normalize the foreign price level to unity, so that $(s_t - p_t)$ measures the relative price of foreign goods in terms of domestic goods. Although the author labels z_t a trade balance shock, it can capture capital flows

shocks, or exogenous shifts in imports or exports. Equation (5) implies that the exogenous part of the trade balance shocks follow a random walk.

Equation (6) is a conventional aggregate demand (IS) equation where aggregate spending depends on the expected real interest rate and the exogenously given level of the trade balance. The autonomous portion of aggregate demand— d_t , is assumed to follow a random walk in equation (7). Equation (8) is a conventional money demand equation with unitary income elasticity. Equation (9) is the evolution of money supply, which for simplicity, is assumed to follow a random walk. Finally, the model is closed by postulation of goods and money market equilibrium relationships (equations (10) and (11)).

In order to solve the model, eliminate the interest rate from equation (6) using equation (8) to get:

$$p_t = \left(\frac{\lambda\gamma}{1+\lambda\gamma}\right)E_t p_{t+1} \left(\frac{\lambda}{1+\lambda\gamma}\right)(d_t - z_t) + \left(\frac{1}{1+\lambda\gamma}\right)m_t - \left(\frac{1+\lambda}{1+\lambda\gamma}\right)y_t \quad (12)$$

This is a first order expectational difference equation in the price level. Note that for finite values of the parameters, and assuming that $\lambda\gamma \neq 1$, the forward-looking solution is convergent. With rational expectations, and given the stochastic processes for the exogenous variables in equations (1), (3), (5), (7), and (9), the forward looking solution for the price level is given by:

$$p_t = m_t + \lambda(d_t - z_t) - (1 + \lambda)y_t \quad (13)$$

From equation (13), Equilibrium real money balances are:

$$m_t - p_t = \lambda(z_t - d_t) + (1 + \lambda)y_t \quad (14)$$

The equilibrium real exchange rate, which is compatible with trade balance, is obtained using equation (4):

$$s_t - p_t = \frac{\eta_2}{\eta_1} y_t - \frac{1}{\eta_1} z_t \quad (15)$$

It can be shown that the long run impact of the structural shocks on the endogenous variables has a peculiar triangular structure⁷. In order to show the long run impact of the five structural shocks

$\varepsilon_t = [\varepsilon_t^h, \varepsilon_t^s, \varepsilon_t^z, \varepsilon_t^d, \varepsilon_t^m]$ on the system of endogenous variables $X_t = [h_t, y_t, (s_t - p_t)(m_t - p_t), p_t]$, there

is need to express the solution to the model in first differences:

$$\Delta h_t = \varepsilon_t^h \quad (16)$$

$$\Delta y_t = \theta\varepsilon_t^h + \varepsilon_t^s \quad (17)$$

$$\Delta(s_t - p_t) = \left(\frac{\eta_2}{\eta_1}\right)(\theta\varepsilon_t^h + \varepsilon_t^s) - \left(\frac{1}{\eta_1}\right)\varepsilon_t^z \quad (18)$$

$$\Delta(m_t - p_t) = \lambda(\varepsilon_t^z - \varepsilon_t^d) + (1 + \lambda)(\theta\varepsilon_t^h + \varepsilon_t^s) \quad (19)$$

$$\Delta p_t = \lambda(\varepsilon_t^d - \varepsilon_t^z) - (1 + \lambda)(\theta\varepsilon_t^h + \varepsilon_t^s) + \varepsilon_t^m \quad (20)$$

Note that although endogenous variables have unit roots, all are difference stationary. The long-run impact of the structural shocks on the endogenous variables is triangular. Specifically, all shocks except terms of trade shocks have no long-term effect on the oil price or the relative price of primary commodity. Real demand, trade balance, and monetary shocks have no long-run impact on output. Real demand and monetary shocks have no long-run impact on the real exchange rate, and monetary shocks have no long-run effect on real money balances.

⁷ See Sissoko and Dibooglu (2006) for similar aggregate demand/aggregate supply triangular long run impact structures.

Given the model structure above, the long-run effects of the shocks of the endogenous variables are given by:

$$\begin{pmatrix} \Delta h_t \\ \Delta y_t \\ \Delta(s_t - p_t) \\ \Delta(m_t - p_t) \\ \Delta p_t \end{pmatrix} = \begin{pmatrix} a_{11} & 0 & 0 & 0 & 0 \\ a_{21} & a_{22}(1) & 0 & 0 & 0 \\ a_{31}(1) & a_{32}(1) & a_{33}(1) & 0 & 0 \\ a_{41}(1) & a_{42}(1) & a_{43}(1) & a_{44}(1) & 0 \\ a_{51}(1) & a_{52}(1) & a_{53}(1) & a_{54}(1) & a_{55}(1) \end{pmatrix} \begin{pmatrix} \varepsilon_t^h \\ \varepsilon_t^s \\ \varepsilon_t^z \\ \varepsilon_t^d \\ \varepsilon_t^m \end{pmatrix} \quad (21)$$

where $a_{ij}(1)$ represents the cumulative long-run effect of shock j on variable i . The zero entries in equation (21) provide the 10 (long-run) restrictions needed to identify the shocks.

Empirical Results

The study covers 30 SSA countries from both the CFA Franc and the non-CFA Franc zones. The CFA countries covered in the study include Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Côte D'Ivoire, Gabon, Mali, Niger, Senegal, and Togo. The non-FCFA countries are Botswana, Burundi, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Nigeria, Rwanda, South African Republic, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe⁸.

The data used in the sample consist of 40 annual observations from 1960 to 2000 taken from the International Financial Statistics (IFS) CD-ROM published by the International Monetary Fund (IMF). The data set includes the following series: terms of trade; output; real exchange rates; real money balances; and price level⁹.

The proper specification of the VAR requires testing for times series properties of the data. The variables are tested for unit roots using the Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmitt-Shin (KPSS) test statistics¹⁰. The ADF test statistics show the null hypothesis of a unit root cannot be rejected at the log level for the data for most of the series in question at five percent significance level. The ADF test statistics also indicate that the variables are stationary in the first differences at the five percent significance level. This makes the use of a VAR appropriate. Moreover, the KPSS test statistics confirm the results of the ADF test. That is, the acceptance of the null hypothesis of the KPSS test makes the use of a VAR in first differences appropriate.

Table 1 shows the mean of the annual average growth rate of output and inflation across the CFA and non-CFA countries for the full period of the data. The non-CFA countries have grown on average faster than the CFA countries during the period of 1960 to 2000. The ratio is 1 to 2 in favor of the non-CFA countries with Botswana leading with a growth rate of output of 9.1% in the non-CFA zone compared with only 6.0% for the Republic of Congo in the CFA zone. However, the CFA countries outperform the non-CFA countries with an annual average inflation rate of 6.7% against 13.1% for the latter. The inflation variability is somewhat smaller across the CFA countries than across the non-CFA countries.

More importantly, SSA countries seem to lag behind other regions of the world in terms of output growth

⁸ This sample covers the bulk of SSA except for the Comoros Islands in the CFA group and Angola, Equatorial Guinea, Guinée, Guinea Bissau, Liberia, Mozambique, Sierra Leone, Somalia, Sudan, and Democratic Republic of Congo (i.e., former Zaire) in the non-CFA group. These dropped from the study because of insufficient data.

⁹ See Sissoko and Dibooglu (2006) for a detailed explanation about the construction of the data.

¹⁰ These results are available from the author upon request.

performance, even though they might have an edge in the area of inflation. Bayoumi and Eichengreen (1994) found that the average annual growth rates of output and inflation were respectively 3.3% and 7.2% for Western European Countries during the 1960-1990 period against 6.0% and 8.4% for East Asia and 3.1% and 4.9% for the Americas including the United States and Canada. The output and inflation variability is somewhat higher across SSA countries than across the countries of the regions of the world considered above¹¹.

Table 1

Annual Average of Output and Inflation Growth Rates—1960 to 2000

	Growth		Inflation	
	Mean	Std. Deviation	Mean	Std. Deviation
CFA countries				
Benin	0.031	0.047	0.108	0.098
Burkina Faso	0.018	0.077	0.048	0.073
Cameroon	0.019	0.055	0.071	0.068
C.A.R.*	0.016	0.106	0.058	0.068
Chad	0.046	0.141	0.053	0.067
Congo	0.030	0.589	0.111	0.102
Cote D'Ivoire	0.027	0.084	0.065	0.062
Gabon	-0.014	0.214	0.063	0.080
Mali	0.022	0.096	0.101	0.091
Niger	-0.005	0.260	0.059	0.091
Senegal	0.016	0.058	0.086	0.108
Togo	-0.015	0.096	0.048	0.135
Average	0.015	0.140	0.067	0.080
Non-CFA countries				
Botswana	0.091	0.069	0.121	0.072
Burundi	-0.006	0.238	0.114	0.093
Ethiopia	0.028	0.044	0.062	0.077
Gambia	0.020	0.256	0.090	0.103
Ghana	0.037	0.083	0.240	0.216
Kenya	0.060	0.157	0.096	0.080
Lesotho	0.028	0.085	0.129	0.053
Madagascar	0.017	0.035	0.126	0.092
Malawi	0.060	0.084	0.207	0.256
Mauritius	0.044	0.070	0.100	0.098
Nigeria	0.038	0.302	0.157	0.147
Rwanda	0.026	0.134	0.106	0.102
South Africa	0.030	0.027	0.087	0.046
Swaziland	0.054	0.083	0.100	0.051
Tanzania	0.049	0.087	0.173	0.082
Uganda	0.078	0.178	0.232	0.330
Zambia	0.034	0.136	0.233	0.284
Zimbabwe	-0.020	0.158	0.117	0.102
Average	0.035	0.117	0.131	0.120

Note. *Central African Republic; Source: IFS CD ROM and Author's own computations.

¹¹ See Bayoumi and Eichengreen (1992) for similar comparative findings between the European countries and the U.S. regions.

Correlation of Supply and Demand Disturbances

Table 2 is the country codes used for the CFA and non-CFA countries. Table 3 displays the results of the correlations of supply shocks above the diagonal and the correlations of demand disturbances below the diagonal. The supply correlation coefficients within the CFA countries and between the CFA and the non-CFA countries do not suggest a clear regional pattern among these countries. Indeed, most of the supply correlations are insignificant within the CFA countries. The non-CFA countries have more significant positive supply correlations than the CFA countries, but still do not show any clear geographical pattern. The correlations of supply shocks between Gambia, Ghana, Malawi, Nigeria, and Uganda are positive and significant suggesting a regional pattern. One possible explanation is perhaps the differences in the economic structures within the CFA and non-CFA countries. These results are similar with the findings of Bayoumi and Eichengreen (1994) that the supply correlations within Europe and the Americas do not feature a clear geographic pattern in contrast to the ones of Asia.

Table 2

Country Codes for CFA and Non-CFA Countries

Country	Country code
CFA countries	
Benin	BE
Burkina Faso	BF
Central African Republic	CA
Cameroon	CR
Congo	CO
Cote D'ivoire	CI
Gabon	GA
Mali	MI
Niger	NI
Senegal	SE
Togo	TO
Non-CFA countries	
Botswana	BO
Burundi	BU
Ethiopia	ET
Gambia	GM
Ghana	GH
Kenya	KE
Lesotho	LE
Madagascar	MA
Malawi	MW
Mauritius	MU
Nigeria	NG
Rwanda	RW
South African republic	SA
Swaziland	SW
Tanzania	TA
Uganda	UG
Zambia	ZA
Zimbabwe	ZI

Table 3
Correlation of Supply and Demand Shocks

	CFA countries												Non-CFA countries																	
	BE	BF	CA	CR	CD	CO	CI	GA	MI	NI	SE	TO	BO	BU	ET	GM	GH	KE	LE	MA	MW	MU	NG	RW	SA	SW	TA	UG	ZA	ZI
BE	---	-0.22	-0.07	0.08	0.06	-0.07	-0.03	-0.22	-0.10	-0.07	-0.03	-0.11	-0.08	-0.01	-0.03	-0.31	-0.29	-0.09	-0.11	-0.07	-0.08	0.01	-0.16	0.12	-0.10	0.05	-0.04	-0.07	0.18	0.06
BF	0.30	---	-0.05	0.18	0.18	0.12	0.23	0.05	0.18	-0.17	0.16	-0.24	-0.01	0.07	-0.03	-0.27	0.06	-0.16	-0.11	0.02	-0.22	0.00	-0.10	-0.07	0.10	0.06	-0.03	-0.03	-0.03	0.44
CA	0.42	0.17	---	-0.23	-0.32	-0.32	0.06	-0.14	0.14	-0.05	-0.21	0.12	-0.02	0.01	-0.07	0.26	-0.07	0.20	-0.01	-0.30	0.09	0.16	-0.32	-0.35	-0.18	-0.07	0.01	0.00	0.33	0.22
CR	0.29	0.38	0.34	---	0.29	-0.00	0.21	0.09	0.04	-0.08	-0.01	-0.05	0.19	0.56	-0.04	-0.35	-0.12	-0.09	0.19	-0.40	-0.17	0.28	-0.23	-0.25	0.43	-0.07	0.22	-0.07	0.19	0.01
CD	0.07	0.27	0.24	0.17	---	-0.41	-0.19	-0.11	-0.38	0.03	0.07	-0.33	0.08	-0.20	-0.09	-0.33	-0.12	-0.15	0.20	0.06	-0.10	0.06	-0.25	0.05	0.28	0.03	0.17	-0.20	-0.14	0.15
CO	0.36	0.46	0.36	0.13	0.09	---	0.10	0.86	0.10	-0.00	-0.08	0.49	0.04	-0.12	0.01	0.08	-0.16	0.32	0.26	-0.14	0.11	-0.12	0.01	-0.27	-0.12	0.10	0.01	0.06	0.14	-0.03
CI	-0.00	0.27	0.01	-0.04	-0.24	0.23	---	0.05	0.37	-0.19	-0.15	-0.05	0.22	0.03	-0.08	0.08	0.09	0.13	-0.03	-0.21	-0.08	0.10	0.13	-0.29	0.09	0.10	0.13	-0.05	0.36	0.16
GA	0.54	0.50	0.51	0.43	0.20	0.43	0.06	---	0.27	-0.13	0.19	-0.03	0.06	0.22	0.18	0.02	0.47	-0.01	-0.11	-0.02	-0.14	-0.10	0.15	0.18	-0.05	-0.08	-0.20	0.37	-0.11	0.14
MI	0.46	0.42	0.46	0.40	0.43	0.25	0.11	0.66	---	0.01	0.03	0.21	0.12	0.33	-0.06	-0.01	0.17	-0.04	-0.12	0.02	0.07	0.08	0.08	-0.15	-0.01	0.07	-0.19	0.22	-0.06	0.25
NI	0.43	0.48	0.33	0.19	0.32	0.32	0.15	0.49	0.58	---	-0.05	0.07	-0.35	-0.08	-0.01	-0.14	-0.01	-0.26	-0.05	0.39	-0.10	-0.14	0.15	-0.02	0.30	-0.03	-0.06	0.34	-0.19	0.17
SE	0.41	0.68	0.49	0.41	0.25	0.52	0.17	0.72	0.68	0.60	---	-0.20	-0.20	0.11	0.14	-0.25	0.06	-0.08	-0.34	0.11	0.04	0.03	-0.07	0.38	0.20	0.25	-0.16	-0.13	-0.07	0.00
TO	0.12	0.17	-0.05	0.07	0.14	0.28	0.10	0.07	0.31	0.16	0.31	---	0.27	-0.06	0.02	0.29	-0.04	0.22	0.01	0.11	-0.07	-0.05	0.18	-0.15	0.05	-0.08	0.02	0.24	-0.04	-0.03
BO	-0.37	0.26	0.11	-0.04	0.42	0.11	0.01	-0.16	-0.10	0.02	-0.01	0.22	---	-0.08	0.10	0.03	0.17	0.30	0.18	-0.10	0.05	0.21	-0.00	0.12	-0.08	0.26	0.08	0.16	-0.02	-0.10
BU	0.03	0.01	0.25	0.20	0.42	-0.08	-0.00	-0.03	0.35	0.25	0.23	0.33	0.11	---	-0.49	0.08	0.04	-0.16	0.02	-0.22	0.11	0.19	-0.13	0.01	-0.34	0.20	-0.36	-0.00	-0.08	0.17
ET	-0.31	0.21	0.05	-0.17	-0.02	-0.17	0.25	-0.23	-0.15	0.08	-0.04	0.06	0.38	0.10	---	0.07	0.26	0.02	0.01	0.15	0.20	-0.31	-0.05	0.21	0.28	-0.17	-0.07	0.10	0.13	-0.18
GM	-0.07	0.02	-0.42	-0.24	-0.28	0.06	-0.02	-0.03	-0.30	-0.23	-0.13	0.02	0.03	-0.51	0.19	---	0.27	0.21	0.23	-0.14	0.28	0.36	0.20	0.00	-0.45	0.09	0.16	0.09	-0.07	-0.20
GH	0.05	0.38	-0.04	-0.16	0.25	0.12	0.12	0.19	0.30	0.21	0.26	0.16	0.35	-0.04	0.26	0.25	---	-0.15	-0.24	0.04	0.08	-0.02	0.30	0.03	-0.09	0.15	0.18	0.33	-0.11	0.17
KE	-0.23	0.19	-0.23	-0.20	-0.19	0.16	0.07	-0.24	-0.23	-0.13	-0.01	-0.13	0.12	-0.20	0.31	0.37	0.14	---	0.14	0.09	0.07	0.15	0.01	0.17	0.26	0.05	0.12	0.37	0.19	0.02
LE	-0.23	-0.23	-0.23	0.01	-0.00	-0.21	0.03	-0.03	0.00	-0.18	-0.25	-0.24	0.19	-0.27	0.01	0.03	-0.03	0.21	---	-0.19	0.21	0.10	-0.16	0.10	-0.24	0.17	0.11	-0.11	-0.02	-0.07
MA	-0.13	0.30	0.13	0.08	0.22	0.32	-0.16	0.28	0.27	0.32	0.38	0.11	0.27	0.22	-0.07	-0.18	0.31	-0.08	-0.38	---	0.01	-0.37	0.45	0.41	-0.03	-0.05	-0.06	0.33	-0.35	0.18
MW	-0.19	0.27	-0.06	-0.01	0.03	0.42	0.23	-0.10	0.01	0.19	0.16	-0.02	0.17	0.04	0.11	-0.25	0.18	0.16	-0.08	-0.04	---	-0.01	-0.04	0.09	-0.10	0.11	-0.09	-0.09	0.03	-0.16
MU	0.06	0.29	0.19	0.12	0.21	-0.02	0.02	0.28	0.31	-0.07	0.14	0.15	0.03	-0.06	0.12	-0.21	0.28	-0.06	0.08	0.45	0.15	---	-0.08	-0.17	-0.12	-0.10	0.10	-0.04	0.09	-0.01
NG	-0.20	0.15	0.18	-0.03	-0.01	0.20	-0.00	0.03	0.07	0.18	0.09	0.02	0.26	-0.02	0.35	-0.07	0.26	0.13	0.09	0.40	0.37	-0.01	---	0.15	-0.06	-0.17	-0.08	0.33	-0.15	0.02
RW	-0.09	0.44	0.08	-0.17	0.05	0.13	0.38	-0.01	0.22	0.06	0.18	0.12	0.14	0.05	0.43	0.06	0.17	0.13	-0.00	-0.10	0.24	0.25	0.10	---	-0.27	0.32	-0.27	0.10	-0.21	-0.13
SA	0.03	0.14	0.11	-0.02	0.09	0.02	-0.00	0.29	0.14	0.08	0.02	-0.17	0.09	-0.27	-0.21	-0.02	0.41	-0.08	0.22	0.08	-0.03	0.16	0.07	-0.02	---	-0.26	-0.05	-0.15	-0.01	-0.04
SW	-0.30	0.25	0.01	-0.13	-0.00	0.18	0.20	-0.14	-0.01	-0.01	-0.05	0.15	0.31	0.08	0.30	0.03	0.40	0.24	-0.11	0.34	0.52	0.27	0.44	0.27	0.28	---	0.01	-0.25	-0.12	-0.19
TA	-0.25	0.01	-0.50	0.23	-0.12	-0.13	0.01	-0.10	-0.25	-0.19	-0.11	-0.05	-0.00	-0.11	0.18	0.26	-0.08	0.09	0.27	0.06	0.06	-0.16	0.08	0.13	-0.05	0.05	---	0.00	0.42	-0.05
UG	-0.20	-0.07	-0.04	-0.00	-0.05	0.15	0.23	-0.16	-0.2	-0.24	-0.04	0.11	0.22	-0.05	-0.06	0.18	0.14	0.10	-0.02	-0.02	0.20	-0.12	-0.04	-0.15	0.07	0.15	-0.03	---	-0.09	0.40
ZA	-0.13	-0.25	-0.27	0.09	-0.16	-0.08	-0.05	-0.22	-0.31	-0.35	-0.30	0.18	0.10	-0.15	0.26	0.39	0.02	0.01	0.15	-0.05	0.04	-0.09	0.21	-0.12	-0.20	0.09	0.42	0.25	---	0.08
ZI	-0.13	0.08	0.06	-0.11	-0.02	-0.12	0.23	-0.07	0.06	0.02	0.15	0.11	0.07	0.13	0.20	-0.12	-0.04	0.09	-0.03	0.02	-0.16	-0.22	0.15	0.46	-0.21	0.10	0.07	-0.08	0.07	---

Notes. Correlations of supply disturbances are above the diagonal and correlations of demand disturbances are below the diagonal. Bold words in this table mean positively significant coefficients at the 5 percent level, At 5%, the critical value of the correlation coefficient, r is 0.26. Source: IFS CD ROM and Author's own computations

Size of Disturbances and Speeds of Adjustment and Synchronization of Business Cycles

Besides the level of correlation between countries, the size of the shocks and the speeds of adjustment are also important in defining a monetary unification. Bayoumi and Eichengreen (1994) identified three criteria to define an optimum currency area. Related to the country's macro-economic disturbances, these criteria are: the size of shocks; the cross-country correlation; and the speed of adjustment. Countries are relatively highly correlated with similarly sized shocks and speeds of adjustment are suitable to form a monetary union. The results of the sizes of the disturbances and the speeds of adjustments are given in Table 4.

The size of the shock is measured by the standard deviation of each disturbance. Larger sized disturbances are costly to the economy to offset the shocks. On average, the non-CFA countries experience a larger terms of trade shock than the CFA countries. CFA and non-CFA countries face similar sized supply shocks on average with the largest disturbance in Chad for the CFA countries and Nigeria and Burundi for the non-CFA countries. Moreover, the CFA and non-CFA also display similarly sized trade balance disturbances on average. Burkina Faso in the CFA zone and Burundi in the non-CFA zone are the two countries with the largest trade balance shocks. The size of the monetary shocks is smaller on average in the CFA countries than in the non-CFA countries. As one should expect, this is the discipline effect of the fixed exchange rate regime. However, the CFA countries display on average larger demand shocks than the non-CFA countries with Central African Republic in the CFA zone and Uganda in the non-CFA experiencing the largest demand disturbances. Overall, even though the CFA and non-CFA countries face similarly sized disturbances, the trade balance shocks are far the largest shocks on average for both the CFA and non-CFA countries. Indeed, trade balance disturbances represent on average twice the terms of trade shock size, five times the size of supply shocks, three times the size of monetary shocks and four to six times the size of demand shocks.

A simple measure of the speed of adjustment is the ratio of the impulse responses function in a chosen year, say the third year divided by its long run level¹². A low value of the speed of adjustment indicates a relatively slow adjustment while a high value indicates a large amount of adjustment. Note that there are high costs to the economy associated with a relatively slow adjustment. The non-CFA countries have on average faster adjustment speed in terms of trade, supply, and trade balance, monetary and demand shocks than the CFA countries. Indeed, only one third of the terms of trade adjustment occur within three years, while the adjustment of terms of trade shocks is two thirds in the non-CFA countries. The fastest adjustment in terms of trade happens in Togo for the CFA countries and Burundi for the non-CFA countries where all the adjustments occur within three years. Three fourths of the adjustment of supply shocks occurs on average within three years in the non-CFA countries. In the CFA countries, in contrast, the change or adjustment is only two thirds. Cameroon and Botswana in the CFA and non-CFA countries respectively achieve the fastest supply shock adjustment. The adjustment speed in trade balance disturbances within three years is respectively half and two thirds for the CFA and non-CFA countries. The non-CFA countries achieve two thirds of the adjustment in monetary shocks within three years while the change is only half in the CFA countries. Finally, 75% of the adjustments of demand disturbances occur on average within three years in the non-CFA countries. In contrast, the change is only half in the CFA countries. Gabon and Uganda in the CFA and non-CFA countries respectively achieve all the adjustment of demand shocks within three years faster than anyone else in their respective bloc.

¹² The choice of the third year is somewhat arbitrary but the use of other years (e.g., two or four) gives similar results.

Table 4

Shock Sizes and Adjustment Speed in the CFA and Non-CFA Countries

Countries	CFA countries									
	\mathcal{E}_t^h		\mathcal{E}_t^s		\mathcal{E}_t^z		\mathcal{E}_t^d		\mathcal{E}_t^m	
	SS	AS	SS	AS	SS	AS	SS	AS	SS	AS
Benin	0.26	0.87	0.04	1.83	0.70	0.38	0.32	2.76	0.10	2.10
Burkina Faso	0.20	1.35	0.06	0.93	0.72	2.43	0.10	2.44	0.05	0.81
Cameroon	0.29	0.25	0.07	3.79	0.61	2.54	0.19	0.97	0.14	0.24
Central African Republic	0.29	0.41	0.11	0.07	0.65	3.26	0.11	2.73	0.06	0.30
Chad	0.28	0.34	0.36	2.30	0.68	0.08	0.11	0.25	0.77	0.38
Congo	0.24	0.12	0.11	3.69	0.69	0.81	0.16	0.38	0.06	0.56
Cote D'Ivoire	0.29	0.10	0.06	1.76	0.69	2.22	0.09	0.76	0.04	2.39
Gabon	0.25	2.22	0.14	0.22	0.69	1.29	0.10	0.52	0.06	3.84
Mali	0.25	0.40	0.10	3.75	0.67	1.20	0.18	0.07	.08	3.10
Niger	0.16	0.86	0.20	0.10	0.60	1.21	0.13	1.89	0.07	0.11
Senegal	0.26	1.40	0.08	0.09	0.66	2.38	0.10	3.79	0.08	3.00
Togo	0.28	2.54	0.06	3.21	0.61	0.26	0.29	0.17	0.11	0.77
Average CFA	0.25	0.91	0.12	1.81	0.66	1.51	0.16	1.39	0.14	1.47
Countries	Non-CFA countries									
Botswana	0.20	1.74	0.06	3.59	0.61	0.58	0.11	0.51	0.02	1.10
Burundi	0.27	3.58	0.28	0.80	0.64	0.44	0.23	1.17	0.09	3.02
Ethiopia	0.31	2.07	0.04	2.64	0.76	2.10	0.15	1.06	0.04	2.45
Gambia	0.24	1.43	0.23	3.00	0.74	0.79	0.37	2.96	0.07	2.86
Ghana	0.40	0.72	0.09	2.16	0.75	2.57	0.11	1.20	0.16	2.52
Kenya	0.27	1.26	0.14	0.64	0.72	1.81	0.13	0.76	0.25	0.20
Lesotho	0.13	1.03	0.07	2.12	0.65	1.84	0.08	1.70	0.02	0.96
Madagascar	0.26	1.71	0.04	3.11	0.70	3.16	0.11	1.88	0.11	2.23
Malawi	0.29	0.76	0.07	1.31	0.61	1.84	0.19	1.99	0.14	2.30
Mauritius	0.31	1.62	0.08	0.51	0.66	0.80	0.20	2.79	0.11	1.57
Nigeria	0.60	1.15	0.28	1.69	0.62	2.78	0.25	0.40	0.13	1.83
Rwanda	0.36	0.97	0.11	1.15	0.60	1.36	0.15	3.89	0.05	0.82
South African Republic	0.15	0.58	0.11	0.13	0.67	1.72	0.07	1.18	0.03	0.69
Swaziland	0.18	0.76	0.07	0.23	0.67	3.83	0.11	1.24	0.05	2.45
Tanzania	0.42	1.62	0.08	0.51	0.71	0.80	0.13	2.79	0.09	1.57
Uganda	0.52	1.71	0.15	1.41	0.57	1.31	0.26	1.18	0.27	3.41
Zambia	0.47	2.48	0.16	0.50	0.74	0.95	0.18	0.97	0.18	1.06
Zimbabwe	0.22	0.71	0.10	0.45	0.68	0.79	0.79	3.40	0.05	0.02
Average non-CFA	0.31	1.66	0.12	1.91	0.67	1.64	0.20	1.74	0.10	1.91

Notes. SS = Shock Size; AS = Adjustment Speed. Source: IFS CD ROM and Author's own computations.

The non-CFA countries face on average faster adjustment speed of real shocks within three years than the CFA countries. In the CFA countries, only one third of the adjustment of real disturbances occurs within three years in contrast to the non-CFA where the adjustment is one half. In contrast, the adjustment speed of nominal disturbances is faster on average in the CFA countries than in the non-CFA countries. Indeed, three fourths of the nominal adjustment speed occurs within three years in the CFA countries while the adjustment is only one half for the non-CFA countries. Bayoumi and Eichengreen (1994) investigated the speed of adjustment in west Europe, East Asia, and the Americas including Canada and the United States. Within two years, they found that

Asia had the fastest adjustment of all the change of output and prices, followed by the Americas and Europe where only 80% and 50% of the adjustment was completed respectively.

Overall, the CFA and non-CFA countries experience similarly sized disturbances and almost same speed of adjustment for the different shocks. However, there is no clear geographical pattern for the correlations between CFA and non-CFA countries. Nevertheless, this may be an indication of a partial synchronization of business cycles in SSA. Countries facing the similar shock sizes with the same speed of adjustment of the disturbances might get together to form a monetary union with less opportunity costs.

Concluding Remarks

The Theory of Optimum Currency Area (OCA) is applied to SSA countries to identify feasible monetary arrangements. This study focuses on the correlations of aggregate supply and demand disturbances, the sizes of the disturbances and the speed of adjustment as the necessary conditions of forming a monetary union. Countries with high disturbance correlations, with same shock sizes and same speed of adjustment may be a strong evidence for currency unification. The results of the supply disturbances do not show a strong evidence of common currency area in the CFA and non-CFA countries. The correlations of supply shocks between the CFA and non-CFA countries do suggest a clear regional pattern among these countries. The results, however, favor smaller SSA blocs, such as the one between South African Republic, Cameroon, Cote D'Ivoire, and Niger. In contrast, the correlations of demand shocks feature significantly positive coefficients among the CFA countries, the non-CFA countries and between the CFA and non-CFA countries. These results suggest a clear geographical pattern within the CFA and non-CFA countries or between the CFA and non-CFA countries. The results of the supply and demand disturbances are very similar to the findings of Horvath and Grabowski (1997) about African regions.

Notwithstanding their economic structure disparity, CFA and non-CFA countries experience on average similarly sized disturbances. These results hold for the different shocks considered in the study, namely, terms of trade, supply, demand, monetary and trade balances disturbances and real and nominal shocks. CFA and non-CFA countries also feature on average similar speed of adjustment within three years after experiencing macroeconomic disturbances. These results may suggest a possible partial synchronization of business cycles in Sub-Saharan African countries. The management of the exchange rate policy and monetary policy will be much easier even though there is loss of monetary sovereignty. Further studies may investigate the level of intra-regional trade within the CFA and non-CFA countries and between the CFA and the non-CFA countries. It will be interesting to check the findings of intra-regional trade disturbances in SSA countries in the light of the theory of OCA.

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Participatory Communication and Information Management for Community Development: Thai Rural Community Perspectives^{*}

Chintawee Kasemsuk

Sripatum University, Bangkok, Thailand

Vatanavongs Ratanavaraha

Suranaree University of Technology, Nakhonratchasima, Thailand

The application of participatory communication approach and information management relating to community development in developing country such as Thailand is required. The objectives of this research are: (1) to provide and strengthen participatory communication and information management in order to support community development at the level of rural community; and (2) to investigate the participatory communication characteristics those provide community leaders for rural community development. Population and study area of this research included community leaders and members who live within the selected rural community. The quantitative data collection is applied through surveying community leaders and members identified as the key informants as well as referable and reliable data source. The purposive random sampling is used for selecting rural community areas by focusing on the case of strengthening community development that is “Banjumrung Community” (Muban) located at Noen Kho sub-district (Tambon), Klaeng district (Amphoe), Rayong Province, eastern Thailand, where the community was awarded in the best model of sufficient economy village according to the philosophy of “sufficiency economy” which has been widely adopted in Thailand. This study found that rural community leaders need to have a comprehensive knowledge of external sources as they need to create the input process of communication by receiving useful information from the outside and then transmit them to the community. Consequently, community leaders have to be alert to all situations and try to manage information to facilitate communication with community members. This can help everyone become aware of and understand the same information correctly.

Keywords: participatory communication, information management, community development, Thai rural community

Introduction

Developing community has attracted the attention of many researchers in recent years. Community may be

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Chintawee Kasemsuk, Ph.D., Assistant Professor of Faculty of Communication Arts, Sripatum University.

Vatanavongs Ratanavaraha, Ph.D., Associate Professor of Institute of Engineering, Suranaree University of Technology.

Correspondence concerning this article should be addressed to Dr. Chintawee Kasemsuk, 61 Phaholyothin RD., Bangkok 10900, Thailand. E-mail: chintawee.ka@spu.ac.th.

viewed as systems composed of individual members and sectors that have a variety of distinct characteristics and interrelationships (Thompson & Kinne, 1990). Importantly, community development requires suitable medium as a tool to bring all information from government or private agencies to people who have the main target of such development. Therefore, it is important to stimulate and motivate people or community members to perceive community leaders who are regarded as the closest media to the community members. Community will develop if leader and members in the community communicate with each other, exchange opinions and conduct activities to reach their goals. Therefore, communication within the community is a significant mechanism to drive community power to become a “strengthening community”.

Personal media may be a well-known or acknowledged person within the target audience including opinion leaders and community leaders who are familiar and reliable media for the community. Personal media such as community leaders, therefore, are considered as the persons who bring useful information and create participatory communication of people in the community. The community leaders are regarded as a significant mechanism to build relationships between people in the community. Besides, they may initiate innovative ideas to turn into action and development for positive change in the community which is participating in development to generate benefits for the people in the community.

Most researchers tend to study about community leader and community development in the context of rural community. Ozor and Nwankwo (2008) studied the role of local leaders in community development programs in Ideato and derived implications for local leadership as an institution for extension policy. Results showed that the most important roles played by local leaders in community development were decision-making, liaison between governmental and non-governmental agencies and the community for financial and technical assistance, monitoring and evaluation of projects, and fund raising for projects. Further results showed that the most important source of information for community development efforts were through the local leaders themselves.

Kuponiyi (2008) investigated the participation of local leaders in decision-making in Ajaawa community of Oyo State, Nigeria. Results revealed that major areas of decision-making where leaders regularly participate are religion, chieftaincy, community safety, and community development.

Ricketts and Place (2009) compared two particularly successful rural communities, focusing on the importance of leadership within the community. Four significant factors were determined to set these successful communities apart from those less viable-effective communication, development of social capital, community engagement, and collaboration across and within communities.

Similarly, the majority of research on personal media in Thailand tends to favor the context of the rural community. This is because the majority of Thai people live in rural areas. Therefore, this research focuses on investigating significant characteristics of rural community leaders to the extent that they constitute participatory communication and information management for community development.

Review of Literature

Development Communication

Development means problem-solving to improve the living conditions of people in a society (Melkote, 2001) or bringing new ideas to the social system to enhance or change living conditions for the better (Rogers, 1995). It can be said that the development is a concept which can lead to changes for the better. It is also about planned change through government mechanisms whereby the government defines the purposes of

development based on the problems and needs of the people.

Development communication was regarded as an aspect of communication depending on the mass media rather than other types of media to create modernity and to be concordant with development concepts. However, it changed to emphasize participatory communication based on the community which mainly aims to respond to community needs. It can be said that communication and participation within the community will lead to community development. For this reason, “personal media” has become a more interesting means of communication because it is very helpful for development.

Considering the advantages and disadvantages of each type of media, it is essential to combine several media into a media forum including personal media, specialized media, and mass media. Personal media is persuasive while mass media can spread the news to many people quickly and widely. Furthermore, specialized media can provide content suitable for the target audience. This combination of three types of media helps enhance the efficiency of development communication. Thus, there is a reaction between communication and development, both through channels of mass media and interpersonal communication. This can lead to various changes to people and society on such as attitudes and behaviors as well as further development.

Personal Media for Community Development

Every person has a unique identity which nobody else can perfectly imitate. An important function of communication is to stimulate and motivate community members to gain correct information and this requires community leaders because they are the closest personal media for the community. Personal media such as community leaders are considered persons who are able to convey information to members. This system brings new information from outside to the community. It is an effective method of persuading people in the community to respond favorably to the purposes of such communication. It can be concluded that personal media in the community are more significant than external media in the process of decision-making to acknowledge innovation (Rogers & Svenning, 1969).

In Thai context, community leaders should play a communication role in the community as follows (Kaewthep et al., 2008):

- be open to external communication with the community;
- be able to transform the messages in accordance with the levels of knowledge of community members;
- be able to strengthen networks within the community;
- be a catalyst for engaging individuals in decision-making and action;
- be able to create a sense of community;
- be able to develop transparency in the community;
- be able to arrange a forum to exchange information within the community;
- be able to enhance people’s ability to become involved in their community and work together;
- be able to manage conflicts in the community;
- be able to listen to opinions and needs of community members;
- be a representative for community members.

These communication roles can activate participatory communication within the community in many ways. Importantly, the ability to play the communication role in various situations is different. Sometimes, they are leaders and at other times they are followers. These kinds of events demonstrate the leadership qualities of each person which may assist or obstruct community leaders depending on the situation. This is because of diverse

dimensions of the characteristics of the personal media that is beneficial for community engagement to develop the community.

Participatory Communication for Community Development

The study covered by participatory communication has broadened considerably in recent years. Erwin (1976) illustrated that participation was a process enabling people involved in the development implementation through cooperative thinking, making decision to solve their own problems, creating innovations, knowledge and skills in a proper manner as well as monitoring the implementation performance of organization. It can be summarized the term “participation” in the meaning of providing the opportunity for individuals helping each other, especially in cooperative thinking, decision-making, implementing, and taking responsibility of any subjects that would have impacts on public in order to achieve social goals. Therefore, participation may refer to people or communities developing their capacities in managing and controlling the use of available resources and factors of production in society to get benefits of economic and social livings as well as any decisions relating to appropriate and acceptable projects.

Generally, four different ways of participation can be observed in most development projects claiming to be participatory in nature (Uphoff, 1985). They are:

- Participation in implementation: People are actively encouraged and mobilized to take part in the actualization of projects. They are given certain responsibilities and set certain tasks or required to contribute specified resources;
- Participation in evaluation: Upon completion of a project, people are invited to critique the success or failure of it;
- Participation in benefit: People take part in enjoying the fruits of a project, this maybe village meeting in the new community hall;
- Participation in decision-making: People initiate, discuss, conceptualize, and plan activities they will all do as a community.

Shirley, Sadanandan, and Joseph (1994) defined participatory communication as collaborative efforts in thinking, listening, and respecting attitudes and ideas of others. Community members need to coordinate their efforts to analyze problems of their own communities, exchange information and ideas in order to bring about appropriate changes. Yoon (2004) proposed that some of the most successful participatory communication programs were tested at the village community level. The small size of the community permitted the intensive use of interpersonal channels. People in community need to be encouraged and provided with the opportunity to participate in the planning process. Therefore, participatory communication would play an important role at this stage.

Regarding several definitions as mentioned, the successful community development would depend on the participation of people who must know “what they want” with the aim of self-development.

In the context of community development and especially in societies in the process of democratic transition, one would expect participation to lead towards a situation where all parties feel that they have the capacity to influence the development of the project (Kelly & Vlaenderen, 1995). By means of people gathering together in the form of society or community within particular areas, this concept supports the community and society strengthening by focusing on participation that offers cooperative thinking, cooperative doing, and cooperative problem-solving. To find an effective solution for the problems, it significantly requires the

collaboration of partnerships at all levels that need to mobilize all compositions of society, especially communities with the aim of strengthening community capacity to solve crucial problems by themselves.

Information Management for Community Development

Information management is a useful concept that facilitates participatory communication. According to Wikipedia, information management is the collection and management of information from one or more sources and the distribution of that information to one or more audiences. It can be said that information management is an application to communicate information within and outside, and process it to enable leader to make quicker and better decisions. Information management is the study of how information are created, represented, and communicated in social contexts. Ten principles to ensure that information management activities are effective and successful (Robertson, 2005):

- recognize (and manage) complexity;
- focus on adoption;
- deliver tangible and visible benefits;
- prioritize according to business needs;
- take a journey of a thousand steps;
- provide strong leadership;
- mitigate risks;
- communicate extensively;
- aim to deliver a seamless user experience;
- choose the first project very carefully.

According to Robertson (2005), effective information management focused on adoption, strong leadership, active participation, and choosing of the first project very carefully. This is to ensure that the project will reflect value of information management. However, most effective forms of communication occur when information is not only exchanged, but acted on collaboratively (Braun, Thiele, & Fernandez, 2000). Conceptually, the characteristics of community leader such as participatory communication and information management can reflect, to some extent, the development of that community.

Research Method

Research Participants

Population and study area include community leaders and members who live within the selected rural community. The quantitative data collection is applied through surveying community leaders and members identified as the key informants as well as referable and reliable data source, such as TV program “Community Model” of Thai PBS broadcasting every Saturday from 11.05am to 12.00 am. In this step, purposive random sampling is required for selecting rural community areas by focusing on the case of strengthening community development that is “Banjumrung Community” (Muban) located at Noen Kho sub-district (Tambon), Klaeng district (Amphoe), Rayong province, eastern Thailand, where the community was awarded in the best model of sufficient economy village in 2006, according to the philosophy of “Sufficiency Economy” which has been widely adopted in Thailand. According to this reason, authors become interesting in the study of participatory communication and information management of community leaders by focusing on how they stimulate the involvement of community members in development on such community.

Banjumrung Community (Muban) is one of Mubans which is further subdivided into 136 households. In the study, there are 136 samples of community members including two leaders who are the past and present leader.

Research Design and Procedure

This research used a quantitative method which collects data by using questionnaires to explore the opinions of community members in Banjumrung community. In addition, authors also conducted semi-structured interviews to gather additional information about the actions of management from the community leaders.

Results

Quantitative analysis and descriptive analysis were applied for data analysis including certain basic statistics such as frequency and percentage to describe important issues of the research. Moreover, the data collected from the interviews were analyzed by categorizing some significant data to complete the research.

Communication Characteristics Facilitating the Participatory Communication in Community

According to the analysis of the communication characteristics of rural community, leaders supporting the participatory communication in community (see Table 1), 91.2% of community members agreed that community leaders should listen to others' opinions and needs, whereas 91.1% agreed that the community leaders should open to external communication with the community to transmit news to members. Furthermore, they have to be able to filter the news according to the basic knowledge of the members because of varying demographic characteristics and different knowledge level in each area. Therefore, it is a duty of community leaders to try to edit external information so as to enable members to understand it clearly.

Table 1

Communication Characteristics Facilitating the Participatory Communication in Community

Characteristics facilitating the participatory communication	Mean	Percentage (%)
Be open to external communication with the community	4.42	91.1
Be able to transform messages in accordance with the levels of knowledge of community members	4.31	91.1
Be able to strengthen networks within the community	4.37	90.8
Act as catalyst for engaging individuals in decision-making	4.23	87.6
Be able to create a sense of community	4.22	86.6
Be able to develop transparency in the community	4.40	89.6
Be able to arrange a forum to exchange information within the community	4.32	87.9
Be able to encourage people to become involved in their community and work together	4.45	90.6
Be able to manage conflicts within the community	4.10	82.5
Be able to listen to opinions and needs of community members	4.38	91.2
Act as representative for community members	4.40	89.8

Notes. $N = 136$; Source: Retrieved from <http://www.banjumrung.com/index.php/submnudatageneral>.

Rural community leaders should play important role in strengthening networks within the community (90.8%). In addition to community leaders' duty as personal media to convey external messages to the receivers in their own community, they have to act as representatives for community members (89.8%). Most of all, they must be a catalyst for engaging individuals in decision-making and action (87.6%).

In addition, community leaders should also be able to create a sense of community (86.6%). Chavis and Wandersman (1990) stated that a sense of community was the glue that can hold together a community

development effort. Nevertheless, they must be able to encourage people to become involved in their community and work together (90.6%). They should arrange a forum for interpersonal exchange of information (87.9%) and they should manage conflicts within the community (82.5%).

Based on the findings, it is obviously seen that the first three characteristics present the priority to the potential capabilities of rural community leaders in screening information to community as well as transforming them appropriately based on people's background knowledge. Moreover, community leaders also stimulate participatory communication process through conveying update information from outside to inside community to provide people the opportunity to share their ideas. Hence, it might be the crucial factor influencing the participation within community.

Characteristics Facilitating the Information Management Role of Rural Community Leaders

According to the interview analysis of the characteristics supporting the information management role of rural community leaders, of course, this does not mean that every person possesses all the characteristics. As stated above, people in rural environment need leaders who can play an important role in participatory communication and also information management. This is because the daily routine of most people involves with communication all the time. As a community leader, it may need to communicate to large numbers of people. It can be said that community leaders should collect and manage of information from one or more sources and distribute that information to one or more audiences. However, both past and present leaders of Banjumrung community have to access and receive quantities of information daily, but not everyone is able to understand all information correctly and completely. They tried to use the participatory communication strategy to identify appropriate methods for approaching their community members and also have communication skills to develop a more precise understanding of the information.

In addition, both past and present leaders of Banjumrung community said that community members are actively encouraged and mobilized to take part in the actualization of community projects. They are invited to critique the success or failure of it through community meeting in every month.

Some crucial problems of the personal media are related to the lack of skills in selecting and screening useful information to transmit to other people. However, according to Robertson (2005), both past and present leaders of Banjumrung community also focused on strong leadership and active participation in order to ensure that this will reflect value of information management. Regarding the research on the participatory communication characteristics supporting the role of rural community leaders, this showed that one of three emphasized an ability to convey messages to the community members and also screen suitable information for the community members. In short, community leaders should speak to the community in a language that members understand.

Discussions and Conclusions

This research has focused on participatory communication and information management according to the first three factors encouraging the participatory communication in community development. It reveals that the first three characteristics which support a role for community leaders in participatory communication are that they: (1) should listen to opinions and requirements of community; (2) are open to external media to pass on the information to community members; and (3) are able to adapt the messages in accordance with the various levels of knowledge of community members.

It can be concluded that rural community leaders need to have a comprehensive knowledge of external sources as they need to create the input process of communication by receiving useful information from the outside, and then transmit them to the community. It is important to say that community leaders must be prepared to work with the community to adapt any existing project ideas or activities to suit community's needs. Community leader must be stimulators to create the participatory communication process in the community by using several methods such as a meeting of community members to provide opportunities for everyone to express their own opinions. It seems like the study of Ozor and Nwankwo (2008), results showed that the most important source of information for community development efforts were through the local leaders themselves.

Consequently, community leaders have to be alert to all situations and try to manage information to facilitate communication with community members. This can help everyone become aware of and understand the same information correctly. Hence, the factors supporting these characteristics of community leaders are knowledge and understanding of communication technologies in order to connect to external sources of information easily. Therefore, government agencies or concerned departments should provide regular training to extend and improve knowledge of community leaders.

On the other hand, the characteristics impeding the use of personal media for the community development can be considered as the participatory communication characteristics of the last three factors. It can be concluded that if community leaders lack skills to manage conflict, it may confuse members and divide opinions. Community leader may need to negotiate and handle situations. Such skills cannot be found in everyone, but training is needed to reinforce the problem resolution and conflict management skills for use in the community. For this reason, the characteristics supporting good community leaders are skills to manage conflict which require collaboration with concerned agencies to hold regular training to strengthen community leaders' potential.

Implications and Recommendations

However, there is a limitation with respect to the target group including community leaders and members from only one rural community in Rayong province. According to the field survey with community leaders and members, it presents the same characteristics, in that the majority of rural community members were found in a similar low income group and living pattern as a significant factor facilitating the role of community leaders, because members have the similar history and family background. Therefore, the future research might apply this issue for the other communities that show different characteristics that would benefit to obtain information relating to the potential capabilities of community leaders in each area, as well as provide the guideline for strengthening their leadership skills in terms of communications and implementations in the community.

It is another issue for seriously study to find out that how we can develop the "people" and which methods are suitable to lead to the development of community, society, and country. Regarding previous studies by scholars, most of them illustrated that community leaders lacked communication skills, especially how to select useful information to pass on to members. It is necessary to increase the role of the community leaders to coordinate and create strong communities by improving their communication skills. Operational training to support leadership can create good leaders and make them realize their own potential as significant persons to sustain the community. It is the responsibility of communication experts to apply their knowledge of communication to support such development, such as by training to enhance public speaking skills, designing suitable content to reach the target group as far as possible to make community members change their behavior

to adopt desirable manners.

Finally, an important suggestion for sustainable community development, particularly in Thai rural communities, is participatory communication to develop the community. This should emphasize community participation as the main paradigm of participatory communication for community development. People participate when they feel a sense of community, see their involvement and issues as relevant and worth their time (Chavis & Wandersman, 1990). Community leaders should empower others to lead all activities in their own way. Community members will realize the importance of community development which allows them to solve problems together. This is because both community leaders and members are important participants in developing their community. Thus, it is essential to motivate community leaders into gaining proper information and understanding of participation in community development. Some activities may be initiated to attract community members into the operation of the community, for example, activities which can demonstrate the abilities of individual community members. This is regarded as personal media development from community engagement which will lead to sustainable community development for and by everyone in the community.

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Economic Valuation of Water Resources Conservation Area in Surakarta City

Mugi Raharjo, I Gusti Putu Diva Awatara, Tulus Haryono, Edi Purwanto
Sebelas Maret University, Surakarta, Indonesia
Shalihudin Djalal Tanjung
Gadjah Mada University, Yogyakarta, Indonesia

This study aims to: (1) assess the types of sustainable conservation of water resources that can be done by the community; (2) determine the willingness to pay (WTP) community for the improvement of water resources conservation management; (3) determine the determinants that significantly affect the value of willingness to pay for additional benefits due to increased conservation of water resources management; and (4) development of economic instruments that include the community's role in the mechanism of raising funds for conservation management of water resources. This study uses a sampling method with proportional stratified random sampling (random sampling proportional stratified). The target population of 42,000 so that the sample size of 350 respondents. The model used is a multiple regression model with double the natural log. The analysis shows that the types of activities that significantly influence the conservation of water resources are the infiltration wells, infiltration holes biopori (LRB), environmental awareness, water quality, ficus benjamina, and caesalpinia pulcherrima. The results of calculations willingness to pay for conservation of water resources in the household customers Surakarta are as follows: WTP for categories R2 at 5,000; R3 at 5,100; R4 at 5,200; and N1 of 21,000. Log regression results obtained the conclusion that the WTP for the conservation of water resources was tested with partial regression coefficients (*t* test) shows the six variables that affect the WTP conservation, namely, awareness of environmental functions, biopori, tough water quality, infiltration wells, ficus benjamina, and caesalpinia pulcherrima. Another variable are family income, family head education, age of marriage, home ownership, family size, sources of water used, length of stay, filter, filicium decipiens tree and pterocarpus indicus tree does not significantly affect the conservation of water resources.

Keywords: willingness to pay, conservation, water resources, infiltration wells, biopori

Introduction

Water is a vital need in the lives of living things. One cannot survive without water, because water is one of the life support for humans. The fact happening today is the reduced availability of clean water. The larger of

Mugi Raharjo, Dr. Drs. M.Si, Faculty of Economic, Sebelas Maret University.

I Gusti Putu Diva Awatara, SP. M.Si, Postgraduate Student of Environmental Science, Sebelas Maret University.

Tulus Haryono, Professor, Dr. M.Ec, Faculty of Economic, Sebelas Maret University.

Edi Purwanto, Professor, Dr. M.Sc, Faculty of Agriculture, Sebelas Maret University.

Shalihudin Djalal Tanjung, Professor, M.Sc Ph.D., Faculty of Biology, Gadjah Mada University.

Correspondence concerning this article should be addressed to Mugi Raharjo, Faculty of Economic, Sebelas Maret University, Surakarta, Ir. Sutami 36 A Surakarta, 57126, Indonesia. E-mail: haryuns@gmail.com.

the population, the greater demand for drinking water, thus diminishing the availability of clean water. Drinking water and sanitation services in Indonesia are also very poor, more than 49 million people (22.31 percent) of Indonesia's population have no access to drinking water, and 72 percent of whom live in rural areas. Similarly, the use of sanitation, more than 97 million people (44%) of Indonesia's population lacks access to proper sanitation, about 70% live in rural areas. In achieving the Millennium Development Goals (MDG), progress in achieving access to safe drinking water in Indonesia in the urban areas is considered to decline, while the slow progress in rural areas (Harahap & Hartono, 2007). Issues concerning the management of water resources in Indonesia are also experienced by the province of Central Java with a population of 30 million people. The problems are mainly related to water supplied to the household sector and industrial sector.

This problem mainly occurs in the dry season. Rapid population growth, increasing purchasing power, industrialization, and urbanization contribute greatly to the demand of water for the city. Increased demand for water is not followed by the improvement of infrastructure and facilities to improve water quality and water quantity. Coverage of water supply for the city of Surakarta, for example, has only reached 61% of the urban population and dirty water (sanitation) has reached 10% (PDAM Surakarta, 2008).

Water resource management policy will be optimal if involves community participation in water resource management and development. Community involvement can be realized with the willingness to pay (WTP) as a form of public awareness of water resource management. The purpose of this study were to: assess the types of sustainable water resource conservation that can be done by the community; determine the WTP for improved management of the conservation of water resources; define determinants that significantly affect the value of WTP for additional materials obtained as water resource conservation and development of economic instruments that include the role of the community to contribute positively to the management of water conservation; and development of fund-raising mechanism for the management of water conservation.

The benefits of this research is to contribute to the relevant agencies—local water company (PDAM), Department of City Planning and Public Works Department in the determination of policy strategies, and the development of conservation management of water resources in the city of Surakarta.

Literature Review

Conservation of Water Resources

The future challenges in water management (water management) are to achieve sustainable development in the face of population expansion and escalation of the continuity of economic activity as well as the problems of poverty and environmental degradation. In the arid/dry and somewhat arid/dry in the developing world, water has been perceived as scarce, however in a rather moist and damp, the competition to take the available water is so tight and continue to increase. The time period of available water supplies with ease, with the costs of economic, social, environmental development and low has passed. Now we are entering a period of "mature water economy", with increased competition for access to the fixed supply, the growing risk of water pollution, and a sharp increase of the costs of economic, social, and environmental development. For it is necessary to reorient the policy of only thinking about water supply, the demand-oriented policies for management, and water development. This trend requires new perspectives in water policies, particularly in developing countries like Indonesia.

Connolly, Brown, and Brow (2007) in the study of water policy at the national level showed a conceptual framework (framework) on water resource policy in relation to the policies of the various relevant sectors,

including public finance, agriculture, energy, industry and commerce, health, housing, transportation, and environment. His desire was to identify things that are important in a national water policy.

Catchment Area

Catchment area of a particular catchment area is used to incorporate rainwater into the ground. Air infiltration in the town or larger areas, either in the form of rounded or elongated in shape path is more open without the use of the building (Romeon, 2009).

Ground water recharge area (recharge zone) is the area with water in the soil surface, either rainwater or surface water runs into the process of infiltration (infiltration) by gravity through the soil pore hole/rock or cracks/fissures in the soil/rock (Loebis, 2006). Freeze and Cherry (1979) tried to give a definition and how to identify the groundwater recharge area as follows:

(1) Catchment area is the area where the entry of water into the saturated zone of water to form an imaginary line called the water table (water table) and associated with the flow of water in the saturated condition towards the overflow area;

(2) In networking terminology depiction of groundwater flow (net flow) the stream network position will move away from the groundwater;

(3) Catchment has a composition of mineral salts and a little more than the composition of the overflow area in the ground water flow systems, which are the same;

(4) This area can be determined by looking at the distribution of plants;

(5) This area can be determined by looking at the reduction of water pressure against the overflow area that will increase water pressure (this condition can be applied when measuring the water pressure in a vertical drill hole).

Environmental Analysis

When the environmental quality decreases, benefit will be reflected in the value spent on environmental quality at the desired level. The estimation of direct damage has been limited on the market value. It will change and adapt to environmental pollution. It is difficult to measure by approach of direct damage. The estimation should be used in basic concept to determine willingness to pay (Muharram, 2010).

There are three ways to estimate WTP for improving environmental quality (King, 2009):

(1) Revealed WTP. This method reveals WTP by linking to market value. The economic valuation can be done by estimating consumer surplus and producer as well as market goods. Revealed WTP includes three methods: productivity method; hedonic pricing method; and travel cost method.

(2) Imputed WTP. This method reveals WTP which spent to reduce the impact of poor environmental quality. Imputed WTP includes damage cost avoided, replacement cost, and substitute cost methods. They are used to estimate the value of non-market goods and non-market services. It bases on costs for avoiding loss of non-market goods or services, costs for replacing environmental assets, and costs for providing services or goods on non-replacement market.

(3) Expressed WTP. This method reveals WTP by surveys on environmental quality change which base on hypothetical scenario.

Previous Researches

Several previous studies related to economic valuation of water resources conservation by:

(1) Brown (2002), the title of Innovations for Conservation and Development, using qualitative methods

with the institutional approach. The study was institutional and decision-makers must be synergy and sustainable strategies.

(2) Hosking and Preez (2004) conducted a study entitled The Valuation of Water for Conservation Projects in South Africa. The method used is the marginal cost and WTP the variable water demand, the cost of water supply and water quality. The result of the study was the maintenance of water was positively correlated with the value of the benefits of water conservation in some locations. This study showed that water is something that needs to be maintained with the conservation of one of its sustainability. Value of the benefits of water will increase water conservation in some locations.

(3) Seraj (2008) conducted a study Willingness to Pay for Improved Sanitation Services and Its Implication on Demand Responsive Approach of BRAC Water, Sanitation and Hygiene Program with the WTP method to increase domestic water services. The result was 80% of households willing to pay for improved water services and fund-raising mechanism in Bangladesh.

(4) Calderon and Camacho (2008) conducted a study on A User Fee for Household Water in Metro Manila, Philippines with the CVM, and the logit model. Variable used is the cost of conservation, the additional cost of conservation, age, and income. The results of this study showed that Metro Manila people have low awareness about water conservation.

(5) Nam and Son (2008) conducted a study titled Household Demand for Improved Water Services in Ho Chi Minh City: A Comparison of Contingent Valuation and Choice Modeling Estimation, results showed that respondents are willing to pay more for improved quality of water supply services. This study used the WTP and choice modeling on improving the quality of water supply services.

Research Method

Research Scope

The research was conducted at local water company's customers (PDAM) Surakarta. The method of study used descriptive and statistical approaches.

Data Type

Data used in this study was primary data. The data was obtained by field survey in questioners to PDAM customer. Secondary data was obtained from PDAM and city government of Surakarta.

Sampling Techniques

Sampling was stratified random sampling using a proportional basis. It used stratified sample because of the large estimated WTP values that will be different for each PDAM customer group. Population used in this study is the PDAM customer and samples used amounted to 350 customers.

Operational Definition of Variables

(1) Level of family income and expenditure.

Given the variety of livelihoods of respondents who were targeted, then the income in this study is the household income (head of the family, father, mother, children who are already working) as regular monthly salaries, wages, and benefits, monthly family income variable are measured in rupiah (Rp).

(2) Age of head family.

Variables used by his/her old age married respondents, rounded down and expressed in units of years. The longer a person to married, the more stable revenue/income and family-owned property proficiency level is.

This leads to higher environmental awareness. WTP for conservation of water resources requires an understanding and awareness.

(3) Education of head family.

Education levels of education are classified based on the length of time taken. Education level variables are thought to influence the WTP for conservation of water resources. The higher levels of education have greater WTP for conservation of water resources and this applies vice versa.

(4) Home ownership.

Home ownership variable is a dummy variable, to distinguish between self-owned homes and rental houses. This variable is thought to affect the WTP for conservation of water resources. Own home if given the number 1 and the notation given a rental home notation 0.

(5) Number of family members who work and number of dependents.

Variable number of family members will determine the amount of water used per month. Quantity of water used will be calculated in m³. The more the number of family members is working, the greater of the willingness to pay for conservation of water resources. The family members demand clean water, so the WTP for conservation of water resources is higher.

(6) Environmental awareness.

Variable of environmental awareness is expected to affect the WTP for conservation of water resources to be measured with the Likert scale. The greater of the willingness to pay for conservation of water resources is due to the higher awareness of the availability of water for present and future.

(7) Sources of water used.

Variable sources of water used are distinguished from wells and PDAM only. For those who receive care facilities (water, sewage) from the PDAM, then allege to have awareness of environmental/conservation of water resources. This variable is a dummy variable. If the water comes from PDAM and wells were numbers 1 and PDAM notation just given the notation 0.

(8) Expected length of stay in households.

This variable indicates that the longer a person's expectations to live in a house, the greater the WTP for conservation of water resources due to high awareness of the availability of water for present and future.

(9) Water quality.

Water quality will determine whether people are willing to pay or not. If water quality is good, people are willing to pay, and this is true vice versa. This variable is a dummy variable. If the water quality is given the number notation 1 (one), and poor water quality given the notation 0 (zero).

(10) Planting tree of *filicium decipiens*, *caesalpinia pulcherrima*, and *ficus benyamina*.

(11) Making of infiltration wells, catchments pit, biopori, and filtering tools.

Data Analysis

The model used in this study is multinomial logit models to determine the format of respondents WTP dichotomous choice valuation or discrete choice. Respondents were asked about their willingness to pay a sum of money to be used for purposes of improving water conservation management. Formula willingness to pay for changes in environmental quality is:

$$\log (Pr_{WTP}) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_m X_m + \beta_n A \quad (1)$$

Explanation:

Pr_{WTP} is probabilitas WTP;

X_1, X_2, \dots, X_m is independent variables;

A is a certain amount on offer.

The average WTP was calculated using the formula:

$$\text{The average WTP} = \alpha/\beta \quad (2)$$

Function of WTP is:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}) \quad (3)$$

Explanation:

Y is willingness to pay increased water conservation management;

X_1 is income;

X_2 is age;

X_3 is education level;

X_4 is home ownership;

X_5 is number of family members;

X_6 is environmental awareness;

X_7 is sources of water used;

X_8 is expected length of stay;

X_9 is water quality;

X_{10} is planting of tree (*filicium decipiens*, *pterocarpus indicus*, *caesalpinia pulcherrima*, and *ficus benyamina*);

X_{11} is making infiltration wells, biopori, and filtering tools.

Regression models for customer WTP increase in water quality management is:

$$\log(Pr_Y) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon \quad (4)$$

Result

Variable regression model is the influences of family income, age of marriage, the family head education, home ownership, number of family members, environmental awareness, the source of water used, the expected length of stay, water quality, biopori, filtering tools, infiltration wells, *filicium decipiens*, *pterocarpus indicus*, *caesalpinia pulcherrima*, and *ficus benyamina* toward the total WTP. Table 1 shows the results of regression analysis:

The model is:

$$\begin{aligned} \text{LnWTP} = & 1.238 - 0.028\text{LnINC} + 0.002\text{LnAGE} + 0.052\text{LnEDC} - 0.036\text{LnHO} + 0.051\text{LnNFM} \\ & + 0.450\text{LnEA} + 0.119\text{LnSWU} + 0.044\text{LnELS} - 0.862\text{LnWQ} + 0.106\text{LnB} - 0.078\text{LnFT} \\ & + 0.132\text{LnIW} + 0.183\text{LnFD} + 0.085\text{LnPI} + 0.256\text{LnCP} + 0.272\text{LnFB} \end{aligned}$$

(1) Income (INC)

The coefficient of income is -0.028. It means if the 1% increase of income in average, which will not have an impact on the increase of WTP.

(2) Age (AGE)

The coefficient of age is 0.002. It means if the 1% increase of age in average, which will not have an impact on the increase of WTP.

Tabel 1

The Result of Multiple Regression Analysis

Variable	Coefficient	Std. error	t-statistic	Prob.
Constant (C)	1.238	0.596	2.078	0.040
Income (LnINC)	-0.028	0.023	-1.229	0.222
Age (LnAGE)	0.002	0.006	0.266	0.791
Education level (LnEDC)	0.052	0.073	0.714	0.477
Home ownership (LnHO)	-0.036	0.090	-0.404	0.687
Number of family members (LnNFM)	0.051	0.046	1.099	0.275
Environmental awareness (LnEA)	0.450	0.146	3.093	0.003
Sources of water used (LnSWU)	0.119	0.131	0.910	0.365
Expected length of stay (LnELS)	0.044	0.042	1.046	0.298
Water quality (LnWQ)	0.862	0.363	2.378	0.019
Biopori (LnB)	0.106	0.051	2.079	0.040
Filtering tools (LnFT)	-0.078	0.071	-1.106	0.272
Infiltration wells (LnIW)	0.132	0.047	2.807	0.006
Filicium decipiens (LnFD)	0.183	0.118	1.554	0.124
Pterocarpus indicus (LnPI)	0.085	0.113	0.748	0.456
Caesalpinia pulcherrima (LnCP)	0.256	0.100	2.553	0.012
Ficus benyamina (LnFB)	0.272	0.086	3.145	0.002

Note. Source: Data analysis, 2010.

(3) Education (EDC)

The coefficient of education is 0.052. It means if the 1% increase of education level in average, which will not have an impact on the increase of WTP.

(4) Home ownership (HO)

The coefficient of home ownership is -0.036. It means if the 1% increase of home ownership in average, which will not have an impact on the increase of WTP.

(5) Number of family members (NFM)

The coefficient of number of family members is 0.051. It means if the 1% increase of number of family members in average, which will not have an impact on the increase of WTP.

(6) Environmental awareness (EA)

The coefficient of environmental awareness is 0.450. It means if the 1% increase of environmental awareness in average, which will have an impact on the increase of WTP. The higher the environmental awareness of customer PDAM for water resource availability is, the greater the WTP conservation of water resources is.

(7) Sources of water used (SWU)

The coefficient of sources of water used is 0.119. It means if the 1% increase of sources of water used in average, which will not have an impact on the increase of WTP.

(8) Expected length of stay (ELS)

The coefficient of expected length of stay is 0.044. It means if the 1% increase of expected length of stay in average, which will not have an impact on the increase of WTP.

(9) Water quality (WQ)

The coefficient of water quality is 0.862. It means if the 1% increase of water quality in average, which

will have an impact on the increase of WTP. The better of the water quality of customer PDAM is, the growing WTP conservation of water resources in the city of Surakarta is.

(10) Biopori (B)

The coefficient of biopori is 0.106. It means if the 1% increase of biopori in average, which will have an impact on the increase of WTP. The more holes making biopori especially in urban areas with a population and building houses, hotels, and malls is increasing, which will cause the vacant land less, then increasing the WTP conservation of water resources in the city of Surakarta.

(11) Filtering tools (FT)

The coefficient of filtering tools is -0.078. It means if the 1% increase of filtering tools in average, which will not have an impact on the increase of WTP.

(12) Infiltration wells (IW)

The coefficient of infiltration wells is 0.132. It means if the 1% increase of infiltration wells in average, which will have an impact on the increase of WTP. The more wells that are made as infrastructure for the conservation of water resources is, the increasing willingness to pay (WTP) conservation of water resources in the city of Surakarta is.

(13) *Filicium decipiens* (FD)

The coefficient of *Filicium decipiens* is 0.183. It means if the 1% increase of *Filicium decipiens* in average, which will not have an impact on the increase of WTP.

(14) *Pterocarpus indicus* (PI)

The coefficient of *Pterocarpus indicus* is 0.085. It means if the 1% increase of *Pterocarpus indicus* in average, which will not have an impact on the increase of WTP.

(15) *Caesalpinia pulcherrima* (CP)

The coefficient of *Caesalpinia pulcherrima* is 0.256. It means if the 1% increase of *Caesalpinia pulcherrima* in average, which will have an impact on the increase of WTP. *Caesalpinia pulcherrima* trees can be accepted by customers PDAM in the city of Surakarta for urban greening as well as be able to absorb CO₂ that could also enhance the aesthetic beauty of the city.

(16) *Ficus benyamina* (FB)

The coefficient of *Ficus benyamina* is 0.272. It means if the 1% increase of *Ficus benyamina* in average, which will have an impact on the increase of WTP. *Ficus benyamina* trees can be accepted by customers PDAM in the city of Surakarta for storing more water with stronger roots.

Discussion

Conservation of water resources in the city of Surakarta can be done through increasing environmental awareness by the public action on an ongoing basis, maintain the quality of ground water through management of water resources as well. Making holes biopori increasingly disseminated infiltration in urban areas with the more narrow the amount of land, besides, the manufacture of wells to be an obligation to the people who will build residential, hotel and other buildings. *Caesalpinia pulcherrima* trees required for planting absorb CO₂ and enhance the beauty of the city. *Ficus benyamina* trees planted are required by the river.

Conclusions

Conservation of water resources can be done by making biopori, infiltration wells, and plant *caesalpinia*

pulcherima tree in the city of Surakarta and ficus benyamina planted in the river.

The average amount of WTP for the group of households reached to Rp. 5,200 (USD 0.56) and trade group of Rp. 21,000 (USD 2.31). Results of regression analysis showed that variable environmental awareness (EA), water quality (WQ), bipori (B), infiltration wells (IW), *Caesalpinia pulcherima* (CP) and *Ficus benyamina* (FB) have a significant influence on WTP.

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Voluntary Implementation of Performance Measures: The Case of Japanese Local Government^{*}

Lourdes Torres, Vicente Pina
Zaragoza University, Zaragoza, Spain,
Takami Matsuo
Kobe University, Kobe, Japan

The aim of this paper is to study how non-mandatory performance measures are implemented and their use in local governments with a bureaucratic public administration style. This paper studies the biggest six cities of Japan and investigates how Japan's big cities use the performance measures by a questionnaire and semi-structured interviews. The paper shows the difficulty of comparing the developments of these performance measurement systems because of the shortage of actual results with which to assess the impact of each implementation process because of the heterogeneity of experiences in Japan. This study finds each local government has different approaches, goals, and objectives. The choices of suitable performance indicators are at the discretion of the management. The findings are consistent with the "institutional theory" and "conflict/ambiguity" approaches, which highlight, respectively, pressures from the institutional environment to adopt structures and practices with high social value, and the interest of key actors in experimenting with different ways of performance measure implementation. This study shows that performance measurement systems, in practice, are designed to fit into the traditional organization structure of each local government.

Keywords: new public management, performance measures, voluntary implementation, Japanese local governments

Introduction

The development of tools to measure performance is at present on the agenda of many local governments as a public expression of their concern about the good use of taxes. The goal of improving efficiency and effectiveness is not only a matter of managerial rationality but also a political issue on the agenda of OECD countries.

Halachmi (2002) suggested two major reasons for introducing performance measurement as a regular activity in public entities: first, to establish better accountability (external use); and second, to improve performance and productivity (internal use). The OECD (2005) noted different reasons for which countries have adopted the formalization of targets and performance measurement: managing efficiency and

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Lourdes Torres, Professor, Dr., Public sector Accounting and Management, Zaragoza University.

Vicente Pina, Professor, Dr., Public sector Accounting and Management, Zaragoza University.

Takami Matsuo, Professor, Dr., Management control and Public sector Management, Kobe University.

Correspondence concerning this article should be addressed to Takami Matsuo, Kobe University Graduate School of Business Administration, Rokko, Nada, Kobe, 6578501, Japan. E-mail: mats@kobe-u.ac.jp.

effectiveness, improving decision-making, and improving external transparency and accountability to parliament and the public. From the internal use perspective, the basic idea is that performance measurement systems create incentives that help to align individual goals with the objectives of the organization, provide valuable feedback information with the progress towards these objectives, and form the basis for internal and external accountability (Cavalluzzo & Ittner, 2004; Heinrich, 2002). From the external use perspective, transparency has become a widespread symbol of “good governance” in many different contexts today (O’Neill, 2008) and a key piece for holding governments more accountable to citizens.

The aim of this paper is to study how performance measures are implemented and their use in local governments where it is not mandatory. This study argues that, even though performance measures are not compulsory in some countries, there is normative environmental pressure for their adoption which comes from the globalization of new public management (NPM) doctrine. In these cases, it will be explored to what extent the implementation of performance measures is real or rhetorical. The paper studies performance measure implementation in the biggest cities of Japan with a bureaucratic public administration style based on the French and German models.

Theoretical Framework

A range of theories has contributed to explaining, to some extent, the introduction of performance measures into governments through the identification and analysis of the roles and drivers of these reforms. The perspective of adopting performance measures for their value in decision-making purposes has typically been linked to the agency problem, since performance measures in public entities often have the dual function of producing information for internal and external use. It seeks to move the focus of budgeting, management, and accountability away from inputs towards results.

The perspective of adopting performance measures for their value in institutional image and accountability purposes assumes that organizations respond to pressures from their institutional environments and adopt structures and practices that have high social value as answers to external changes in expectations and formal rules. As the introduction of rational decision-making processes into governmental entities is complex, compliance and enforcement of these postulates may be limited to the visible components of rational decision-making, especially the collection and display of information (Dalehite, 2008). So, it may not come as a surprise that managerial innovation could be undertaken simply for image and legitimacy since after two decades of NPM reforms, no government can say that performance measures and accountability of the results of public action are not good. Many studies have used the institutional theory (DiMaggio & Powell, 1983) to explain the features of this implementation perspective and the gap between rhetoric and actual results.

Other authors such as Wilson (1992), Matland (1995), and Barret (2004) highlighted the “conflict” and “ambiguity” often involved in public management reforms. These authors explored how the conflict level of reforms and ambiguity in the implementation of reforms affect the way in which these reforms are implemented. Matland (1995) explored how the conflict level of reforms and ambiguity in the implementation policy of reforms affect the way in which these reforms are adopted. He proposed four implementation perspectives to explain the gap between rhetoric and actual results in public sector management reforms. The “experimental implementation”, with low level of conflict but high level of ambiguity where key actors experiment with implementation, is the Matland approach which best explains the PM initiatives undertaken in this case.

Context

Japanese public administration culture had been influenced by structures import from the French and Prussian legal models before World War II (Sato, 2002). Traditionally, financial resources are concentrated in the central government, which delegates projects and programs to local governments, thereby controlling local governments, however, local governments basically have a high degree of independence, and decentralization has been progressing in recent years. Now, there are 1,774 municipalities which manage 51.7 percent of the total public expenditure of Japan. The majority of Japanese public sector employees are civil servants, and as a consequence, they are not ruled by private sector labor legislation, and most employees work at the same municipality until their retirement age.

It has been pointed out that Japan's approach to NPM is more conservative than other countries (Guthrie, Olson, & Humphrey, 1999), although in recent years TQM initiatives, Kaizen management, ISO and BSC have been implemented by some Japanese local governments. The ministry of Internal Affairs and Communications, which is responsible for establishing systems for local governments, has not systematized or made legal standards for performance management systems. Thus, the creation and implementation of performance management systems can be regarded as a dependent on voluntary and independent approaches in local governments. The implementation depends on the self-governance of each local government, and they have constructed systems by using their own staff or by using external support. Therefore, performance evaluation practices of Japanese municipalities are various, and some municipalities have implemented systems successfully, while many other municipalities have been facing with difficulties to establish outcome benchmark indicators and rational target levels, to utilize the evaluation information in decision making, and to improve their efficiency and effectiveness (Matsuo, 2009).

Methodology

Face-to-face interviews based on the questionnaire of Poister and Streib (1999) were carried out. This allowed us to find out the opinion of Japanese managers about specific issues related to the implementation and use of performance measures and to be sure that the managers understand the questions in the same way.

The interviews were carried out in 2008 in the six ordinance-designated (major) cities¹ of Japan (Yokohama, Osaka, Nagoya, Kobe, Kyoto, and Kawasaki). The selected cities come from different prefectures and represent an important percentage of local government public expenditure in Japan.

The interviewees were the senior performance measures project managers and/or politicians who were responsible for the design and control of the local government performance measurement system². Conducting live interviews provides additional insight into internal and environmental factors and identifies issues not included in the questionnaire which could be important. The questionnaire distinguishes between the views of entities which have carried out a comprehensive implementation of performance measures at a city-wide level and those which have carried out limited initiatives focused on specific areas or services.

¹ Japanese top 10 major cities in the size of population are Yokohama (the 1st place), Osaka (2nd), Nagoya (3rd), Sapporo (4th), Kobe (5th), Fukuoka (6th), Kyoto (7th), Kawasaki (8th), Saitama (9th), and Hiroshima (10th).

² The interviewees were as follows: in Kawasaki, the senior manager and assistant chief of Administrative Evaluation Department in Planning Bureau; in Kobe, the manager of Finance Bureau, and the chief of Planning and Coordination Department in Planning and Coordination Bureau; in Kyoto, the section chief of Strategic Planning Section and the section chief of Coordination section in Planning Bureau; in Nagoya, the deputy-manager of City Management Office in General Affairs Bureau; in Osaka, the general manager and the section chief of Administrative Evaluation Department in City Management Reform Office; and in Yokohama, the section chief of City Management Planning Office and Coordination Bureau.

The questionnaire has three parts. The first and the third are applicable to all cases. Part A includes questions about general background issues such as the reasons for the introduction of performance measures, an overall assessment of the effects of the changes introduced and the primary users. The questions in Part A try to find a contextual approach common to all the local governments studied, focusing the research not only on technical aspects of performance measurement, but also on its impact and on the internal and external environmental factors which enable the reform initiatives. Part B refers to entities with centralized city-wide systems (the development, operation, and outcomes of performance measures). The last block of questions deals with the introduction of different performance indicators in some services.

Analysis of Results

Part A of the questionnaire collects general information about the features of the performance measurement initiatives undertaken in each local government analyzed. The first question asks why local governments have implemented performance measurement systems. All of them, except Kobe, stated “The desire to make better management decisions” as primary reason for implementing performance measurement systems as shown in Table 1. “Citizen demands for greater accountability” are the next most important reasons for implementing performance measures.

Table 1

Motivation of Using Performance Measures

A. Background information (All Users)							
(1) What has motivated your jurisdiction to begin using performance measures?							
		Yokohama	Osaka	Nagoya	Kobe	Kyoto	Kawasaki
(a)	The desire to make better management decisions.	1	1	1		1	1
(b)	Citizen demands for greater accountability.	1	1			1	
(c)	Pressure from elected city officials.			1			
(d)	Other				1		

Note. 1: Effective.

The answers to question one reflect the concern of local governments to make the use of rational decision-making techniques visible through the implementation of data-gathering processes such as performance measurement systems. These answers are related to the institutional image value of collecting and displaying information, since “greater accountability” expresses a formal and democratic principle, and “best practice” assumes that rationality in decision-making is an indicator of “good management”.

All of these implementation experiences have been developed in all cases voluntarily by local governments, without any legislative mandate from central or regional governments, and encouraged by elected officials to improve decision-making or accountability processes.

Table 2 shows the primary users of performance measurement reports. The cities studied except Yokohama send annual performance measurement reports to the Mayor Department and budget officials. Japanese local governments are primarily use performance measures to review the annual budget of programs and services, and because of this information are related to the fiscal year. The yearly elaboration of reports is consistent with the fact that these local governments collect performance measurement for accountability purposes rather than for decision-making purposes, since this data is the visible component of rational decision-making.

Table 2

Primary Users of Performance Measurement Reports

(2) Which of the following individuals and groups form the primary audience for your performance measurement reports?						
	Yokohama	Osaka	Nagoya	Kobe	Kyoto	Kawasaki
a) City manager, chief administrative officer, or other executive staff.		2	1	1	1	1
b) Mayor or professional staff in the mayor's office.		1	1	1	1	1
c) City council members.		1	1	1	1	1
d) Department heads, program managers, other line managers.	1	2	1	1	1	1
e) Budget officials, personnel officials, other professional staff.	1	1	1	1	1	1
f) Citizen advisory boards or groups.		3				1
g) Other (Citizenry etc.)	1	1	1	1	1	1

Note. 1: Annually; 2: Every six months; 3: Every Quarter.

All the cities studied consider important or very important the contribution of performance measures to "Performance-oriented budgeting processes" as shown in Table 3. This answer shows the crucial role of the budget in traditional bureaucratic public administration styles. Only Kawasaki consider the application of performance measures to management processes related to personnel (e.g., appraisal by objectives or pay-for-performance) important.

Table 3

Important Management Processes of Using Performance Measures

B. Background information (For users with centralized, city-wide in systems)						
(1) How important are performance measures to the following management processes in your city?						
	Yokohama	Osaka	Nagoya	Kobe	Kyoto	Kawasaki
(a) Personnel-oriented processes, such as MBO or appraisal by objectives.		4	4	3	3	2
(b) Performance-oriented budgeting processes, such as program, or results oriented budgeting systems.	2	2	2	2	1	2
(c) Strategic planning activities.		1	4	2	2	2
(d) Strategic management processes, such as tracking the progress of strategic initiatives.		1	3		2	2
(e) "Benchmarking" of city departments and services against other, similar cities.		3		3	2	2
(f) Collecting baseline data for monitoring effectiveness of continuous improvement efforts.		3			1	
(g) Incentive systems such as pay-for-performance, shared savings, or gain-sharing programs.		4	4			2
(h) Targeting particular programs for more intensive evaluations.		4	4	2		

Note. 1: Very important; 2: Important; 3: Somewhat important; 4: Not at all important.

All the local governments studied have involved managers in the setting of performance measures and have had some trouble in getting lower-level employees to support the performance measurement systems as shown in Table 4. The biggest problem in getting staff support and understanding is the workload involved in preparing evaluation sheets. In particular, this is a problem in Nagoya and Yokohama, and this is one reason that Yokohama stopped accountability-oriented performance evaluation.

Citizen surveys are used, to a great extent, in the development of performance measures, although, except

for Kawasaki, citizens are not directly involved in the implementation processes.

Table 4

Extent of Developing Performance Measures

C. The development of performance measures						
(1) To what extent do the following statements describe how performance measures are developed in your city?						
	Yokohama	Osaka	Nagoya	Kobe	Kyoto	Kawasaki
(a) We involve managers in the development of performance measures.	1	1	1	1	1	1
(b) We have trouble in getting the city council to support our performance measurement system.		2	1	3	3	3
(c) We involve citizens and/or citizen's groups in the development of performance measures.		3	4	4	2	1
(d) Data from citizen surveys help to determine criteria to include in our measurement system.		2		2	1	2
(e) We have trouble in getting lower-level employees to support our performance measurement system.	1	2	1	3	3	2
(f) We involve lower-level employees in the development of performance measures.	1	2	1		1	1
(g) We have trouble in getting citizens to support our performance measurement system.		2	4		4	

Note. 1: Usually; 2: Sometimes; 3: Seldom; 4: Never.

Table 5

Extent of Operating Performance Measures

D. The operation of performance measures						
(1) To what extent do the following statements describe how performance measures operate in your city?						
	Yokohama	Osaka	Nagoya	Kobe	Kyoto	Kawasaki
(a) We use similar measures to compare performance among operating units.		4	2	4	4	4
(b) We use measures to track performance over time.		2	1	1	1	2
(c) When developing performance measures, we focus on what is important not on the data available.		3	3	2	2	2
(d) Our measures are derived from the mission, goals, objectives, and service standards.	1	1	3	1	1	2
(e) We have trouble in measuring the quality of our programs and services.		1	1	2	2	2
(f) We have trouble in keeping our performance measures up-to-date.		2	1	2	2	2
(g) Our staff lacks the analytical skills needed to analyze the performance measurement data.		2			3	
(h) Data from our performance measurement are used in pay rises and promotions.		4	4	3	3	
(i) We have trouble in compiling the data from performance measurement in a timely manner.		3	3		3	3

Note. 1: Commonly; 2: Sometimes; 3: Rarely; 4: Not at all.

Almost none of the cities perform comparisons between departments or municipalities, although all of them have followed a top-down approach as shown in Table 5. In Japanese local government, the potential of comparisons between departments and cities is not recognized, so it is difficult to validate target values and results. Therefore, even when used indirectly in personnel evaluations, performance measurement data are not necessarily related to personnel evaluations in a systematic or direct manner. Japanese municipalities are more interested in time series analysis than in cross comparison with other departments, because of their priority with

budgetary process.

As can be seen in Table 6, the better scores in performance measurement outcomes are found in Kobe, Kyoto, and Kawasaki. Except for Yokohama, all the cities believe that their policies and programs have changed for the better. In general, there is a great degree of coincidence in considering that performance measures have brought about improvements in the quality of decisions, quality of services, and accountability of individual managers. Furthermore, all of them find an influence of performance measures in improving the level of employee focus on organizational goals, even though none of these local governments consider the influence of performance measures important in issues related to employees such as personnel performance appraisals. These cities consider important the contribution of performance measures to the reduction of cost.

Table 7 shows the set of performance indicators elaborated on the basis of the performance measurement system. As can be seen in almost all cases, output indicators, which represent the workload of the services, have been indicated more than other kinds of performance measures because, considered alone, they are not sensitive to political or managerial criticism in possible benchmarking and/or evaluation processes.

Table 6

Impact of Performance Measurement System

E. Performance measurement outcomes						
(1) How would you characterize the impact of your performance measurement system on the following areas?						
	Yokohama	Osaka	Nagoya	Kobe	Kyoto	Kawasaki
(a) Changes in the focus or emphasis of programs.	3	2	2	1	2	2
(b) Improvements in the quality of decisions or decision-making capacity.		2	3	3	2	2
(c) Changes in program priorities.		2	3	2		2
(e) Improvements in the objectivity of personnel performance appraisals.		4				2
(f) Improvements in service quality.		3		2	1	2
(g) Improvements in the level of employee focus on organizational goals.		2		2	2	2
(h) Reductions in the cost of city operations.		3	1	1	1	2
(i) Improvements in the relationship between administrators and elected officials.		2	4			2
(j) Improvements in the accountability of individual managers.	3	2	2	2	2	2

Note. 1: Substantial; 2: Moderate; 3: Slight; 4: None.

Table 7

Performance Measure Applications

	Output	Efficiency	Effectiveness	Service quality	Satisfaction
Yokohama	89%	0%	89%	89%	89%
Osaka	74%	0%	47%	0%	5%
Nagoya	79%	58%	53%	16%	11%
Kobe	63%	63%	26%	0%	5%
Kyoto	100%	100%	79%	0%	79%
Kawasaki	68%	0%	42%	5%	0%

The orientation of performance measure to the budgetary process explains that some local governments do not disclose efficiency measures. Each city sets outcome indicators from an achievement-oriented perspective, but except for Kyoto, there is not much potential for comparison with other cities. At present, none initiative of

comparison between cities has been taken in Japan.

Discussion

The local government studies give a positive global opinion about the implementation experience, in terms of improvements in the quality of decisions or decision-making capacity and in the accountability of individual managers. The introduction of performance measurement systems in the public sector has typically been linked to the agency and institutional approaches. Performance measures in public entities often have the dual function of producing information for internal and external use, which makes the agency relationship less straightforward than in the private sector. There are intra-organizational determinants which basically use an economic and rational decision-making argumentation: all interviewees agree that performance measures can help produce better decisions. Likewise, extra-organizational determinants are derived from the idea that organizations adapt their structures and processes to external demands and expectations as a symbol of responsiveness and good management. The intrinsic value of production and collection of performance measures in terms of image contribute to explaining the “decoupling” of performance measurement systems not integrated with the overall management of the organization, as the institutional theory states. The Japanese case also shows the dual pressures detected in Anglo-Saxon countries to meet external accountability demands and improve their internal performance with the same pool of performance indicators (Boyne, Martin, & Walker, 2004). This leads us to distinguish between the availability of performance information and its use for decision-making. Zimmerman (1977) stated that government officials do not volunteer more information than is required or in their interest, and that performance disclosures are often made only in response to demand. The challenge is how to reconcile the disclosure of external and comparable performance indicators with their usefulness for decision-making.

The Japanese central government does not require local governments to implement performance measurement systems for accountability or decision-making purposes. It is a case of discretionary implementation of performance measures in local governments since there are no pressures, guidelines, rules or legal dispositions from central government for this purpose. The Japanese central government has adopted a bottom-up approach giving freedom to local governments to decide whether or not to implement and/or disclose performance measures, which performance indicators to disclose, if any, and how to do it. The local government studies have applied top-down approach, probably due to the strong position of mayors who are directly elected by citizens. This policy has led to important variations in practices across local governments

The results show that only Kawasaki considers performance-related payments as an important incentive system. In most cities, salaries are negotiated under a pay step system in which there are the same salaries for the same staff qualification level and there is reluctance to introduce bonuses based on productivity achievements, measured by performance indicators. When a productivity bonus is introduced, the amount is not significant. In designing an implementation policy, “conflict” and “ambiguity” are often negatively correlated. Ambiguity is a way to limit conflicts. The Japanese central government, instead of using coercion, has adopted a policy that minimizes potential conflicts in the implementation of performance measures, possibly because of the special status of civil servants and the strong political position of mayors. The policy of avoiding conflicts in the implementation of performance measures, together with the high ambiguity resulting from the lack of guidelines, place the Japanese case, following the above-mentioned conflict/ambiguity approach, into the “experimental” model. The resulting model is “experimental” because the implementation policy of

performance measures at central and local government levels has been to avoid conflicts even at the expense of both high ambiguity and of making the implementation of performance measurement optional. This classification is also consistent with the findings of our study about the “decoupling” between performance measures and traditional organizational and managerial structures, as well as in the absence of real consequences resulting from the implementation of performance measurement systems. The weak integration means that local governments maintain their work routines and procedures after the implementation, which leads to a decoupling between performance measures and job responsibilities.

As a consequence of the high level of ambiguity and low level of conflict detected, the local government studies show different and non-comparable performance measurement systems, implementation procedures, and actual results. The lack of conflict has allowed the use of top-down implementation techniques, since it is possible to combine centralized guidelines from mayors or city managers’ offices with the participation of a number of actors interested in including their views in the implementation process. Output indicators are the most common performance measure in all services and cities, because they are easy to obtain and have low exposure to criticism.

Managers look for ways of minimizing the impact of public management reforms on their work by treating it as a formal requirement that has little practical importance for their real work and routines and contributes to creating the decoupling effect. Notwithstanding, the existence of decoupling and the non-use of the performance measurement systems for decision-making purposes do not necessarily mean that the performance measurement systems do not have any effects in Japan. In many cases, the performance evaluation system has provided useful information for performance-oriented budgeting processes. Especially in the case of Kawasaki, bureaus of planning finance and personnel use the common evaluation information data base for their decision making.

Conclusions

This paper has followed a cross-theory strategy, which allows us to build a wider explanation of the cases studies based on a range of plausible theoretical interpretations. The findings are consistent with the “institutional theory” and “conflict/ambiguity” approaches, which highlight, respectively, pressures from the institutional environment to adopt structures and practices with high social value, and the interest of key actors in experimenting with different ways of performance measure implementation.

This study shows that performance measurement systems, in practice, are designed to fit into the traditional organization structure of each local government. As each local government has different approaches, goals, and objectives, the choice of suitable performance indicators is at the discretion of the management. This makes benchmarking between cities difficult since, when performance indicators are disclosed, they are not comparable. The answers of interviewees show that central governments or oversight bodies have no influence over performance indicator design and disclosure by local governments.

Although public management literature shows the impact of the institutional image value on the use of performance measurements, in the Japanese case, it is not clear how the design of these measurements can serve the *ad hoc* interests of the actors who are involved in the processes. As citizens remain unaware of the implementation processes and performance measures have no real impact on organizational structures, an explanation seems to be that of creating a reputation for the city of being “well managed” in order to gain legitimacy, which is consistent with the interests of politicians and senior managers.

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A Service Science View of a Sustainable Destination Management

Luca Carrubbo, Andrea Moretta Tartaglione

University of Cassino and Southern Lazio, Cassino (FR), Italy

Primiano Di Nauta

University of Foggia, Foggia, Italy

Alberto Bilotta

University La Sapienza, Roma, Italy

We live in a service age. In everyday life, as well as in business management, every action, behaviour, process, strategy is increasingly oriented to service. Gradually, every human activity is positively affected by service logics in search of better performance and improved quality levels. Tourism business is strongly affected by the principles of service sciences, in fact, in tourism, both the internal organization of companies and the external promotion of destinations are strictly related to service. Moreover, we can observe how all relations intended for the development of tourism, as well as wise and competitive destination management are based on service logics. Thus, this paper aims at highlighting the relevant role of new service paradigms within the strategic and operational models of destination management, as well as the significant contribution of Service Sciences, Management and Engineering and Design (SSMED) foundations to business competitiveness for today's tourism enterprises. After analyzing the common behaviors of tourism destination actors, it has been possible to deploy a comparison between different statistical trends triggering a transition toward the service age. Thereafter, direct effects of verified changes on today's destination systems have been examined, highlighting an emerging common vision of organizations, operations, strategies, markets, and developments on tourism services.

Keywords: service science, value co-creation, destination management, tourism services

The Increasing Importance of a Service Perspective for Competitiveness Today

Life is changing. Decision making is based on changing elements, and nowadays interpretation models need to be dynamic as well. The growing relevance of service in every productive sector, for all business strategies, in any situation, and the recent related developments of service oriented logics (Levitt, 1981) lead to new concepts of competitiveness (Rust, 2004), success, sustainability, survival (Barile, 2009; Golinelli, 2010). These concepts are theoretically valid for "tourism business management", but they may, certainly and

Luca Carrubbo, Ph.D. in Business Management, Department of Economics and Law, University of Cassino and Southern Lazio.
Andrea Moretta Tartaglione, Assistant Professor of Business Management, Department of Economics and Law, University of Cassino and Southern Lazio.

Primiano Di Nauta, Assistant Professor of Business Management, Department of Economics, University of Foggia.

Alberto Bilotta, Ph.D. Student in Business Management, Department of Management, University La Sapienza.

Correspondence concerning this article should be addressed to Luca Carrubbo, Via Sant'Angelo snc, Località Folcara, 03043, Cassino (FR), Italy. E-mail: l.carrubbo@unicas.it.

especially, be put into practice in “destination management”. Today, the ability to evolve, adapting ourselves to internal and external changes, represents the main requirement to compete and gain adequate market share. Often, within tourism destination systems, firms have to consider becoming part of a network (Polese & Minguzzi, 2009; Polese, 2009), in order to share complementary resources, and to offer a better overall service (Basole & Rouse, 2008; Ng et al., 2012), involving tourists, operators, and third parties (stakeholders). Indeed, nowadays tourism quite frequently stresses policies based on service logics and a reticular approach towards a sort of evolutions for destination systems, becoming more efficient, complex, perhaps, even smarter. The focus on collaboration strategies, the value of customer participation in co-creation processes (Woodruff, 1997; Polese, Pels, & Brodie, 2011) and the common willingness to upgrade supply quality, following production service logic, highlight the possibility to use new scientific service centered proposals to interpret tourism phenomena.

Starting from Porter’s (1980) thinking, the concentration of similar interconnected firms in a delimited geographical region provides global competitive advantages, and according to recent international studies which focus on service, the networking culture assumes greater relevance in the business of tourism destinations, involving the active participation on behalf of producers/providers, distributors/dealers, facilitators/enablers, intermediaries/organizers, consumers/users. Considering Porter’s (1998) diamond model, we may have four foundational elements for competitive advantages within a delimited area, such as condition factors (high quality and specialized resources), related and supporting industries (clusters of firms), demand conditions (sophisticated segments), and context (public investments and sustained upgrading). Indeed, following the main principles of service sciences, it may be possible to review the relevance of certain statistics in tourism economics, as well as business trends for destination operators, more or less knowingly related to one another. As regards each specific reference of emerging service sciences (Maglio & Spohrer, 2008a, 2008b), and starting from recent propositions made by IBM researchers (Spohrer, Anderson, Ager, & Pass, 2008), we should take into account 10 different foundational premises for the interpretation of evidences and events. These are: resources; entities; access rights; value co-creation interactions; governance interactions; outcomes; stakeholders; measures; networks; and ecology.

The analysis of recent tourism historical trends, for several specific tourism destinations, can allow for interesting evaluations and the identification of specific contact points existing with the 10 founding concepts of SSMED (Spohrer, Anderson, Pass, & Ager, 2008), according to the following research steps:

- Highlighting new tourist trends;
- Examining the 10 service sciences founding concepts;
- Detecting their correlation with tourism phenomenon;
- Reviewing results from a service science perspective;
- Proposing final thoughts for future works and researches.

New Tourism Trends for Destination Management

Tourism has been challenged by strong and substantial changes on both the demand and supply side (Kotler, Bowen, & Makens, 2009), nevertheless, it is still an important driver and competitive factor for many geographical areas and world economies.

On the supply side, to respond and to cope with the most independent and informed demand (Pencarelli, 2003), tourism companies have had to continuously adjust their “products” (Smith, 1994). The tourism service

is now much broader than before, more attentive to the specific needs of differentiated, enriched, and personalized tourists, constantly in search of a new “perceived” and sustainable expansion. The characteristics of the offered “product” (flexible, scalable, organizational, elastic, and highly promotional) allow for international development through increased exports and gradual settlement attempts outside the locality, overcoming the traditional difficulties of their traditional linked services (intangible, perishable, non-storable, characterized by the simultaneity between offer and use). The so-called “area products” (Golinelli & Simoni, 2005) is a great example. In fact, area products enhance the allocation of resources in a limited area, so as to attract tourists from the successful international market. The attraction ability usually depends on the presence of certain stratagems associated with “heritage” interest, and judged by the existence of a network of related services and strategic relationships (Sheth & Parvatiyar, 2000). Such a finding fits perfectly with the concepts of interaction (Hakansson & Snehota, 1995; Prahalad & Ramaswamy, 2004), co-creation (Ballantyne & Varey, 2006), mutual benefit (Bartlett & Ghoshal, 1990), re-presented by service logics in general (Vargo & Morgan, 2005; Vargo, Maglio, & Akaka, 2008). Indeed, from mass tourism to the experience economy (Pine & Gilmore, 2000), the evolution of the concepts of a tourism product is the result of an overall remarkable change that concerns society as a whole.

Demand wise the tourism product is perceived as the overall tourism experience, on the basis of tourists’ perceptions and appreciations. Supply wise, it is a system of resources and expertises based on integrations and interactions emerging and enhancing the attractive factors (Della Corte, 2000), as interpreted by the service sciences (Maglio & Spohrer, 2008a; Maglio, Kieliszewski, & Spohrer, 2010). Such factors are considered as elements of consumer representation, and simultaneously offered by companies that through attractions, facilities, accessibility and reports, organize, implement and offer them to the market (Rispoli & Tamma, 1992). In recent decades, the increasing tourism demands, and the corresponding rise of tourist flows have been well-represented by the spending power improvement (thanks to the higher average wealth), an increase in the number of trips (also linked to phenomena of social mobility and employment, higher education, more leisure time, and increasing aging rate), distances cover more easily (in virtue of technology development in the transportation sector and the relentless electronic diffusion) and a significant change in tourism services consumption patterns, based on a more general change of perspective (Echtner & Prasad, 2003). Such interpretation emphasizes the importance linked to relations (Grönroos, 2000), relationship marketing (Gummesson, 1999), service marketing (Lovelock & Gummesson, 2004), and emphasizes the concepts of “global product”. The best examples of these concepts are club products, or organizational formulas that aggregate inside a collective management of special initiatives, aiming at the promotion of a uniform set of tourism resources suited to serve the selected target market (Pencarelli, 2003). Within certain regions, many activities have been promoted to encourage the demands of international tourism, above all, it has been done to benefit local tourism businesses (Casarin, 1996; Caroli, 1999), especially small enterprises, which not always able to independently pursue a policy of continuous and significant development (due to the lack of financial resources, knowhow, and appropriate contractual capacity), specifically according to a network logic. In this sense, we can say that tourism destinations may be intended as a location that offers multiple services which enable tourists to visit local attractions. This concept may be applied in many ways, such as a theme park or a country club hotel, both owned and operated by a single commercial group of companies through supporting services of other close operators such as restaurants, spas, shops, transports (Vellas & Becherel, 1999), managed by a central administration board, allowing for a cohesive identity, or a specific universal brand name.

The interdependence of attractions, services, transportation, information, and promotions stresses the required collaboration of all actors located within the same geographical area or in its close proximities (Polese & Carrubbo, 2008). To be efficient, a tourism destination should operate as an integrated system that share with the other systems that have the same visions and purposes. Other academic interpretations on tourism destinations were deployed in terms of “package”, “set”, “amalgam”, stressing concepts of integration (Buhalis, 2000), availability (Pearce, 1992), cooperation (de Araujo & Bramwell, 2002), attractions (Pechlaner & Weiermaier, 2000). This kind of synergic cooperation (Della Corte, 2000) fosters an innovative environment, quality improvement, active customer participation (e.g., economy experiences, Pine and Gilmore, 2000).

In the model for destination competitiveness formulated by Ritchie and Crouch (2003), a specific differentiation was made between destination infrastructures (water, sewage system, roads, etc.) and destination superstructures (tourist services such as hotels, restaurants, information centers, etc.). By analyzing the studies carried out by Crouch (1992), we can say that holiday costs represent the first determinants of destination performances. They include transport services and from the destinations, accommodation, food, beverages, tour services. Price competitiveness refers to exchange rate movements, productivity levels, and qualitative factors affecting the destination attractiveness.

Statistically, tourism has certainly become more sophisticated, organized and aware of customer needs. In particular, destination management shows more land attraction possibilities and leads to an improved vacation time experience. Such trends are confirmed by statistics on tourism organizations (in Europe and in Italy). We may note a general duration increase of holidays (nights spent within a same delimited area), especially in leisure tourism, using hotels and complementary structures for accommodations (see Figure 1).

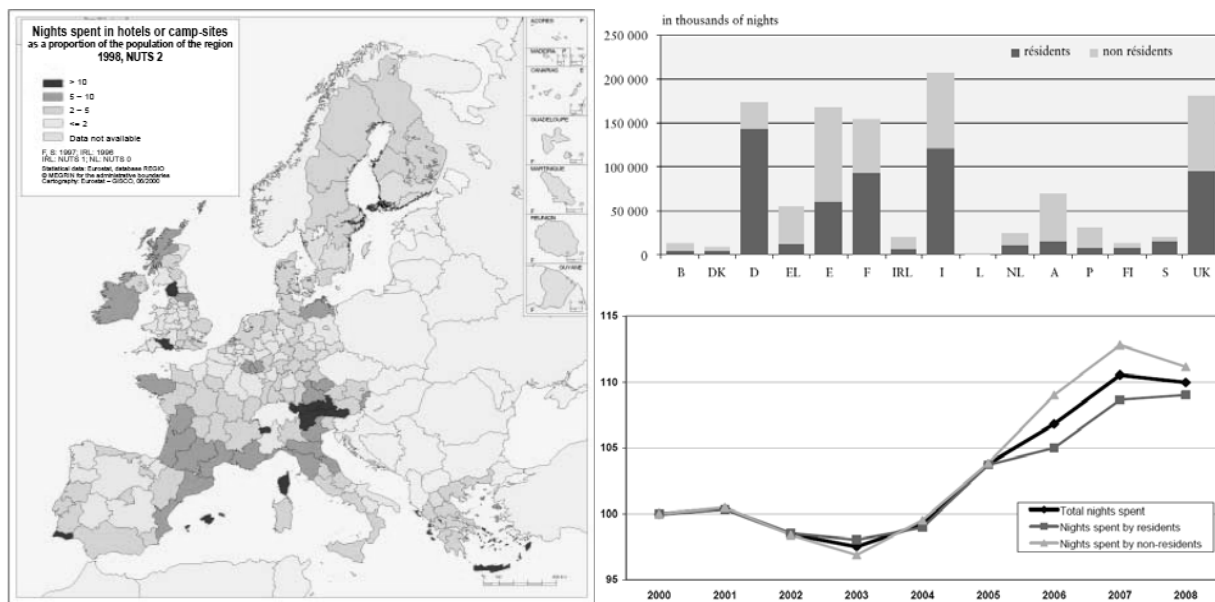


Figure 1. Evolution of the number of nights spent per holiday, EU27, 1998-2008. Source: Elaboration on ISNART Union Camere, 2009 ISTAT.

In particular, observing the situation in Italy (see Figure 2), there has been a sort of evolution both for the individual travel organization and the number of nights spent within the same geographical area. In Italy, compared with 2002, the proportion between nights spent for each leisure holiday remarkably rose comparing two different periods (2002-2004 vs. 2007-2009), we see the higher level of average per each travel length.

	2002		2003		2004	
	1-3 Nights	4 Nights - more	1-3 Nights	4 Nights - more	1-3 Nights	4 Nights - more
Arrivals	35.954,00	45.805,00	36.113,00	44.005,00	38.173,00	45.097,00
Presences	68.992,00	558.999,00	68.741,00	525.420,00	72.276,00	520.730,00
	YEAR					
	2007		2008		2009	
	1-3 Nights	4 Nights - more	1-3 Nights	4 Nights - more	1-3 Nights	4 Nights - more
Arrivals	47.911,00	49.262,00	55.919,00	50.891,00	49.417,00	48.520,00
Presences	88.293,00	538.698,00	103.260,00	540.837,00	93.538,00	526.049,00

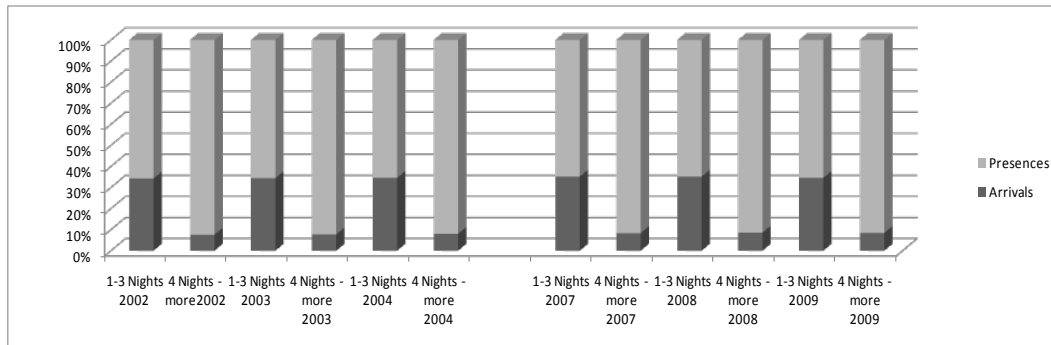


Figure 2. Evolution of the number of nights spent per holiday, 2002-2009, Italy. Source: Authors' elaboration on 2010 ISTAT data.

The arising number of nights spent per travel, and the duration of reservations within a single “wide place” in general, highlight the more efficient organization of defined tourism destinations. The ability to favour and manage several choices inside the same geographical area allows for the growth of tourism flows and reinforces. In the long run, the global competitiveness of the territory enriches global development, innovation and sustainability.

The harmonization of local needs, and the exploitation of the complementarities of interests must take into account the possibility of combinations and the complex nature of cross-links (Polese & Minguzzi, 2009), in order to achieve the correct appreciation of the actual characteristics and potential of a specific territory (country specific). Therefore, in general the ability to orient the client and build quality offers that meet the expectations of multiple targets of tourists, moves its focus from the activities performed by the individual company to a broader level that affects the target as a whole (Polese, 2009). An imperative for the tourism of any “place” is to present the destination offer as a set, more or less articulate, of tourism opportunities and experiences, definable and recognizable as a whole.

In this sense, destination management is to be understood as an attempt to promote and organize the integration of resources of a specific area. In fact, such resources converge within an organization to create tourism, so that it increases its performance and its ability to compete. From the whole system perspective (Mele, Pels, & Polese, 2010), the set of environmental and instrumental factors contribute to the definition of global tourism products, and link the following:

- elements of attraction in destination and transit areas, whether natural, manmade (heritage), cultural (museums, theaters, festivals), social (local living, socializing opportunities);
- services and facilities in the destination and transit areas (hotels, dining, sports, transportation, other services and facilities);
- access to target elements (road, rail, airports and seaways, type of vehicle, transportation service schedules, customs control);

- the image of the destination, which often influences the image of each single organization operating on that specific territory.

With such an approach, destination management may represent the strategic, organizational, and operational means as a whole, to manage the process of identifying, building, promoting and marketing the service product delivered by a specific tourism location (Martini, 2005). Ultimately, in this context, in order to stand out and maintain a distinctive position on the market, the targets must also have adequate and solid professional skills, with reference to the enhancement of tourism, the aggregation purpose, and the necessary synergies to be activated on the territory (Godfrey & Clarke, 2002).

SSMED Fundamental Concepts

Service science is an IBM initiative (conceived by Almaden Research Centre in US) engaging hundreds of researchers worldwide in an attempt to promote a new meta-discipline capable of satisfying an emerging research issue: the study of service systems (Maglio & Spohrer, 2008b). This is a multidisciplinary “open source” project, based on many pillars represented by computer sciences, human behaviors, organizational theories, industrial engineering, business strategy, management sciences, social and cognitive sciences, as well as legal sciences.

In terms of science, it examines service systems and their evolutions, referring to the roles of people, knowledge, shared information and technology, as well as the relevance of customers (demand) inside production processes (supply). In terms of management, it studies how to improve efficiency evaluations, relations of sustainability and systems. In terms of engineering, it develops new technologies, adequate approaches to promote information verification, measurement and diffusion. In terms of design, it analyzes technique configurations and studies so as to correctly structure service systems.

Accordingly, service dominant logic (Vargo & Lusch, 2008) and service science (Maglio & Spohrer, 2008a, 2008b), see emerging service system studies as the analysis of how and how much any specific kinds of system can be “interpreted” especially, as something following service logics. New reflections about value creation models have been carried out for service systems. In such models, the form or nature do not refer to the type of contribution on behalf of the actors involved in value generation processes. Instead, they highlight the improving interaction dynamic between system elements and the relevance of resources allocation, collaboration advantages and the importance of alliances, roles, rules, and cooperative strategies (Castells, 1996; Gulati, 1998).

By analyzing the main concepts of service science, as recently proven by SSMED researchers, it is possible to outline the key elements for this study (as shown in Figure 3), starting from the 10 founding premises discussed above.

Following, for each SSMED FCs, we find the specific detail reported by authors (Maglio, Spohrer, Ager, & Pass in 2008), also including other personal comments or syntheses on the same subject:

- (1) Resources: anything that has a name and is useful can be considered as a resource.
- (2) Entities: some complex resource configurations can initiate actions, and these are called service system entities (or just entities, or simply service systems).
- (3) Access rights: dealing with the social norms and legal regulations associated with resource access and usage.
- (4) Value co-creation interactions: also known as value-proposition-based interaction mechanisms.

(5) Governance interactions: intuitively, governance mechanisms are a type of value-proposition between an authority service system entity and a community of governed service system entities.

(6) Outcomes: when service system entities interact, value-co-creation is the only one of the possible outcomes.

(7) Stakeholders: the four primary types of stakeholders are customers, providers, authorities, and competitors.

(8) Measures: the four primary types of measures are quality, productivity, compliance, and sustainable innovation.

(9) Networks: also known as service system networks, service system entities interact with other service system entities (normatively) via value-propositions.

(10) Ecology: also known as service system ecology, the macro-scale interactions of the populations of different types of service system entities.

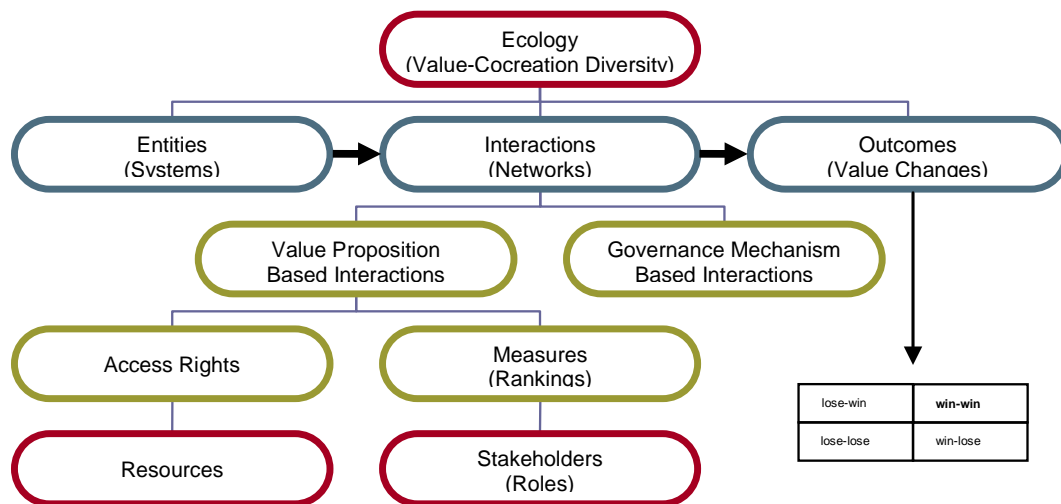


Figure 3. SSMED foundations. Source: Spohrer and Maglio, 2008.

SSMED Implications for Destination Management

What attracts visitors, residents, companies, investors, and stakeholders to a specific place?

Most reasons were explained by cluster theories, in which companies within a tourism destination tend to cluster, forming critical masses in one place to take advantages of synergies such as increased productivity, higher leverage of innovation, and service management (Grönroos, 2000), and, in essence, the possibility to increase competitiveness.

Therefore, following service science foundations, it is possible to define direct consequences for destination management, in terms of organization and logistics, destination marketing, risk sharing, global efficiency are deriving from two principal categorization of system features, such as interactions and configurations.

In service science, resources, both physical and non-physical, are potentially useful (Maglio et al., 2008) (SSMED FC 1—Resource), starting from well-known definition of service systems, resources are usually identifiable with the concepts of persons, business, shared information, and technology. In system frameworks,

available resources may be guaranteed by a satisfactory relationship between organizations (Mele & Polese, 2009), reinforcing coordination and harmonization, in order to better manage their acquisition of resources (Golinelli, 2009; Barile & Polese, 2009). Considering the collective participation in the construction of tourism offers, we should take into account a shared vision for destination development and its valorization position, regarding the relevant role of resources sharing in a system context. On a daily basis, we need to manage politics, operations, and relations, with the goals to gain competitiveness and strengthen relationships with outsiders.

In service science, all service system entities are resources, but not all resources are service system entities. Intuitively, entities are people, businesses, government agencies, and non-profit organizations (Spohrer, Maglio, Bailey, & Gruhl, 2007) (SSMED FC 2—Entities). Service systems are socially constructed collections of service events in which participants exchange beneficial actions through a knowledge-based strategy that captures value from a provider-client relationship (Katzan, 2008). A service system is any number of elements, interconnections, attributes, and stakeholders interacting in a co-productive relationship that creates value, in which principal interactions take place at the interface between providers and customers (Spohrer, Vargo, Maglio, & Caswell, 2008), focusing on engineering and delivering services using all available means to realize respective values for both providers and consumers (Qiu, 2009). Using the reticular approach, destination operators may act as catalysts also for external entrepreneurial initiatives, directing them to common goals rather than to individual projects, enabling an increasing collective negotiating power towards other entities or stakeholders.

In service science, value co-creation interactions are mechanisms for changing the entities access rights to resources referring to service system interactions and outcomes (Maglio, Srinivasan, Kreulen, & Spohrer, 2006), reinforcing the contributions of actor groups (associations, consortia, joint ventures) (SSMED FC 3—access rights). Access rights are referred to properties (owned outright), contracts (leased rights), public uses (shared access), and personal relations (privileged access). As for destinations, it is interesting to relate the organizations to historical and artistic attractions, considering the relationships between the events, strategic positioning, cooperation, and individual objectives (in terms of seasonality, target customers, etc.), in order to synergistically fit in a unique plan of activities to promote a destination, enhancing the effects of interactive actions. With the view to achieve such, organizations have to know and study the kind of resources and existing local factors, such as infrastructure, accessibility, accommodation, public policies, entrepreneurship, attractions, and specific features (climate, location, culture, history, ability to perform activities, and special events).

For service science, value co-creation interactions are promises and contracts that entities agree to keep as they believe they are implementing value-co-creation for all involved entities (Lusch, Vargo, & O'Brien, 2007) (SSMED FC 4—value co-creation interactions). Subsequently, interaction becomes a value driver that allows for service systems to develop a joint process of value creation, service systems can create competitive advantages by improving reticular relationships (Lusch, Vargo, & Tanniru, 2009).

Therefore, the value generation process of a destination and related management models both refer to a co-creation logic in which territorial actors actively participate within a sophisticated organization (Crouch, 2006), a production district, a social system or a smart service system (Spohrer, 2010; Barile & Polese, 2010, 2011; Demirkan, Spohrer, & Krishna, 2011a, 2011b). In tourism destinations, achieved mechanisms of co-production and a universal image for communications and marketing allow for the entire system to take on the role of real resource integrator, with distinctive features and specific final goals.

For service science, governance interactions depend on the degree of compliance of the governed entities (Maglio, Spohrer, Ager, & Pass, 2008) (SSMED FC 5—governance interactions). The ability to establish relationships delineates the actual efficiency of government actions which contribute to the equilibrium of the systems (internal viewpoint), and satisfaction of supra-systems (external viewpoint) (Barile & Polese, 2009). Insisting on destination systems, we have to favor: (1) the presence of strong meta-management bodies and a shared destination strategic plan; (2) the involvement of different categories of private operators in the management of the destinations; and (3) the concentration of resources on a defined number of initiatives truly regarding the heritage and attractions of the destinations. Typically, for the development of a destination, the role of meta-manager is made by a recognized public board. Whatever the genesis and nature of the meta-management board shows the importance of the involvement of different categories of actors (businesses and tourism trade associations, cultural institutions, etc.) of the destinations. These actors, also called viable service systems, interacting with each other, can contribute to the development of a specific local system, which is a representation of all possible systems organized within a specific territory/destination (Barile & Di Nauta, 2011).

The above consideration can be described combining the theoretical frameworks of service sciences and viable systems approaches (Golinelli, 2010). From this perspective, a destination is a viable system territory, composed by territorial systems able to support government decisions which aim at improving the chances of survival of the specific areas, at the same time, allowing for the evolutions of project proposals for:

- The heritage of a region;
- The development of a regional vocation;
- The growth of competitiveness of territorial systems.

Service sciences and viable systems approach (VSA) research highlight possible outcomes of service systems: (1) win-win; (2) lose-lose; (3) win-lose; and (4) lose-win (Maglio et al., 2008) (SSMED FC 6—outcomes). Tourism business competitiveness and long term sustainability are related to the ability to cooperate, arise service quality, and involve every operant organization under the win-win logic. To develop a coordination policy means to define the territorial system, its philosophy and values, determining a competitive analysis, and implementing monitoring and evaluation in collaboration.

For service sciences, business and social systems address more than the four fundamental stakeholder perspectives (customer, provider, authority, and competition). And it is possible to methodize the types of value-co-creation interactions, as shown by Maglio, Spohrer, Ager, and Pass in 2008, considering other stakeholder perspectives including employees, partners, entrepreneurs, criminals, victims, underserved, citizens, managers, children, the elderly, and many others (SSMED FC 7—stakeholders). Also for destinations, such actions indeed may be decided and approved by different stakeholders. In some cases, the local authority (municipality, province, farm tourism promotion) is to play the role of the main government body for the destination management. In other cases, other subjects (coordinator subject and/or proponent subject) intervene on the government process. All three subjects compose the whole government body. In synthesis, we have three logical levels of government:

- The Ordinator Subject (O.S.), usually the local authority, deputed to the identification of action paths deriving from a subjective reading of the environment that, through the identification of vocations, leads to the extraction of one or more contexts to which possible coordinators should focus on;
- One or more Coordinator Subjects (C.S.), able to develop proposals within the contexts identified by the

O.S.;

- One or more Proponent Subjects (P.S.), involved in projects connected with the proposals made by the C.S..

There is no rigid distinction between subjects and roles, generally, the variety of destination management issues require specific skills rarely owned by a single subject. As a consequence, the necessity to place other subjects in support of the local authority should clarify the fact that the local authority is present in all the phases of the governing process, especially in monitoring activities. In addition, the role of the O.S. must necessarily be carried out by an institutional subject, while the C.S. and the P.S. may be institutional or private, or even mix organizations together. Of course, the action paths identified by the O.S. fall within an upstream decision making context, which could refer to other subjects of a higher decision making levels (Barile & Di Nauta, 2011). The various levels are structured according to a typical application effectively covered in VSA, as shown in the following figure.

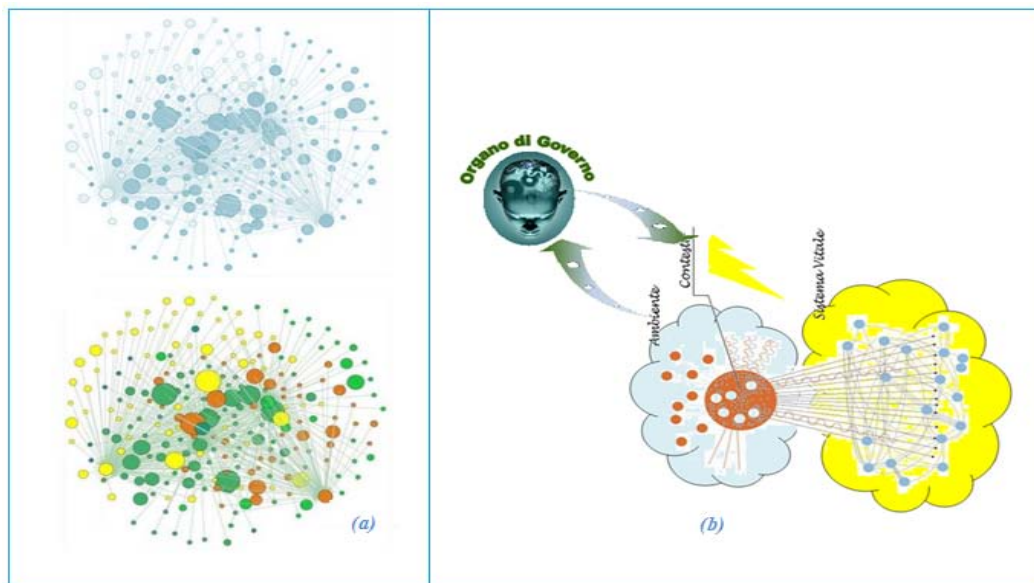


Figure 4. Extraction of contexts by the government body. Source: Barile and Di Nauta, 2011.

The present figure summarizes the steps, pointing out, in the Figure 4—image (a), how from the same environment different government bodies (e.g., O.S, C.S, P.S) can extract different contexts (in different shapes and colors). In the Figure 4—image (b), more specifically, shows how in the “cloud” identified as the viable system, the involved components are not only those already in the context, but appear to be even more numerous than in the starting environment next to the decision maker.

In service science, any decision-making of the government body corresponds to different stakeholder perspective: customers (quality); providers (productivity); authorities (compliance); and competitors (innovation) (Maglio et al., 2008) (SSMED FC 8—measures). According to the new rule of quality management, for destination competitiveness, we have to increase the effectiveness of the meta-management activities (supply quality control, promotion and communication initiatives, and co-ordination of individual initiatives). An effective destination management plan is the only way to reach the level of organization that is required on national and international markets. In this process, such a plan coordinates all the strategic activities

that until now have had aimless proposals of organization, marketing, warranty, and standards of service quality and experience, skilled human resources, development, financing, management capacity. Routine interactions may be characterized as relationships and service system networks (SSMED FC 9—networks). In today's scenario, the allocation and distribution of resources, system collaboration advantages, the relevance of alliances, the roles and rules of networks, and cooperative strategies, all contribute to the conceptualization of the service value networks (Allee, 2000; Lusch, Vargo, & Tanniru, 2009), in which, according to the concepts of "embeddedness" (Granovetter, 1985), economic actors cannot be considered separate from other organisations or from their operating contexts. Each node that acts as a part of service business process represents a foundational partner and supports the whole system ("*nothing happens in isolation*"—Barabási, 2002) enjoying network advantages (resource-sharing, synergic interactions, common purpose, group power) for global value creation. In all cases, the performance of destinations in terms of quantity and quality of tourist flows and the performance of local firms (facility employment rates, price ranges, etc.) are linked to the presence of a clear strategic positioning expressed by local operators which are able to encourage collaboration between the different categories of operators producing tourism services. Such a collaboration creates an integrated quality and overcomes the tendency to manage independently the different services in a short-term logic (Polese, Russo, & Carrubbo, 2010).

Finally, within service sciences, ecology is characterized both by the diversity of service system entity types and their relative numbers (Maglio et al., 2008) (SSMED FC 10—Ecology). A service ecosystem is a network of spatially and temporally aligned social-economic actors that exchange resources and connect via value propositions, languages, technologies, and norms (Lusch, Vargo, & Tanniru, 2010). In this sense, destination management projects, even when activated by the government body, should always be based on a strong identification by destination operators and cannot therefore neglect to actively seek the involvement of local actors.

A Think Tank for the Interpretation of New Destination Strategies with a SSMED Perspective

After examining the main considerations on possible implications for destination management deriving from the SSMED views, it is now possible to try to model synthetic operative reflections which refer to modern tourist strategies.

Starting from the fundamental concepts of the service science, it is possible to decline practical implications for destination management and tourist operations, in terms of:

- Organization and logistics;
- Destination marketing;
- Tourism risk sharing;
- Destination global efficiency.

Through the use of a tool, such as a think tank, we may easily highlight the direct effects of science services in terms of interpretation for the competitiveness of a modern service system, which is definable as a tourist destination.

Based on a service-centered approach, we have tried to find a plausible connection between the current destination marketing and new forms of value generation process, including the organizations of a tourism system, the available resources, special access rights, and governance interactions.

Furthermore, we have also considered a link between the modern risk sharing strategies and the system approaches of reticular aggregates, including the overall efficiency of a defined destination, and the determination and measurement of results achieved and achievable through integrated management of the processes that provide tourist services. Below we wish to represent a sort of integration of scientific reflection on systems thinking and service logic linked to destination management representing possible tourism. Think tank (as shown in Figure 5) is a proposal for the systematization of the fundamental concepts of service sciences.

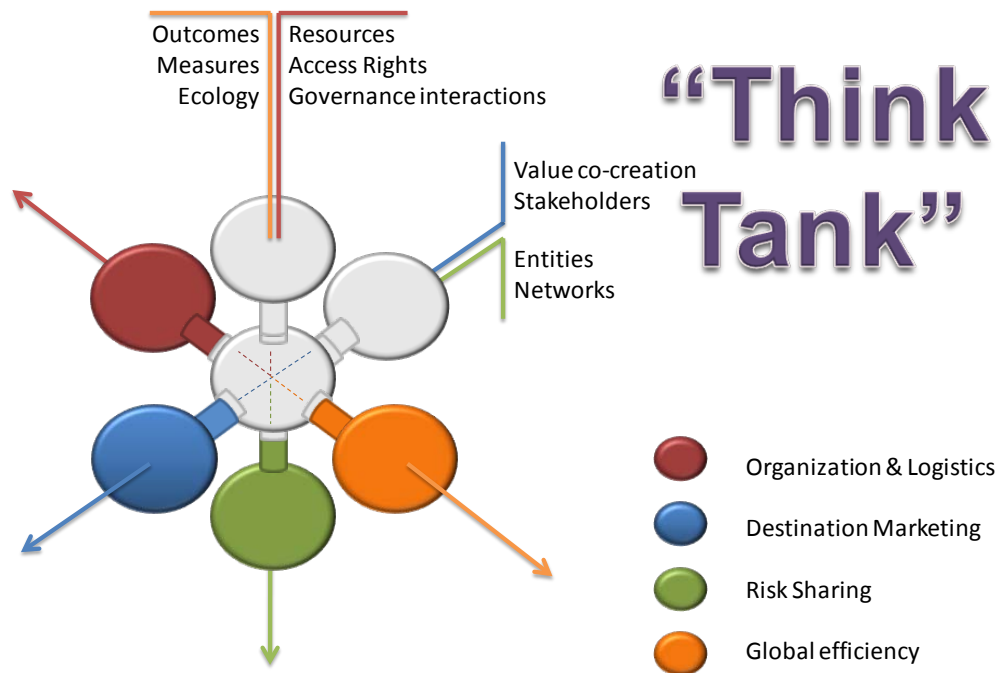


Figure 5. Tourism think tank. Source: Authors' elaboration.

New Logics for Destination Marketing

Today, the development of tourism destination follows a reticular approach to business organization, therefore, tourism trends soon are viewed through a network analysis. From another perspective, today successful business is also based on distinctive capacities and resources, allowing the use of VRIO analysis (based on value, rarity, imitability, and organization—Barney and Hesterly, 2005) to evaluate the relative levels. Therefore, SSMED principles can really lead to review the active destination mechanism for tourism “product” provision.

At this point, the process of creating value for a destination management and its related models seem to mainly refer to the logic of co-creation (SSMED FC 4—value co-creation interactions), in which local actors actively participate in the added value of broad collective activities, within a larger and more sophisticated organization (Crouch, 1996; Ritchie & Crouch, 2003), an industrial district, a social system or even a smart service system (Hammer & Spohrer, 2008b; Barile & Polese, 2009, 2010). As indicated in the Figure 6, established mechanisms of co-production, resources sharing, collaborative strategies, collective marketing efforts through the communication of a universal image identification, the political network and a service spirit (more or less consciously determined) make the actual destination—an integrator of resources, with special

features and precise long-term objectives (Kotler, Bowen, & Makens, 2009).

The possibility to create promotional activities for many attractions (historical, artistic, cultural, sports, religious, wellness, and others) inevitably triggers the interest of several third parties, more or less integrated, involved, and active in the provision of the related services (SSMED FC 7—stakeholders).

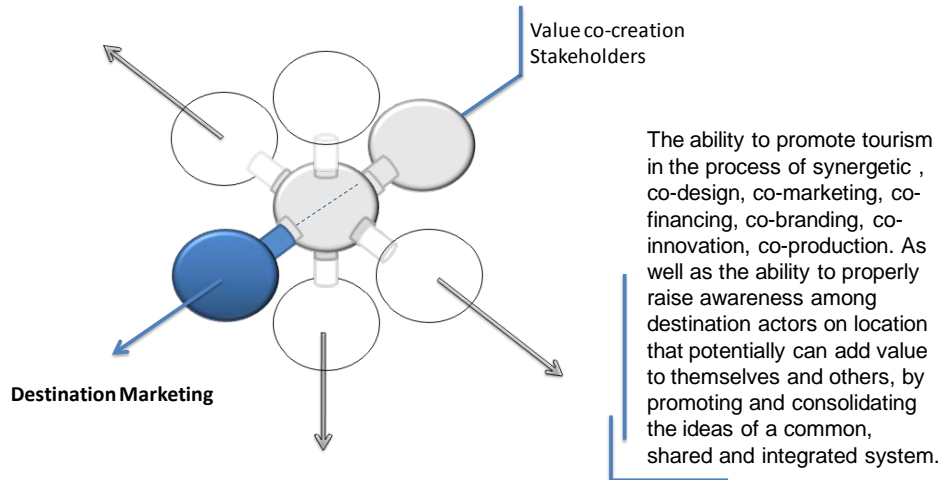


Figure 6. Destination marketing. Source: Authors' elaboration.

New Solutions for Tourism Organization and Logistics

According to the SSMED principles, it appears possible to reinterpret the mechanisms operating in a service production and the related operations that supply tourism destination products. Recalling the increasing participation within a framework offered by all of the available resources, remarkable is the shared vision of a geographically specific path of development and the importance of resource sharing (SSMED FC 1—resource). Within a system context, it is necessary to continuously promote policies, operations, and relationships in order to help achieve the correct level of competition and the strengthening of external relations (Echtner & Prasad, 2003), especially in order to support an organized structure of relationships in its self-sustenance, self-regulating, self-pacing and self-development.

In many cases, the meta-organization of a destination is represented by the local government (municipality, county, or cluster of municipalities), as it is considered closer to the territory, receptive and supportive of the different instances, while, in other cases, the action of global management is entrusted to the initiative of individuals or groups of companies capable of working horizontally across the tourism industry and promoting actions that are particularly important in terms of infrastructure, logistics, and organization. These should be able to create iterated positive effects that start virtuous circles, otherwise unimaginable or however, not easily achievable. In both cases the importance of territorial governance rises revealing its capability to seize opportunities and contingent risks, which can support the collective balance and positive interactions, which empower the system to function properly (SSMED FC 5—governance interactions), as shown in the Figure 7.

According to the new role assigned to quality destination management, it is also necessary to consider initiatives that improve coordination, communication, control, guidance, recovery, reinforcing the contribution made by groups or associations, consortia or joint ventures (SSMED FC 3—access rights).

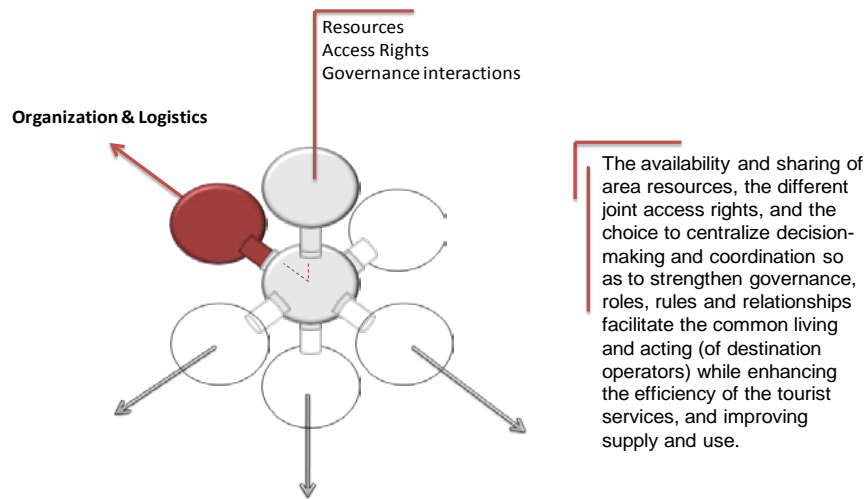


Figure 7. Tourism organization & logistics. Source: Authors' elaboration.

A New Way to Share Risks in Tourism

It has been clear for a long time now that the use of a reticular approach (SSMED FC 9—networks) promotes the work of tourism operators and allows them to work as enablers of business initiatives, geared toward compatible and convergent goals, certainly more satisfying than single and short term projects. In fact, the risk and uncertainty sharing stimulates collective action and interest that benefit the entire region (see Figure 8). Today, this widespread attitude, sometimes originated by necessity (given the unavailability or lack of certain resources), or by strategic value (regarding the obtainable market share advantages) leading to the territorial bargaining power that all organizations involved (SSMED FC 2—entities) may benefit from that.

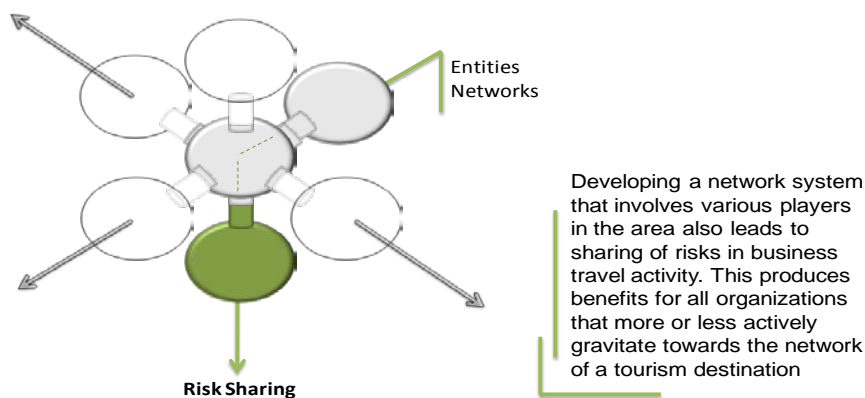


Figure 8. Risk sharing in tourism. Source: Authors' elaboration.

New Variables for Destination Global Efficiency

Often, destination performance is evaluated in terms of tourism flows, perceived product quality, employment rate in the hospitality sector, catering, transportation, and price ranges. Increasingly, we have to quantify the tangible and verifiable performance for specific regions (SSMED FC 8—measures) in order to appreciate the advantages of the location attractions, competitiveness (compared with similar places), new solutions adopted, convenience, interactivity, and, above all, varieties. The competitiveness of sustainable development is connected to the ability to cooperate, raise the service quality offered and involve every organization with a win-win logic (SSMED FC 6—outcomes) that in a nutshell can be summarized in terms of

efficiency, as seen in the figure below (see Figure 9).

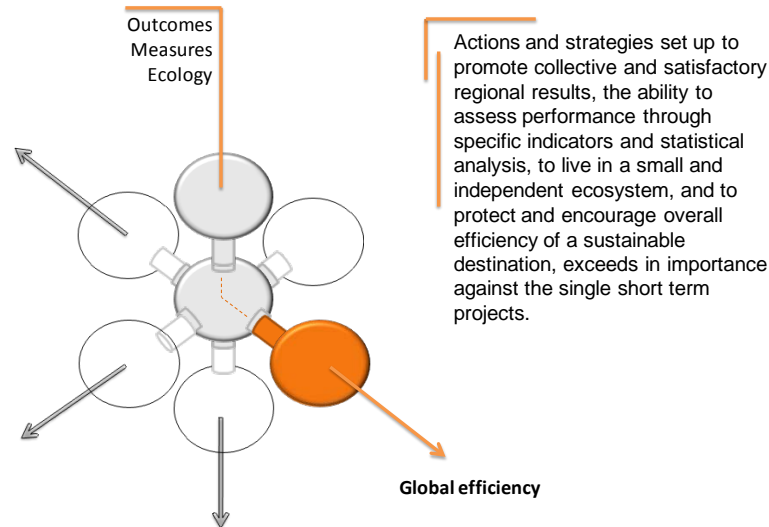


Figure 9. Destination global efficiency. Source: Authors' elaboration.

In short, the SSMED FCs seems to be able to interpret, support, facilitate, or even promote successful strategies for a tourism destination today. This is possible thanks to the collaboration among different categories of operators, the integration of services provided, the high level of quality reached in support of the interests of numerous actors who populate this particular eco-system (SSMED FC 10—ecology).

Theoretical Findings

Up to now, we have witnessed a significant rise of average indexes considered compliant to new service management models for tourism. Either intentionally or not at all, principal leverages for tourism destination development are strongly derive from service logics, and business managers at any level join a different way to relate with the other actors participants (Alter, 2008) of the destination systems. Observing the attitudes and the strategies inside specific geographical areas, we note the validity of many SSMED principles as practical interpretations of basic concepts deriving from service systems theories.

Indeed, we see that nowadays destination management involves a range of activities, such as:

(1) Analyzing and monitoring the ability of a destination:

- Developing and managing tourism effectively;
- Providing a satisfying experience for visitors;
- Managing tourism in a sustainable manner from an economic, cultural, environmental, and political standpoint.

(2) Providing standard operation for a useful benchmark.

(3) Increasing tourism awareness as an essential component for growth and social welfare.

With the design and promotion of a geographical logo or an official web-site, it is possible to achieve a promising diffusion and communication for information and promotion. If we look at the presence of access connections, we recall the relevance of the public system structure for sustainability. Comparing the strategies of ticket packages, discounts, etc. we can verify how synergic collaboration and resource sharing among network actors are useful to a destination system.

Finally, the presence of high level government actions (as network hubs) is a necessary condition to

trigger processes of sustainable development within fragmented contexts such as for tourism. In particular, this analysis suggests that some conditions for the success of top government strategies are referable to:

- the presence in a deliberate strategy to be implemented;
- the actors involved in destination government;
- the resources focused on relevant initiatives and consistent with the heritage of attractive destinations.

In short, some SSMED principles may be linked to key elements for the success of a tourist destination. We know that the relationship existing between case study data detections and the service science foundational concepts mentioned above is not strict, but in this context, it may be possible to identify several main conceptual connections. Following SSMED foundations, we stress the usefulness to:

- Create an identity for the congress industries;
- Expand the knowledge of the benefits that flow from it;
- Increase and valorize territorial influence;
- Support activities to achieve global objectives.

Final Remarks and Future Works

Service sciences can stimulate destination strategies, improve and facilitate the collaboration among different categories of operators offering tourism services. This way, it is possible to ensure integration and high quality, managing different services together. In tourism destinations, the fundamental conditions are: the achieved mechanisms of co-production; resource sharings; collaborative strategies; a universal image for communications and marketing; network policies and operations; and the service logics. All of which are consciously, or not, globally perceived or pursuing specific final goals.

In essence, tourism logics reviewed under the SSMED principles could better explain the elements fostering destination competitiveness, how to promote the overall welfare of resorts and finally delineate the real leverages for sustainable development of destination systems.

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Google & Apple's Gale of Creative Destruction

Nigel Walton, Klaus Oestreicher

University of Worcester, Worcester, United Kingdom

Creative destruction is an economic theory of innovation popularised by Austrian economist Joseph Schumpeter. In this paper, Schumpeter's theories are used to explain how radical technological innovations in information-intensive industries are influencing the erosion of traditional industry and market boundaries leading to the emergence of new competitive business models and strategies. Developments in digital technology has resulted in new technological shifts and market linkages resulting in dilemmas for the existing incumbents in traditional industries who find themselves increasingly trapped and victims of a new innovation logic. The new value innovation logic is being driven by entrepreneurs such as Page and Brin (Google) and Jobs (Apple) who are currently in the process of revolutionising the economic structures of many industries and creating new markets and organisational business models in a gale of creative destruction reminiscent of the theories developed by Sombart and Schumpeter. This creation of new market models and their impact on established industries are explained further in the value chain evolution theory and its corollary sustaining innovation classification-scheme. These theories reinforce the view that innovators, thinking in new and radical ways, provide sustainable new market developments and earn above the average revenues compared to incumbents, whose profit pools have eroded. This paper researches and analyses the impact that Google and Apple are having upon a broad range of information-intensive industries and the strategic options of the incumbent firms in the respective traditional industries in response to this radical change. Its purpose is to provide explanations of why and how radical innovators are able to redefine the rules of the market leading to economic growth and development.

Keywords: creative destruction, prosumer, monetize, incumbents, institutionalization

Introduction

Creative destruction is an economic theory of innovation and progress introduced by German sociologist Sombart (2006) and developed and popularised by the Austrian economist Schumpeter. Schumpeter (1975) used the term to describe the process of transformation that accompanies radical innovation, and according to Schumpeter's vision, innovative market entry by entrepreneurs was the driving force of sustained long-term economic growth. In Schumpeter's view, this also destroyed the value of established companies that enjoyed some degree of monopoly power.

Three entrepreneurs, Larry Page and Sergey Brin (the co-founders of Google) and Steve Jobs (co-founder and CEO of Apple) are currently in the process of revolutionising the economic structures of many industries and creating new markets and organisational business models in a gale of creative destruction reminiscent of

Nigel Walton, MBA, Dip. M., BA (Hons), Worcester Business School, University of Worcester.

Klaus Oestreicher, Ph.D., Worcester Business school, University of Worcester.

Correspondence concerning this article should be addressed to Nigel Walton, University of Worcester, City Campus, Castle St., Worcester, WR1 3AS, UK. E-mail: n.walton@worc.ac.uk.

the theories developed by Sombart and Schumpeter.

The development of radical innovations such as digital technology, the Internet, the search engine and the widespread diffusion of web-enabled consumer electronics devices (including PCs, laptops, mobile phones, and gaming consoles) has resulted in the erosion of traditional industry and market boundaries and the emergence of new competitive business models and strategies.

It is the purpose of this paper to analyse the impact that Google and Apple are having upon a broad range of information intensive industries and the strategic options of the incumbent firms in these traditional industries in response to such radical change.

The Changing Environment and Source of Creative Destruction

During the last 30 years, the business world has undergone enormous social, technological, economic, and political change resulting in globalisation (see Figure 2). In 1981, the United States of America officially became the world's first service economy followed by other leading G7 western countries which lost their competitive advantage—in many areas of manufacturing—to the low wage emerging economies. At the same time, the personal computer industry was starting to grow very rapidly and this was followed by the Internet, the introduction of the worldwide web (Tim Burner's Lee) and digital technology (Fahey & Narayanan, 1986). Drucker (1988) heralded this as a new era that he named the "information age" in which modern employees had become knowledge workers. Knowledge and information had taken over from capital as the key resource and source of competitive advantage.

This change of position is also emphasized by Kotler, Jain, and Maesincee (2002), who argued that the driving factor of the so-called new economy was the customer which was in contrast to the old economy still believing in the dominance of capital (see Figure 1).

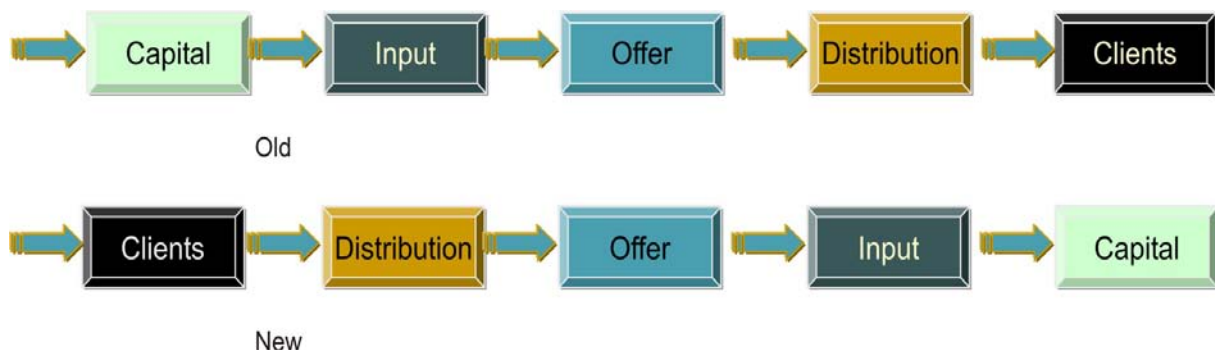


Figure 1. The shift from consumer to "prosumer" model (Kotler et al., 2002).

A good example of this transformation was instigated by Dell who was the first company to revolutionise how customers bought computers (Kotler et al., 2002). Customisation was facilitated by the Internet in the form of which put the customer at the centre of the organisational activities. One result of this shift was the emergence of the prosumer concept, which reduced the ways in which established firms could follow a business model, in which a customer has to buy what they offer. The new business models follow the expectations of customers in nearly every detail and create the products that the customers want. The second consequence is that the customer has changed from being a marketing objective to its present position of being a market power (Kotler et al., 2002).

Much of Google and Apple's success may be explained in this way since it is suggested that both

companies understand that in a cause-and-effect relationship, capital is no longer the cause but the effect of a consumer-centred business model. Microsoft has adopted a different approach and has transformed backwards. Through institutionalisation, Microsoft has placed capital back at the front of the chain (see Figure 1) based on the “old” model. This may help to explain why Microsoft has tended to buy a market share today (through acquisitions) instead of creating it.

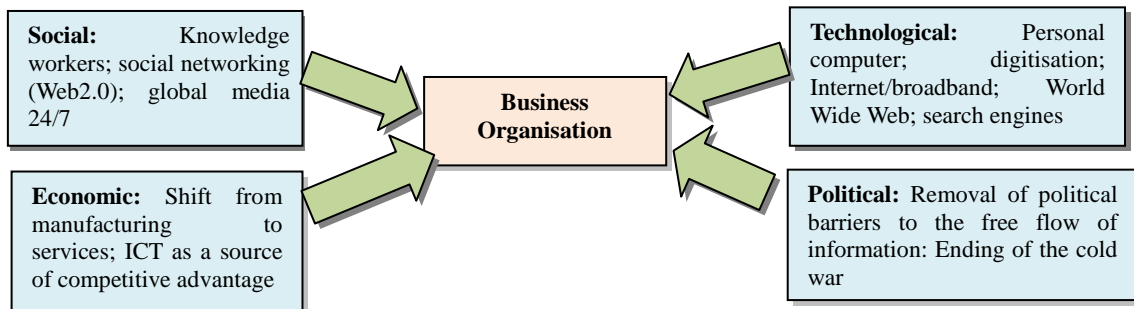


Figure 2. STEP Model (Fahey & Narayanan, 1988).

This proliferation of new services meant that the transformation processes of organisations were also changing. In the former capitalist manufacturing environment, manufacturing firms would input raw materials, process them and output a finished product. However, in the post-capitalist information age, one of the primary processing activities of organisations is now information and customers not simply materials (Slack et al., 2007).

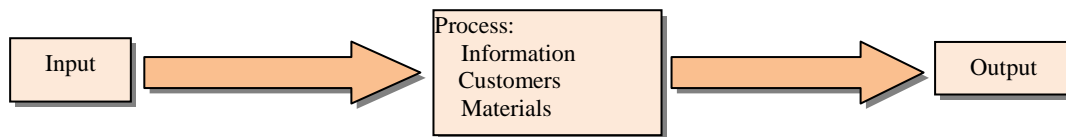


Figure 3. Transformation process model (Slack et al., 2007).

As the move towards knowledge/information-based service, industries accelerated (supported by digital technology, high personal computer ownership, and broadband take-up) two important developments occurred. First, the emergence of Napster (1999-2001) and the concept of file sharing and the commercialisation of search-engine companies in the 1990s—culminating in the launch of Google in 1998.

The model above (as shows in Figure 3) is a line of sequential order, which is known as ITO-strategy (Input-Throughput-Output). The importance of this conceptualisation is that organisational activities follow a strategic direction, which is superior to tactical manoeuvres and operational activism. Google is understood to have followed this ITO-strategy (whether this was implicit or explicit is of secondary importance) since this has resulted in a fundamentally new way of creating sustainable customer satisfaction. In an understanding of Abernathy, Clark, and Kantrow's (1983, 1984) taxonomy of innovation, presented in the transilience map, their search engine was initially a revolutionary innovation but had, by its consumer-focused orientation, the power to transform itself to the highest degree of architectural innovation. Innovation forces, technology, and market linkages are therefore fully addressed (Abernathy et al., 1983, 1984).

Steve Jobs (co-founder of Apple) was quick to see the potential to monetise what was an illegal service being provided by Napster which resulted in a stream of new blockbuster products including iTunes, iPod, iPhone, and iPad.

Larry Page and Sergey Brin's innovation was incremental in that Google's search engine technology was at least 20% better than their competitors in that it was faster and produced better quality results (van Veelen, 2003). However, it was in the area of marketing innovation where Google's competitive advantage would be achieved. The decision to provide free search and use advertising revenues as their primary income stream was to have a dramatic impact on Google's future development path and the fortunes of what would later appear to be adjacent industries. Google's strategy of generating income from advertising relied on their ability to attract a large amount of "traffic" into their website. The strategy that Google has adopted to achieve this goal is what has been the major cause for concern to companies in what would traditionally have been considered to be unrelated industries and markets. These include books, software, browsers, videos, news and sport content and recently travel.

Finally, Napster demonstration that there was a market for downloadable music, and other forms of media content was now being exploited and monetised by Apple further consolidating the company's competitive advantage. In this context, light should also be shed in the fact that the real success was created by the iPad and by the revolutionary concept of combining (again) technology—the iPad—with market linkages—iTunes (Oestreicher, 2011).

The Impact of Google & Apple's Strategies on Other Industries and Markets

Google currently provides a broad range of free products from its search engine website including books, software, browsers, and videos. This is having an impact on a broad range of industries including publishing, music, computing, and mobile phones. Although Apple monetises the downloadable concept invented by Shawn Fanning of Napster by charging a fee for its product/service, this is seriously impacting upon the revenue-generating potential and profitability of the music industry. The result for this industry is that it finds itself in a fast declining environment, which threatens its existence in its present form and structure. Moreover, in contrast to Google and Apple's business models, a major reason is seen in the difference between an institution-centred and a consumer-centred business model (Oestreicher, Kuzma, & Walton, 2011).

In fact, both Google and Apple and a broad range of technology companies (e.g., eBay, Amazon, Facebook, and YouTube) have the potential to disrupt and even destroy the competitive dynamics of a broad range of industries. Any industry/market where customers require an information/knowledge based on products or service which can be delivered using a virtual platform are potentially under threat. This argument is supported by Moore's (2006) typology, in which platform innovation plays an important role in the modern, innovation-driven economy.

When Schumpeter (1975) elaborated and popularised Sombart's original theories, he identified five types of innovation, namely:

- new products or service;
- new methods of production (process innovation);
- developing new markets;
- identifying new sources of supply;
- new forms of organisation.

If we take the Google business model as an example, Google is now capable of achieving all five types of innovation identified by Schumpeter: It is providing new products and services in digital formats, and it is

changing business processes by providing a downloadable solution based on cloud computing concepts; it is developing new markets; it has become a new source of supply and this is resulting in new forms of organisation i.e., the virtual company not bricks and mortar. Returning to Abernathy et al.'s (1983, 1984) transilience map, this form of innovation represents architectural innovation again.

Most companies can usually respond to innovation in the form of new products and services. However, when the innovation also destroys core resources and capabilities, traditional industry boundaries and even an entire business model then an effective strategic response becomes extremely difficult.

The opening up of new markets... illustrate the process of industrial mutation that incessantly revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one... The process must be seen in its role in the perennial gale of creative destruction; it cannot be understood on the hypothesis that there is a perennial lull. (Schumpeter, 1975, p. 82)

Joseph Schumpeter, the Process of Creative Destruction, 1942

The next stage of our analysis is to clarify what we mean by the term "industry". Economists define industry as a group of firms that supplies a market (Grant, 2008). This means that a close correspondence exists between markets and industries. However, this raises the question of what is the difference between analysing industry structure and analysing market structure. The main difference is that industry analysis is concerned with industry profitability (Porter's five forces model, 1985). This looks at industry profitability being determined by competition in two markets: product markets and input markets.

A market's boundaries are defined by substitutability. There are two dimensions to this substitutability on both the demand-side and the supply-side. Napster demonstrated that on the demand-side consumers were more than happy to substitute paid hard disc content for free downloadable music (file sharing). However, the music industry did not respond to this threat by substituting their existing product with a revenue earning downloadable alternative. In other words, by the institutional understanding of business, the new P2P-driven ways of consumption contradicted the established business model of this industry, since it threatens control and collaboration with the distribution chain and the autonomy of this industry, and it is against all the established resources, processes, and values that the music industry owns (Oestreicher, 2011; Oestreicher et al., 2011; Christensen, Anthony, & Roth, 2004). It took the vision of an entrepreneur (Steve Jobs) from a seemingly unrelated industry (computers) to see the market potential for monetising the downloadable concept.

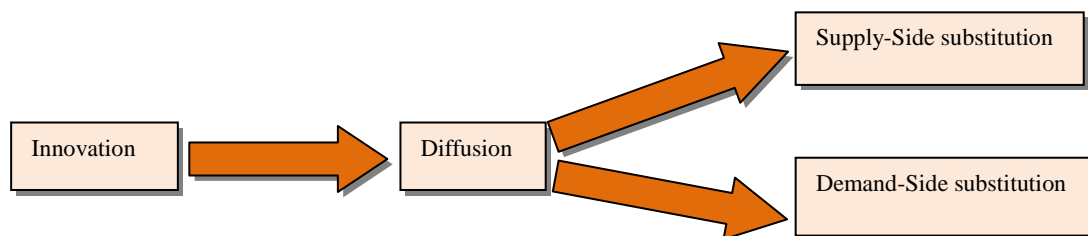


Figure 4. Innovation process model (Grant, 2008).

In the case of Google, the move towards substitution has also been very significant. Consumers have demonstrated high levels of demand-side substitution in electronic books, mobile phone operating systems software, computer browsers and software, and videos. On the supply-side, book publishers, software vendors, telecommunications companies, and film studios, have not been in a position to provide a substitute product because of the free nature of Google's unique selling proposition (USP). This has resulted in these industries

becoming unattractive as well as threatening the very existence of many firms. The disintermediation of product/service delivery has also had a major impact on the structures of these industries and the recent decline in the fortunes of HMV and Waterstones bears testimony to this.

Not only are the incumbents of these traditional industries being threatened by the new product/services and processes offered by downloadable suppliers, but they have not been able to adopt the paradigm and positioning strategies of the new product/service providers as a younger generation of consumers opt for cloud-based products and services from high profile global brands such as Google and Apple (see Figure 5).

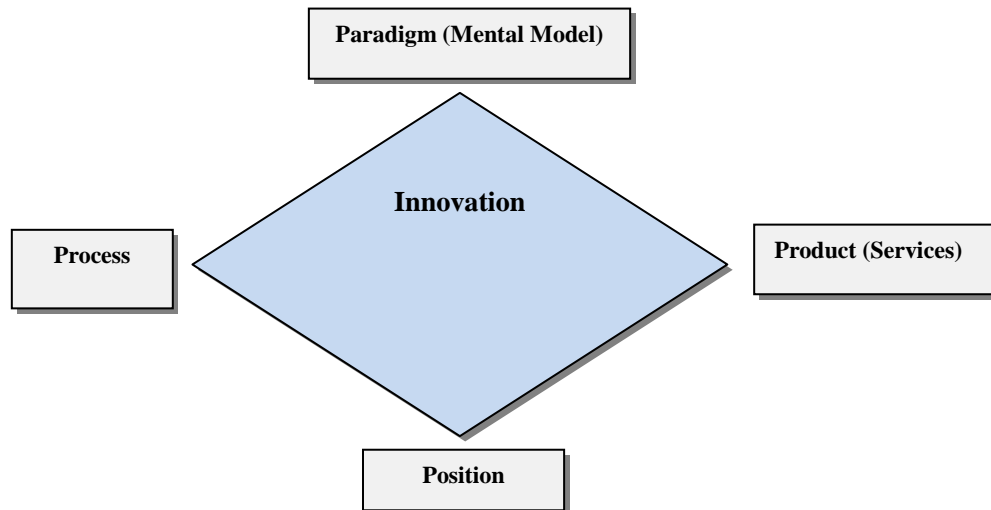


Figure 5. The innovation diamond/4Ps of innovation space (Tidd & Bessant, 2009).

In addition, the delineation of market and industry boundaries based on physical geography is also being destroyed due to the worldwide web and the diffusion of broadband and web-enabled mobile consumer electronic devices on a global scale. This process is permanently accelerated by facilitating technologies following the concept of convergent technologies of which smartphones are just one device. It should also not be forgotten that the new "Internet2" will revolutionise the whole industrial structures in ways which cannot be predicted. For example, its petabyte-based power will allow data transfers of GB in seconds.

Schumpeter's theories are endorsed by Costas and Geroski (2004) who categorised innovation in two dimensions: (1) changes in consumer buying behavior; and (2) the effects on the competencies of established incumbent organizations. Therefore, both Schumpeter's (1942) and Costas and Geroski's (2004) models illustrate that radical innovation has a high impact upon existing industries/markets and consumer habits (see Figure 6).

Aboulnasr, Narasimhan, Blair, and Chandy (2008) also argued that radical innovations (in this case digitisation) were often the agents of creative destruction and threaten to destroy existing market positions but often yield new marketing opportunities (electronic downloadable alternatives). Therefore radical technological innovations create new market opportunities whilst simultaneously destroying or transforming demand in many existing marketplaces. The key process of creative destruction is the re-combination of existing assets and resources in order to develop and commercialise innovations. Subsequently, Christensen (1997) and Hill and Rothaemel (2003) referred to this as disruptive technological innovation because of its destructive effects on existing markets.

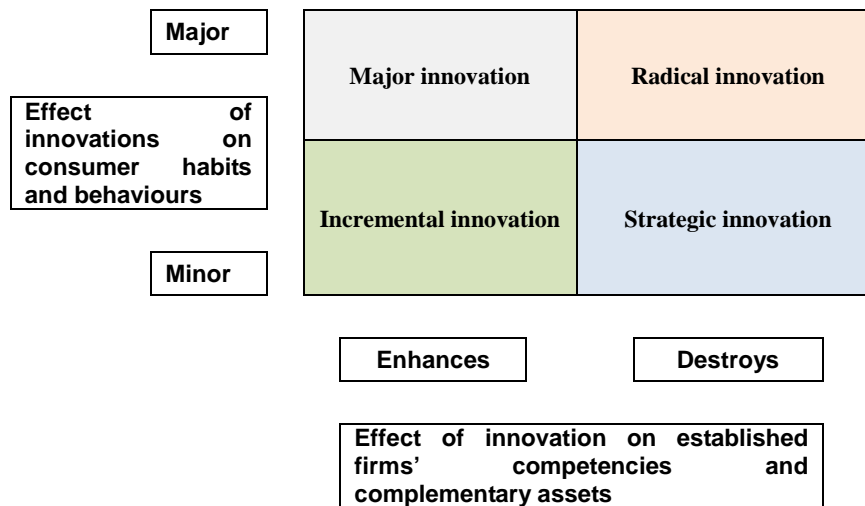


Figure 6. Costas and Geroski's innovation model (2004).

Hill and Rothaemel (2003) found that a persistent theme within incumbent enterprises was that they have great difficulty in innovating radically new technologies and thus went into decline whilst simultaneously new entrants (in this case from seemingly unrelated industries) rise to market dominance by generating (or exploiting) radical new technology. According to Gilbert and Neuberger (1984), incumbent organisations have a disincentive to produce radical innovations compared with new entrants for fear of destroying or altering existing industries (cannibalisation) to which their products have traditionally enjoyed success. Paradoxically, mechanisms that help ensure organisational survival in stable environments contribute to inertia and organisational decline when confronted with radical change (Hill & Rothaemel, 2003). Leonard-Barton's (1992) qualitative study echoes Hill's suggestions and finds that the core competencies of an organisation can become core "rigidities" that can limit an organisation's ability to adapt to a changed environment.

This argument is supported by Redding (2002), who saw a strong connection and interaction between innovation and path-dependency, which leads in his opinion, to a lock-in by technology. The path-dependent orientation on resources, processes, and values creates an organizational context, which makes it difficult for organisations to think in new and different ways, especially when an environment becomes increasingly hostile by the emergence of new technologies and/or business models. Oestreicher (2011) has extended this technological lock-in and connected it to organisational core activities, especially when the prior environment allowed a high level of control (compared with Microsoft's position). The focus on maintaining the status quo can become a high burden and prevent organisations from renewal, which adapts them to the changing environment and creates high risks of obsolescence. Oestreicher (2011) argued that a close relationship between institutionalization (expressed by control and a status quo orientation) and the resulting resource allocation cannot be excluded. This is not only aligning this context to the institutional school of thought, but is also challenging the resource-based view. Finally, it also contradicts the determinants which Johnson, Scholes, and Whittington (2011) saw as important parameters for organisational success. Each organisation serves a market purpose (Baker, 2007) but only when the market accepts its offers.

Another explanation linked to incumbent inflexibility is embedded within the organisation's value network. Christensen (1997) attributed this to an organisation paying too much attention to satisfying the demands of and cooperating with various constituents of the value network (suppliers, customers, product providers etc.), which

may have served them well in the past. However, when faced with disruptive innovative change, the commitment to this network may produce further inflexibility. Pfeffer and Salancik (1978) attributed this to resource dependence theory, which suggests that an organisation's strategies are constrained by external forces that are the critical resources to an organisation (customers, suppliers etc.). Subsequently, an organisation's internal priorities are to maximise quality through existing resources. When a disruptive technology invades an existing market incumbent, firms struggle to adapt, due to rigidity and inertia created by the value network around the incumbents legacy technology. Moreover, the impact of digitization on the reconfiguration of the value network such as the disintermediation of the value chain has been most noticeable in recent years. Leon-Sceti complains that the music industry today is much closer to an environment in which it can extract one Euro out of a million consumers rather than 10 Euros out of a thousand (Oestreicher, 2011).

The Competitive Response

The provision of free products and services by Google and more convenient methods of supply by Apple are a serious competitive threat to many traditional firms and industries which have now become unattractive. The strategic options that open to many of these firms are limited to harvesting strategies, moving into higher value niche' segments, exiting in the respective industry or market or seeking legal redress where possible (Harrigan, 1988). None of these strategies are likely to provide a sustainable solution to the problems of declining market share and profits and ultimately survival. According to Peter (2001), "companies cannot shrink their way to greatness".

Leadership	Harvest or Niche'
Harvest of Niche'	Quick Sale/Liquidation

Figure 7. End game strategies (Harrigan, 1988).

Adner and Snow (2010) also highlighted two potential macro-level strategic reactions to the introduction of a disruptive technology: (1) Racing strategies, by which an organisation attempts to increase the performance of their existing technologies/business models in order to reduce the disparity created by diffusion of the new technology; and (2) Retreat strategies, by which organisations accommodate the entry of a new innovation by repositioning their existing products within new markets. Howell (2002) presented a much broader categorisation, suggesting four strategic decision variables that an organisation can adopt when facing disruptive innovation.

- Initially exit from the old market, which is the most drastic form of action. However, in some instances this is the most appropriate, if the new technology has caused significant shrinking of the existing market. Otherwise this strategy may indicate disinterest (or incapability) of the firm to face competition under new market conditions (Schiavone, Simone, & Quintano, 2011). This strategy also implies that an organisation must seek new markets to which can invest its resources.

- The second option is for an organisation to adopt the new technology. Howell (2002) suggested firms should reorganise their portfolios by developing new products that incorporate the new technologies and the new paradigm. Schiavone et al. (2011) suggested that this method means that the changing organisation actually contributes to destruction of the former market equilibrium. Afuah and Utterback (1994) suggested this strategy was difficult to implement, even for larger organisations with large resources.

- The sailing ship effect is the acceleration of innovation in the old technology in response to the threat from new technology (Howell, 2002). This occurs when organisations attempt to preserve their own technological competencies from decline in the face of disruptive technologies. They may do so by repositioning their products within niche markets. Snow and Skaggs (2004) provided three possible explanations for this: initially old technologies are improved to avoid being replaced by the new ones; secondly, incumbent technologies efficiency can improve without technological change or replacement; and thirdly, the substituting technology can generate notoriety for the old technology from different uses rather than from the new technological innovation.

- Aboulnasr et al. (2008) also carried out research into organisational responses to innovation which emphasised the need to examine markets dynamically and not just consider how they are today but how they could be tomorrow. This is based upon how radical innovations can cause previously small markets to explode in size.

In order to evaluate the theoretical options explained above, it is important to look in some detail at the markets and companies that are directly affected by the strategies of Google and Apple. First, we will look at Google's impact. Google's business model is based on attracting large amounts of traffic via its search engine browser in order to maximise advertising revenues which is its primary source of income. In order to do this, it has developed a broad range of mainly free products ranging from electronic books, software, browsers, media content and more recently, holiday and airline bookings.

Google were one of the pioneers when they began building a digital repository of free downloadable books on their website over eight years ago. This accelerated a trend towards the digital provision of books with Amazon providing electronic copies and e-readers such as the Kindle. According to Sachs (2011), people are not reading less than previously, but they are now buying fewer traditional hardback copies. Figures from the Association of American Publishers (AAP) reveal the following compound growth rate of e-books in the 2004-2010:

- 2004: +169.5%;
- 2005: +53.1%;
- 2006: +44.8%;
- 2007: +24.1%;
- 2008: +23.6%;
- 2009: +68.4%;
- 2010: +127.6%.

Figures released in early April 2011 revealed that eBooks have become the single bestselling category in American publishing for the first time. The report from the Association of American Publishers also said that eBook sales in February were \$90.3 million, making digital book the largest single format in the U.S. for the first time. America's eBooks enjoyed a 202.3 percent growth in sales in February (2011) compared with the same time last year.

E-retailer giant Amazon had already announced in January that its sales of Kindle e-books were outpacing paperback sales. For every 100 paperbacks sold in 2010, Amazon says it sold 115 Kindle e-books. Last summer, Amazon announced that e-book sales had surpassed those of hard covers.

The bad news for publishers is that although e-book sales have increased by 169.4% since the beginning of 2011, overall categories of print trade books showed a decline of 24.8%, and the decline in print sales to \$215.3

million is not compensated for by the increase in e-book sales. Earlier this year, several major publishers confirmed that e-books had increased to about 10 percent of their total sales. Some publishing experts now predict that within the next two to three years e-book sales will comprise up to 25 percent of all book sales.

This growth of e-book sales has impacted on both the book publishers and the intermediaries. Many of the large publishing houses in the USA have been forced to downsize in response to the declining sales whilst book resellers having to adopt niche' marketing strategies focusing on specialist publications and authors. Even the forte' of the traditional book reseller, book signing, has now been usurped with the arrival of a smart phone app which allows a book author to sign an e-reader remotely.

Google's decision to provide web browsers and open source software technologies have also impacted on the business models of companies in other markets. The high adoption of Google's Android operating system in mobile phones has accelerated the growth of smart phone ownership. According to Gartner research (McDermott, 2011, p. 16) "... by the end of next year, Android will account for almost half of the world's smart phone market". This has had a significant impact on Nokia, the market leader of mobile phones which has been forced to form an alliance with Microsoft to access new operating systems technology and as smart phones overtake conventional handsets which seriously undermines Nokia's future competitiveness. The availability of open source software via cloud computing and the availability of Google's Chrome browser has forced market leader Microsoft into a strategic alliance with Yahoo, so as to gain a market presence in the Cloud computing market, because Google is undermining its traditional business model based on bundling pre-installed software with existing hardware. Google have therefore accelerated the development of cloud computing as a new market segment with the potential for huge growth (Aboulnasr, 2008).

Google's most recent diversification involves the acquisition of ITA software for \$700 million. This will place Google in a leading position in the travel search and online bookings market. Any disintermediation that has not already occurred in terms of the travel agency market is therefore likely to be rapidly accelerated.

Apple has also had a major impact on the business models of markets outside their original industry. Apple's primary impact has been on the music/entertainment industry due to the introduction of iPod, iTunes, iPhone, and iPad range of products. Steve Jobs' decision to monetise Fawn Shanning's (Napster) file sharing technology has decimated the sales volumes of both CDs/DVDs and the Blue-Ray DVD player. Video sales have also followed a similar trajectory.

A recent In-Stat report (2010) revealed that the importance of DVDs to the entertainment industry will decline significantly over the next few years. Physical disc sales, which include both DVDs and Blu-ray discs, are expected to decline by \$4.6 billion between 2009 and 2014. In-Stat said that over that period, DVD sales were expected to plummet. At the same time, Blu-ray sales were expected to climb but not enough to make up for the decline in DVDs. In place of physical discs, streaming content and digital downloads were quickly gaining steam. Research by Oestreicher (2011) has produced evidence of some significant developments which are supported by a number of interviews in the industry. For example:

- The new Blu-ray disc format will be the last physical format of the home entertainment industry;
- It will only achieve 40% of the total DVD market;
- The remaining life cycle for physical products will be a maximum of three to five years;
- Most customers are satisfied with the performance of standard DVD and even the new 3-D format is expected to change little;
- The already fully developed new format of Holographic Versatile Discs (HVD), with a capacity of one

terabyte, are unlikely to achieve more than a niche position in data security and will only be used by customers who do not trust cloud computing;

- Finally the present industry structure of those manufacturers of the physical product of optical discs is expected to become obsolete.

In-Stat said that the video-download and streaming revenue was expected to grow from the \$2.3 billion it generates now to \$6.3 billion “within five years”.

“Video disc rentals will continue their significant decline”, In-Stat principal analyst said that.

Keith Nissen said in a statement that “The convenience and utility of the online offerings are simply too compelling”.

In-Stat also examined the impact that streaming could have on the television business (both Apple and Google's new areas of market development). According to the research firm, download revenue of U.S. television programming is expected to “more than triple” between 2010 and 2014. Moreover, the company said that video-on-demand subscription revenue could hit \$3.5 billion by 2014.

A summary of the range of markets and companies that have been (or soon will be) affected by Google and Apple's creative destruction is quite extensive and includes:

- Book publishers and resellers;
- Music companies (labels) and resellers;
- DVD hardware manufacturer's video rental chains;
- Computer software and hardware providers;
- Mobile phone software and hardware providers;
- Airlines and travel agents.

This excludes other developments by both companies including TV as well as mobile phone applications which will have significant implications for other markets.

The ability of incumbents in traditional markets to respond to these competitive threats is extremely limited. Both Apple and Google were early adopters (see Figure 8, diffusion of innovation model) of the new digital technologies and were therefore able to gain a significant lead—time advantage in building high levels of customer loyalty amongst a huge customer base. In terms of Porter's five forces framework, Google and Apple have built up high barriers to entry, so competitors are not able to retaliate due to the high capital costs of the technology (during the early years of development) and the absence of appropriate resources and competencies. Only Microsoft with its huge cash surplus has been able to mount a defence in the computer software and mobile phone markets but these strategies lack significant impact. Google and Apple have also entered these markets as substitutes using shielding strategies (Hamel & Prahalad, 1993) which the industry incumbents failed comprehend until it was too late. Once access to these markets had been established, the rules of the game were changed and traditional business models were soon replaced with new positioning strategies and paradigms as illustrated in Tidd and Bessant's (2008) 4Ps of innovation space (see Figure 5). Google and Apple were able to innovate on all four dimensions of the model including new products/services that were delivered using new processes.

If we consider Harrigan's (1988) end game strategies model, the prospects of incumbents taking a leadership position are unlikely due to the inertia displayed by the organisations concerned. The weaker companies may eventually seek a quick sale or liquidation. Blockbuster and Borders have already followed this

route whilst HMV appears to be pursuing a Harvester/Niche' strategy and is undertaking a store closure programme, but it is also diversifying away from CDs and DVDs into home electrical goods as part of its repositioning strategy (Wembridge & Barrett, p. 17). This also complies with Adner and Snow's (2010) retreat strategy. However, there does not appear to be any evidence of Adner and Snow's racing strategies.

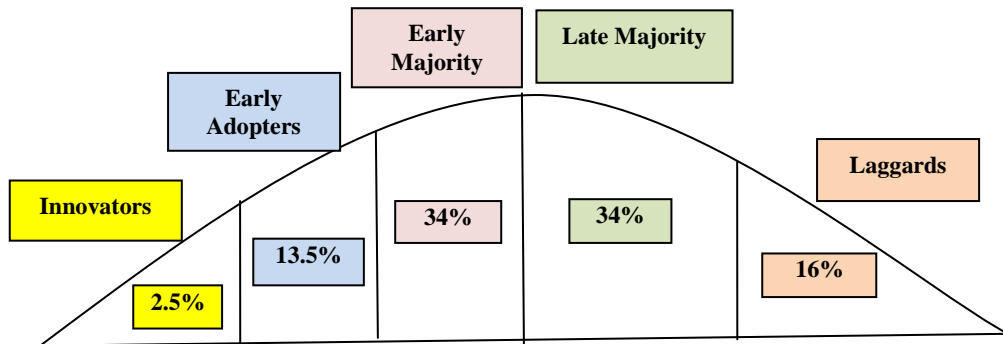


Figure 8. Diffusion of innovation model (Rogers, 1983).

If we look at Howell's (2002) framework, a sailing ship strategy would appear to be commonplace in terms of the music companies and book publishers. Exit strategies, although not deliberately planned (Mintzberg & Waters, 1985) appear to be emerging in response to rapid declines in market share in some markets, i.e., travel agents. However, Microsoft would appear to be pursuing Howell's (2002) strategy of adopting new technologies through the acquisition and rapid organic growth of new businesses. For example, Microsoft's heavy investment in the Yahoo alliance to create a greater search engine presence to combat the threat of downloadable software via the Internet is a good example of this. Microsoft has also moved aggressively into cloud computing with a widespread corporate business-to-business programme to sell the open source concept to new customers. Its recent acquisition of Skype has also been executed because of the need to build an increasing Internet presence.

Howells's (2002) technology adoption strategy would also appear to be relevant to the mobile phone and computer market where incumbents are copying new technologies and forming alliances to access new competencies, resources, and know-how.

As Google and Apple grow in terms of market power, this raises the question of competitor retaliation through the lobbying of government to implement some form of anti-trust legislation. However, since the Internet is not owned by any single organisation and cannot be regulated, the prospects of such actions are unlikely. So what would normally have been a source of retaliation by incumbent firms cannot be deployed due to the virtual nature of the competitive threat. Although the Internet began as an egalitarian platform for the sharing of information, it would appear that an oligopoly of powerful Internet firms and Internet-enabled firms such as Apple are now becoming established in cyberspace (Google, eBay, Amazon, Facebook, YouTube, Yahoo/Microsoft MSN etc.) who are now capable of entering information/knowledge-based industries and appropriating high economic rents for their own businesses at the expense of traditional incumbents whilst simultaneously changing the competitive dynamics and structures of these industries. By leveraging their existing technologies and customers, these corporations have already shown how they can reshape the traditional bricks-and-mortar landscape.

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Static and Dynamic Liquidity of Polish Public Companies^{*}

Artur Stefański

Poznan School of Banking, Poznan, Poland

Three theses were settled in the paper: the first thesis assumes that there exists a weak positive correlation between static and dynamic ratios of financial liquidity; the second thesis which complements the first one assumes that this correlation is stronger in the group of enterprises classified than the industry sector; and the third one—financial liquidity during the financial crisis would deteriorate. The analysis scope covers the period between 2005 and 2009, which is based on data collected from public companies listed on the Warsaw Stock Exchange on December 31, 2010. Financial data come from 128 business entities (55 from the industry sector, and 73 from trade and services sector). To verify the correlation between static and liquidity ratios, linear correlation between static and dynamic ratios was settled for the entire group and separate sectors. It can be observed a low level of correlation between static and dynamic liquidity ratios. The first thesis can be confirmed only when modified operating cash flows are used, but there are stronger dependences between variables in the industry sector than in trade and services, and generally liquidity ratios were not weaker during the financial crisis times.

Keywords: liquidity, cash flow, financial analysis

Introduction

While defining the basic goals of an enterprise, it is assumed most frequently that in a long-term perspective its activities are dominated by the maximization of the company's market value for its owners, whereas in a short-term perspective, the company aims at maintaining financial liquidity, i.e., the ability to meet its current liabilities on time.

The company's liquidity may be measured and estimated by considering:

- current assets and liabilities in a given moment—static measure of financial liquidity (e.g., current and quick ratios of financial liquidity);
- money flows generated by the company during the period under analysis—dynamic measure of financial liquidity (e.g., productivity ratios or cash sufficiency ratios).

The main objective of the paper herein is to analyze the correlation between static and dynamic liquidity ratios. Earlier research made in the area of such correlations prove that operating cash flows are related not to the current ratio, but rather to the quick ratio of liquidity, whereas simplified cash flows, calculated according to the formula: net financial result plus depreciation, and modified by the change of net working capital, are highly correlated with the ratios of both current and quick liquidity (Wertheim & Robinson, 1993). Further analysis indicate that the generalization of any conclusions must be done carefully since the intensity of

^{*} The author thanks Centrum Rozwoju Szkół Wyższych TEB Akademia Sp. z o.o., Poznań, Poland.

Artur Stefański, Ph.D. in Economics, Banking and Financial Market, Poznan School of Banking.

Correspondence concerning this article should be addressed to Artur Stefański, al. Niepodległości 2, 61-874 Poznań, Poland.
E-mail: artur.stefanski@wsb.poznan.pl.

correlation among the parameters may differ significantly depending on the line of business (Lancaster, Stevens, & Jeanings, 1999). It is worth emphasizing that in both studies the correlation analysis was provided by changing the values of financial indices on the one hand, and on the other hand, changing the amounts of financial entries. The correlation analysis of static and dynamic ratios for the Polish economy (for construction and trade sectors) was carried out by Maślanka (2008). It can be inferred from his research that between 1998-2004, the correlation between the ratios of current and quick liquidity, chosen productivity ratios and cash sufficiency ratios is positive in the construction sector (even though, there were observed some cases of negative correlation in the analyzed period within the subsequent years), instead of weak intensity (Maślanka, 2008). The research herein encompasses another group of business entities, including more recent financial data than the one quoted in the studies mentioned earlier, and is based on other financial ratios, sometimes slightly modified, than in earlier analysis. However, considering the results of earlier research, a hypothesis was made that there exist a weak positive correlation between static and dynamic indices used to measure financial liquidity of enterprises (H1). The thesis which complements this one assumes that correlation is stronger in the group of enterprises classified than the industry macro sector (H2).

There are a lot of factors, both external and internal, which may influence financial liquidity, therefore, it may be expected that in the period of worsening macroeconomic situation, the financial liquidity of particular enterprises may deteriorate as well. The analysis carried out for this research encompasses the period between 2004 and 2009, which including the financial crisis as well. In this case, a hypothesis was assumed that financial liquidity measured both by static and dynamic indices in the financial crisis between 2008-2009 would deteriorate (H3).

The Analysis of Financial Liquidity of the Business Entities between 2005 and 2009 Listed on the Warsaw Stock Exchange on December 31, 2010

Sample Selection

The analysis was made on the basis of financial results, within 2005-2009, of the public companies listed on the Warsaw Stock Exchange on December 31, 2010.

Only public limited companies were created according to the Polish commercial code. On December 31, 2010, the number of such entities equaled 301.

The data were used in the cross-section analysis. The companies listed on the Warsaw Stock Exchange may be classified into the following macro sectors: industry, trade and services as well as finances. The analysis included the companies belonging to the two of the above mentioned macro sectors. The finance macro sector was excluded.

The three most numerous sectors were selected in each macro sector. In the industry macro sector, nine sectors were occupied by the following industries: electromechanical, food, and metal. On the whole, there were 119 companies listed in the industry macro sector, whereas in the sectors which chosen for the analysis, there were 70 companies, which constitutes 59%. In the trade and services macro sector, six sectors belonged to the companies operating in: construction, IT, and retail industries. The entire trade and services macro sector were consisted of 136 business entities, whereas in the sectors chosen for the analysis, there were 92 companies selected, constituting 68%. Altogether, 162 business entities were chosen which accounted for 54% of the total number of the companies.

Furthermore, the companies are included in the data base of Notoria Serwis S.A. in December 2010, which

did not provide unconsolidated reports (and these were unconsolidated reports which the analysis was focused on) as well as did not provide complete data for the period under analysis, or the company's results concerned the other balance sheet date on the last day of December, were excluded from the analysis. In the end, the analysis encompassed 55 companies included in the industry macro sector (i.e., 46% of the total number of companies in this sector) and 73 companies included in trade and services macro sector (namely, 54% of the total number of companies operating in this sector), i.e., in total 128 business entities (which constitute 43% of all public companies).

Static Measures of Financial Liquidity

A static measure of financial liquidity of a company is based on the ratio of current assets to liabilities in a given moment due to the information derived from the balance sheet. The most popular tools of the static analysis of liquidity are the indices defined as liquidity degrees. They are created by the ratio of particular entries of current assets and liabilities. Most frequently, three ratios (degrees) of liquidity are distinguished, namely, current liquidity ratio (III degree of financial liquidity), quick liquidity ratio (II degree of financial liquidity), and immediate liquidity ratio (I degree of liquidity). The ratios here above differ from each other in terms of assets liquidity included in the numerator. These assets may be divided according to the accounting and economic criterion (Waśniewski & Skoczylas, 2002). According to the accounting criterion, there are distinguished the following liquidity degrees:

- III degree of liquidity is characteristic of reserves and short-term accruals;
- II degree of liquidity is typical of short-term liabilities;
- I degree of liquidity—short-term investments.

According to the economic criterion, there are distinguished the following liquidity degrees:

- assets of III degree of liquidity include e.g., goods and products in stock which are not marketed, reserves of materials for production in progress, advance payments for future deliveries, contested debts and past-due receivables;
- assets of II degree of liquidity include e.g., amounts due collected on due date, finished goods or products in stock for sale;
- assets of I degree of liquidity are short-term investments and this part of reserves of amounts due to which can be exchanged for cash immediately.

The application of the economic approach requires a wide variety of corrections of the amounts entered in the balance sheet, which is impossible in the sampling established for this research. Therefore, the accounting approach will be applied here. However, also in this case, there are some doubts as to the method of calculating particular indices. The numerator of ratios used in the paper will be calculated specifically according to the formula which has already presented, however, the category of current liabilities should be specified first in the denominator of particular ratios. Most frequently, it is identical to the category of short-term liabilities, however, there appear certain doubts whether it should be expanded by short-term reserves as well as accrued expenses and deferred revenues. When it comes to the first category, it will be excluded for the purpose of this paper, however, only due to lack of sufficiently precise financial data, because according to the author of the paper, short-term reserves should be included in the analysis as an integral part of current liabilities, certainly, if it is possible to obtain such data. In the case of accrued expenses and deferred revenues, either in the subject specific references or in the economic practice, there appear specific doubts if they should be included or not in

the analysis and if each entry should be taken into account. For the purpose of this study, the following two approaches will be applied:

- the ratios of current (CR) and quick (QC) liquidity will be calculated without this category in the denominator, then the ratios will have a proper symbol (1);
- in the case of ratios with the symbol (2) accrued expenses and deferred revenues will be included in current liabilities.

The value of current and quick ratios of liquidity between 2005 and 2009 for the companies operating in industry, trade and services macro sectors listed on the Warsaw Stock Exchange on December 31, 2010, is illustrated in Table 1.

Table 1

The Value of Static Liquidity Ratios of the Companies Belonging to the Industry and Trade and Services Macro Sectors Between 2005 and 2009

Ratio	Year	Sector								
		Metal	Food	Electromechanical	Industry	Construction	Retail	IT	Trade and services	Total
CR-1	2005	1.82	1.29	2.19	1.80	1.30	1.55	1.87	1.56	1.66
	2006	1.84	1.91	2.18	1.99	1.83	1.59	2.20	1.89	1.93
	2007	2.37	1.56	2.77	2.27	2.20	2.54	2.36	2.35	2.31
	2008	1.86	1.77	2.44	2.06	2.03	1.72	2.40	2.07	2.07
	2009	1.88	1.83	2.58	2.13	2.11	1.78	2.33	2.09	2.11
	Average	1.95	1.67	2.43	2.05	1.89	1.84	2.23	1.99	2.02
CR-2	2005	1.77	1.18	2.13	1.73	1.23	1.54	1.80	1.51	1.60
	2006	1.72	1.72	2.12	1.87	1.71	1.57	2.14	1.82	1.84
	2007	2.31	1.43	2.74	2.20	2.06	2.40	2.24	2.21	2.21
	2008	1.85	1.65	2.33	1.97	1.94	1.61	2.31	1.98	1.97
	2009	1.86	1.75	2.49	2.07	1.94	1.73	2.22	1.98	2.02
	Average	1.90	1.55	2.36	1.97	1.77	1.77	2.14	1.90	1.93
QR-1	2005	1.25	0.79	1.46	1.19	1.13	0.85	1.59	1.21	1.20
	2006	1.24	1.48	1.43	1.39	1.64	0.96	1.83	1.52	1.46
	2007	1.81	1.16	1.96	1.66	1.91	1.87	2.01	1.93	1.82
	2008	1.31	1.32	1.76	1.48	1.72	1.22	1.99	1.68	1.59
	2009	1.22	1.37	1.81	1.49	1.83	1.14	1.95	1.68	1.60
	Average	1.37	1.22	1.68	1.44	1.65	1.21	1.87	1.60	1.53
QR-2	2005	1.22	0.71	1.42	1.14	1.08	0.84	1.53	1.17	1.16
	2006	1.18	1.33	1.39	1.31	1.54	0.94	1.79	1.46	1.39
	2007	1.77	1.06	1.94	1.62	1.80	1.76	1.91	1.83	1.74
	2008	1.31	1.22	1.67	1.42	1.65	1.12	1.92	1.60	1.52
	2009	1.21	1.32	1.75	1.45	1.68	1.09	1.85	1.58	1.52
	Average	1.34	1.13	1.63	1.39	1.55	1.15	1.80	1.53	1.47

Note. Source: Own elaboration.

The analysis of static liquidity of the Polish public companies informs about their good financial liquidity both in terms of current liquidity and of the quick one. It is worth noticing that there is a slight difference between the ratios incorporating in the denominator, apart from short-term liabilities, also accrued expenses and the indices which do not include such items. Additionally, the ratios in both versions take the values considered as correct ones. Therefore, the further comment is limited only to the ratios due to symbol 1.

An average value CR-1 for the whole group of 128 companies oscillates between 1.66 and 2.31, whereas QR-1 between 1.20 and 1.82. The lowest value of indices was noted in 2005, whereas the highest one in 2007. The anticipated deterioration of static liquidity during the financial crisis did not take place. Moreover, the values of ratios between 2008 and 2009 were even higher than between 2005 and 2006.

Slightly higher values of liquidity ratios are observed in manufacturing companies rather than in trade and services companies, which is pretty predictable since it is connected with the commercial activity in particular sectors. CR-1 of manufacturing companies ranges between 1.80 and 2.27, and QR-1 between 1.19 and 1.66. However, in the case of the companies operating in trade and services sector, it varies between 1.56-2.35 and 1.21-1.93. An interesting point is that the difference on average sector values between CR and QR is greater for manufacturing companies, which proves that the reserves constitute a relatively higher part of current assets in this group of companies. While analyzing separately each sector included in the research, it can be observed that the highest current liquidity is typical of the enterprises operating in electro--mechanical sector (an average value of CR-1 equals 2.43), and the lowest one in the food sector (an average value of CR-1 equals 1.67). In terms of quick liquidity, the highest average values are noted in IT sector (1.87), and the lowest ones in retail (1.21). It is worth noticing that the biggest difference between current and quick liquidity is observed in electromechanical industry (0.75), and the lowest one in the construction sector (0.24), simultaneously, the construction sector registers the biggest changes in terms of the difference in an average value for five years.

Additionally, during the whole period under analysis, current liquidity ratio did not have the value lower than the recommended one in every sector (assuming that the recommended minimal value is 1.20). Quick ratios of financial liquidity, however, in 2005 were below the recommended value in food and retail sectors (0.79 and 0.85 respectively). In the case of retail sector, the situation repeated in 2006 when QR amounted to 0.96.

Dynamic Measures of Financial Liquidity

Dynamic measures of financial liquidity of companies, in terms of their structure, take advantage of the information obtained from cash flows. Many specialists (Bowen, Burgstahler, & Daley, 1986; Austin & Bradbury, 1995; Mills & Yamamura, 1998; Wędzki, 2003) tried to prove earlier that memorial and dynamic information provide different data, therefore, it is worth completing the classical analysis based on memorial information with the analysis of the data coming from cash flow accounts. The information included in cash flows allow for a much greater explanation of the financial situation, and in a much more practical and detailed way than the data included in the balance sheet, especially in terms of the structure of financing and financial liquidity (Waśniewski & Skoczylas, 2002).

In the Polish subject-related references, the most popular division of the indices based on cash flows looks as following (Sierpińska & Wędzki, 2007):

- cash sufficiency ratios;
- cash productivity ratios;
- cash flow structure ratios.

Sometimes an attempt may be observed to classify the ratios on the basis of cash flows according to the criterion typical for the classical indices analysis, i.e., analytical area, then there arise a group of liquidity ratios, however, it should be stressed that the indices qualified to this group in a more popular division which was quoted earlier can be found in the group of cash sufficiency ratios, because this group of ratios, generally speaking, is used to measure the ability to generate financial resources by a company on the basis of its basic business activity in terms of capital servicing and financing investments.

The ratios, based on cash flows, which may help to measure liquidity are as follows:

- Ratio of operating cash sufficiency for paying liabilities (OS), which is calculated as ratio of cash obtained from operating activity to current liabilities (taking into account the comments included in the part on static analysis of liquidity in terms of current liabilities category, the ratio will be calculated in two versions and analogically assigned with the symbols 1 and 2 respectively);
- Ratio of modified operating cash sufficiency for liabilities payment (MS)—calculated as the ratio of the modified operating cash to current liabilities.

The modified balance of operating cash will be calculated as the balance of operating cash without the changes in working capital because the earlier research proved that the total amount of operating cash did not always provide the best data (Pauka & Brycz, 2011).

It is worth adding that the structure of the indices of dynamic liquidity used in this paper indicates that they are mixed ratios. This information, however, comes from the balance sheet taken from the end of each period (for a given moment), because the goal of the ratios is to determine the ability to service the remaining payment of debts from the money generated from operating activity in the last year.

The values of operating cash sufficiency ratios and modified operating cash ratios for the payment of current liabilities between 2005 and 2009 for the companies operating in industry, trade and services macro sector, listed on the Warsaw Stock Exchange on December 31, 2010, are illustrated in Table 2.

Similarly to static liquidity, the value of operating cash sufficiency ratio and modified operating cash ratio in dynamic liquidity calculated according to symbols 1 and 2 differ slightly. Therefore, the remaining comments will be limited only to the ratios calculated according to symbol 1.

Generally speaking, average values of dynamic liquidity ratios in the entire group of analyzed companies have a positive value. The sufficiency of operating cash ranges from 0.03 in 2007 to 0.31 in 2009, whereas the sufficiency of modified operating cash to pay short-term liabilities from 0.21 in 2008 to 0.39 in 2006. The differences, frankly speaking quite big, between these ratios are the result of the change of working capital balance. The fact that the value of the modified ratio is higher means the changes of working capital negatively influence operating flows, which means the companies freeze a part of their cash in working capital.

It is worth noticing that the ratio based on operating cash flows does not confirm the hypothesis made at the beginning that the lowest values would be observed in 2008-2009, whereas the ratio of operating cash flows modified by working capital to short-term liabilities in 2005-2007 maintains at a similar level, in order to fall dramatically in 2008 to the lowest level in the analyzed period, and in 2009 to grow again to the level achieved in 2005. Such ratio fluctuations allow for formulating the thesis that dynamic ratios of liquidity which do not take into account the changes in working capital confirm that financial liquidity of companies during financial crises deteriorates, additionally, it is compatible with the results of earlier research proving that operating flows do not always provide the most informative data.

Table 2

The Values of Operating Cash Sufficiency Ratios and Modified Operating Cash Ratios to Pay the Liabilities of Industry and Trade and Services Macro Sectors Between 2005 and 2009

Ratio	Year	Sector								Total
		Metal	Food	Electromechanical	Industry	Construction	Retail	IT	Trade and services	
OS-1	2005	0.27	0.17	0.36	0.27	0.03	0.21	0.30	0.17	0.22
	2006	0.31	0.20	0.25	0.25	0.02	0.13	0.43	0.19	0.22
	2007	-0.60	0.13	0.25	-0.05	-0.04	0.14	0.18	0.08	0.03
	2008	0.29	0.00	0.33	0.21	-0.02	0.18	0.32	0.15	0.18
	2009	0.35	0.21	0.52	0.37	0.25	0.18	0.34	0.26	0.31
	Average	0.13	0.14	0.34	0.21	0.05	0.17	0.32	0.17	0.19
OS-2	2005	0.26	0.16	0.35	0.26	0.04	0.21	0.29	0.17	0.21
	2006	0.28	0.17	0.25	0.24	0.02	0.13	0.42	0.19	0.21
	2007	-0.61	0.12	0.24	-0.06	-0.05	0.14	0.18	0.08	0.02
	2008	0.29	0.00	0.30	0.20	-0.03	0.16	0.31	0.14	0.17
	2009	0.35	0.20	0.50	0.36	0.23	0.16	0.32	0.24	0.29
	Average	0.12	0.13	0.33	0.20	0.04	0.16	0.30	0.16	0.18
MS-1	2005	0.39	0.23	0.61	0.42	0.08	0.22	0.49	0.26	0.33
	2006	0.70	0.32	0.40	0.47	0.29	0.24	0.44	0.32	0.39
	2007	0.60	0.13	0.56	0.44	0.22	0.38	0.28	0.28	0.35
	2008	0.21	0.12	0.48	0.28	0.15	-0.02	0.31	0.16	0.21
	2009	0.34	0.30	0.51	0.39	0.28	0.31	0.29	0.29	0.33
	Average	0.45	0.22	0.51	0.40	0.20	0.22	0.36	0.26	0.32
MS-2	2005	0.37	0.19	0.60	0.40	0.08	0.21	0.47	0.25	0.32
	2006	0.65	0.28	0.40	0.44	0.23	0.23	0.43	0.30	0.36
	2007	0.59	0.12	0.56	0.43	0.21	0.33	0.27	0.26	0.34
	2008	0.22	0.11	0.41	0.26	0.14	-0.04	0.29	0.14	0.19
	2009	0.33	0.30	0.51	0.39	0.25	0.29	0.27	0.27	0.32
	Average	0.43	0.20	0.49	0.38	0.18	0.20	0.35	0.24	0.30

Note. Source: Own elaboration.

Average values of operating cash sufficiency ratios and modified operating cash ratios in particular macro sectors in the entire period under analysis have positive values, and similarly to static ratios are higher in industry macro sector, respectively, 0.21 and 0.40 as well as 0.17 and 0.26. Simultaneously, it should be stressed that in both cases, modified operating cash ratio has a higher value, and the difference between the ratios is higher in the group of manufacturing companies, which means that the share of working capital in the process of generating operating cash is higher in manufacturing companies, i.e., operating cash is influenced more by the changes in operating capital in this group of companies.

If each sector is analyzed separately, the highest values of dynamic liquidity ratios are noticed in the enterprises operating in the electromechanical industry, and the lowest in the construction sector. It is worth mentioning that the difference between average values of both analyzed ratios of dynamic liquidity is significantly the highest in the metal sector, whereas the lowest in the IT sector, and there is a slight difference in the retail sector.

Another interesting point to observe is that in the industry macro sector in 2007, average values of dynamic ratios were negative. It was the result of extremely low ratios achieved in that year by the enterprises

operating in the metal sector (ratios of operating cash sufficiency and modified operating cash ratios amounted to -0.60 and -0.67 respectively). Apart from this sector, negative values of dynamic ratios in two subsequent years 2007 and 2008, were recorded in the construction industry, however, the values of ratios were not weaker than -0.05.

Correlation Between Static and Dynamic Indices of Liquidity

Due to the fact that the values of dynamic and static ratios of financial liquidity are calculated according to symbol 1 and 2, which differ slightly, the correlation analysis was narrowed to the ratios based on symbol 1 only. The values of person linear correlation coefficients between static and dynamic ratios were settled for the entire group (i.e., 128 entities), for the group of manufacturing companies, separately for the companies of trade and services macro sector and separately for each of six sectors as well. The calculations were made for the following years between 2005 and 2009, and for the entire analyzed period put together on the basis of annual data. The summary of the calculations is included in Table 3.

Table 3

The Values of Correlation Coefficients Between Static and Dynamic Ratios

Sector	Year					Together
	2005	2006	2007	2008	2009	
CR versus OS						
Metal	0.46	0.56	-0.85	0.31	0.08	-0.52
Food	-0.05	-0.02	-0.40	-0.84	-0.15	-0.43
Electromechanical	0.31	0.66	0.24	0.55	0.76	0.48
Industry	0.37	0.42	-0.60	-0.05	0.35	-0.23
Construction	0.20	0.04	0.06	-0.72	-0.02	-0.20
Retail	0.79	-0.30	0.58	0.74	0.38	0.47
IT	-0.02	0.14	0.21	0.10	0.04	0.09
Trade and services	0.25	0.10	0.26	-0.21	0.13	0.05
Total	0.33	0.22	-0.36	-0.14	0.24	-0.12
CR versus MS						
Metal	0.84	0.09	0.69	0.27	-0.14	0.31
Food	0.01	0.71	-0.01	0.05	-0.19	0.09
Electromechanical	0.66	0.64	0.64	0.49	0.78	0.63
Industry	0.63	0.37	0.62	0.31	0.15	0.39
Construction	0.22	0.11	0.25	-0.38	0.04	0.09
Retail	0.74	0.31	0.41	0.56	0.37	0.44
IT	0.64	0.25	0.53	0.02	0.07	0.20
Trade and services	0.57	0.20	0.39	0.12	0.16	0.25
Total	0.61	0.28	0.50	0.22	0.15	0.32
QR versus OS						
Metal	0.41	0.35	-0.88	0.20	0.16	-0.59
Food	0.27	0.11	-0.40	-0.82	-0.15	-0.39
Electromechanical	0.29	0.68	0.21	0.41	0.67	0.41
Industry	0.36	0.32	-0.69	-0.18	0.25	-0.32
Construction	0.22	0.06	0.09	-0.60	0.01	-0.13
Retail	0.42	-0.01	0.63	0.74	0.39	0.49
IT	-0.13	0.17	0.19	-0.03	0.02	0.05
Trade and services	0.12	0.13	0.28	-0.16	0.13	0.07
Total	0.23	0.19	-0.38	-0.16	0.18	-0.16

(Table 3 continued)

Sector	Year					
	2005	2006	2007	2008	2009	Together
CR versus MS						
Metal	0.85	0.00	0.66	0.14	0.02	0.29
Food	0.53	0.75	-0.08	0.00	-0.19	0.11
Electromechanical	0.65	0.70	0.53	0.42	0.78	0.58
Industry	0.69	0.36	0.53	0.19	0.12	0.33
Construction	0.23	0.14	0.25	-0.28	0.02	0.12
Retail	0.35	0.24	0.40	0.53	0.25	0.36
IT	0.60	0.20	0.53	0.14	0.01	0.20
Trade and services	0.47	0.19	0.37	0.21	0.08	0.23
Total	0.57	0.25	0.43	0.19	0.10	0.27

Note. Source: Own elaboration.

The calculations presented in Table 3 prove a low correlation between static and dynamic ratios describing financial liquidity of enterprises. It is worth emphasizing that while taking into account the results of the entire group, a positive correlation between the variables is observed when modified by working capital operating cash is applied. However, if the analysis takes into account total operating flows—they are negatively correlated with both current liquidity ratios and the quick one. Therefore, the hypothesis concerning a weak positive correlation between static and dynamic ratios of financial liquidity may be confirmed only in the case of modified flows.

Much more visible intensity of correlation between static and dynamic liquidity ratios is observed if the analysis is made in the macro sector dimension. It should be stressed in each analyzed relation between the ratios that in the case of the industry sector, the correlation is positive. In the latter case of the analyzed macro sectors, the directions of correlation confirm the observations for the entire analyzed group. Generally speaking, this intensity of interdependencies between the ratios is higher in the industry macro sector, even though still remains weak.

Even stronger correlations can be observed while disaggregating the group. It is noticed in three sectors: electromechanical, retail, and IT. The dependences between static and dynamic ratios of liquidity are positive irrespectively of the pair of ratios which were applied. Additionally, in the case of electromechanical sector, the thesis may be made that the correlation between static and dynamic ratios of liquidity is characterized by medium intensity (the values of correlation coefficient amount to between 0.41 and 0.63 are higher if quick ratio of liquidity is applied and operating cash is modified by the change of working capital). In the case of the remaining sectors, their interdependence is weak.

If the analysis is done separately for each year, then the intensity and direction of interdependences are much more diversified. Only the ratios in the electromechanical sector are stable in terms of the direction—in each of the analyzed period, it is a positive correlation, and its intensity ranges between 0.21 and 0.78. Two other sectors: retail and IT are highly stable in terms of the direction of interdependences between the variables. In 4 of 5 analyzed years, these correlations are positive, what is more, negative correlations are observed only in one of the periods, and only when the analysis takes all operating flows into consideration. If modified flows are to be applied, then the direction of correlation remains unchangeably positive in both sectors.

It is surprising that the highest negative correlation was observed in 2007 in the metal sector and amounted to -0.88, whereas the highest positive correlation was noticed in 2005 in the metal industry and equaled to 0.85. The metal sector can be characterized by the highest changeability of correlation ratios during the years.

Conclusions

Summing up the research, it can be observed that generally low level of correlation between static and dynamic liquidity ratios may prove that the ratios most often include different data about enterprises. So, a conclusion can be drawn that, for the proper evaluation of the financial situation of a given business entity in terms of its liquidity, it is often necessary to provide simultaneously the analysis of a balance sheet and cash flows. At the same time, it is worth noticing that the highest value of the correlation ratios was observed when modified flows by the change of working capital operating cash flows were used. If the conclusions are based only on the analysis of modified operating cash, then the hypothesis (H1) of a weak positive correlation between static and dynamic ratios will be confirmed. If the analysis is based on total operating flows, then this part of the hypothesis cannot be confirmed.

However, irrespectively of the applied cash flows, their intensity of correlation with static indices of financial liquidity is higher in the industry sector, which allows to confirm the second thesis made at the beginning.

The third of the hypothesis that financial liquidity measured both by static and dynamic ratios during the financial crisis would deteriorate in most ratios applied in the analysis was not confirmed. The only exception is the dynamic ratio of the sufficiency of modified operating cash flow for paying current liabilities. In this case, in 2008, a sudden drop of index values was observed versus its level observed in the subsequent years.

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Assessment of Turkish Ceramic Manufacturing Companies' Competitiveness and Compatibilities to EU in Consideration of Porter's Five Forces Model

A. ELEREN, C. YILMAZ
Afyonkocatepe University, Afyon, Turkey

As an EU candidate, Turkey and Turkish firms have to prepare and enhance their competitiveness, and have to be more compatible to EU states' economies for full membership and unification. This study is trying to assess the Turkish ceramic industry's position in the light of Porter's framework. Since the publication of competitive strategy: techniques for analyzing industries and competitors by Porter in 1980, his frameworks are still considered as reliable however some criticisms still exist. Questionnaire applied to the firms which include questions related to three main topics: qualitative and quantitative information related to firm characteristics; firms' internal strengths related to finance, production, and managerial aspects etc.; and LİKERT scale based on Porter's frame. Results of the study: managerial structures are less professional; manufacturing technologies are old; there is a need for use of advanced managerial techniques such as TQM, JIT etc.; lower rate of direct exportation (they usually export via third parties); less clustering activities; and innovative activities are not enough for more competitive environment.

Keywords: competitiveness, EU, SME, ceramic sector, sector analyze, Porter, internal strengths

Introduction

Traditionally, it is believed that success of the firms relies on its ability adapt to market conditions. For example, Bain (1968) suggested firms' strategy should rely on industry's structural forces for success. Such thinking mainly concentrates on evolution of industry. In contrast to traditional thinking, Porter in his studies mainly concentrated on firms' internal efficiencies and capabilities that could create core competencies during the strategy set up process. But Porter (1980) did not neglect the forces influencing market conditions—five competitive forces model. Competitive market forces are discussed in several studies (Boulding et al., 1994). Porac and Thomas (1990) mentioned that managers usually focus on certain information which they thought it is critical, and they make their decisions and performance measurements on this basis. Miller and Freisen (1984) suggested business environment could affect the business strategy.

This study suggests that understanding the business environment and its competitive forces might lead the firms to design better strategies and to success. Ceramic sector, traditionally, is a strong and competitive sector

A. ELEREN, Associated Professor, Doctor, Business administration, Afyonkocatepe University.

C. YILMAZ, Assistant Professor, Doctor, Business administration, Afyonkocatepe University.

Correspondence concerning this article should be addressed to C. YILMAZ, A.K.Ü., İ.İ.B.F., ANS kampusu, egitim-3, Afyon/Turkey. E-mail: ylmzcc@yahoo.com.

in Turkey. But changing competitive environment is forcing them critically. In the global competitive environment, decision-makers have to make adoptions and redesign their strategies. The study includes analyses which examine the competitive forces of Turkish ceramic sector in the light of Porter's five forces model.

Competitive Powers

In today's global economy, there are several factors or forces that affect the success of strategic decisions. Strategists have to take their decisions according to their positions by assessing their own positions. One might describe competitive powers as "strategic tools that are enhancing companies' competitiveness". There could be numerous competitive powers and they vary in according to firms' positions and strategic choices. Determining and using of these powers and implementing into a strategic choices might be quite complex because of cultural traits (Hitt, Dacin, Tyler, & Park, 1997; Ralston, Gustafson, Cheung, & Terpstra, 1993).

Competitive powers' importance might vary in according to environment where the company survives. So the factors such as cultural traits, geographical placement might increase or decrease the importance of the competitive powers. That is why there are several definitions that are trying to define the term "competitive powers".

Peteraf (1993) defined competitive forces as ability to generate supplementary income rather than the average earnings; Scoot and Lodge (1985) defined competitive forces as ability to increase income of a nation while increasing production of goods and services to be exported to other nations; Hataopoulos, Krugman, and Summer (1988) defined competitive forces as ability to provide significant income increase. These and similar other definitions mainly concentrated on increased efficiency and income. In addition to these factors, European Commission (1994) highlighted the importance of ability to create new jobs in the economy.

Porter (1998) suggested that nations could gain competitive powers by using their sources optimally, and for optimal usage, they have to focus on certain sectors and create specialized clusters on these sectors. With the globalization, studies related to measuring and increasing competitive powers became more popular among the academics. Real currency calculations are the most popular methods to assess competitive powers. In addition to these indicators, Kotan (2002) suggested factors like inflation rate, wage levels, unemployment rate, efficient usage of men power, new investments, and trained workforce and research and development facilities could also influence the competitive powers of firms or nations.

Factors Influencing Competitive Powers

There are several factors influencing the competitive powers of a firm, for example, balance between cost and quality, product diversity, design, esthetics, packaging, technology, efficiency, flexible production methods etc.. These factors could be classified under two headings: internal factors and external factors (Eroğlu & Özdamar, 2006).

Quality, price, efficiency, profitability, Technological level, speed, and timing are the internal factors influencing the competitive powers of a company. Additionally, product development capabilities and flexible production methods are also can be considered as internal factors.

Whereas, external factors could be listed as follows: rivals' competitive power, market instability, logistic capabilities market, availability of subcontractors, sources of nation, efficiency of local financial market, transportation network, and the level of economical and political development.

Porter's Five Forces Model

Porter's (1980) five forces model is one of the most respected models in the literature to assess the competitive environment. Porter classifies limitless different competitive forces, which affect the competitive power, under five headings: the rivalry between existing competitors; the threat of new entrants; the threat of substitute products; the bargaining power of suppliers; and the bargaining power of buyers.

Figure 1 represents important factors that can critically enhance a country's or a company's competitiveness. Strength in human capital might augment the internal efficiency as well as external efficiency. Efficient usage of technological knowledge can critically reduce the company's costs or improve the quality of products. New innovations (products) might make the company leader in the sector. In the competitive sectors managerial capabilities can be extremely important even to survive in the sector. However lacking financial resources defects in economical climate or in infrastructure critically might reduce the competitiveness of companies.

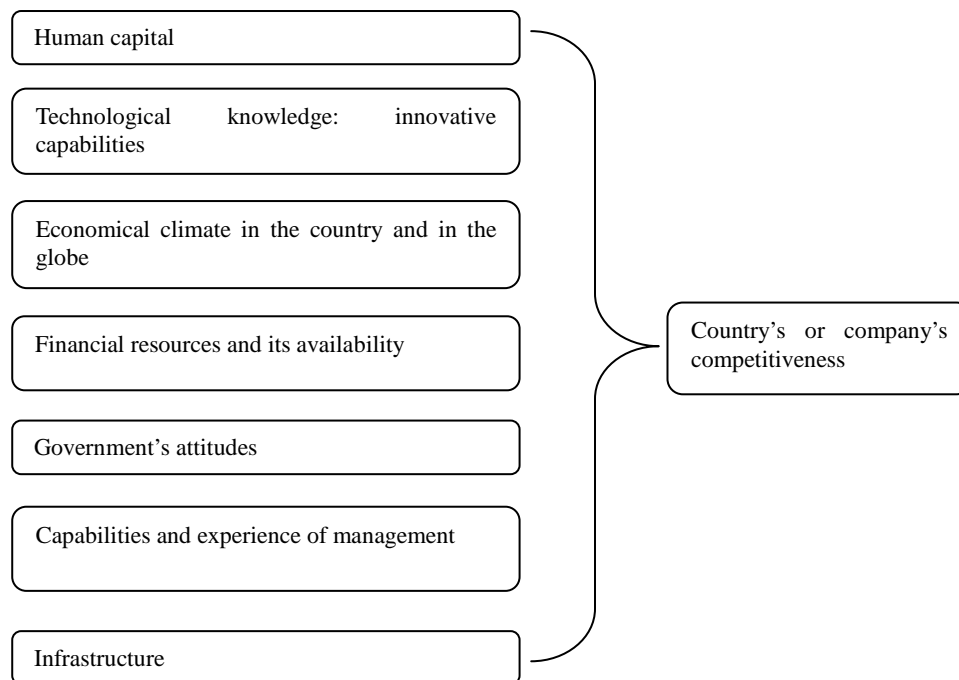


Figure 1. Factors affecting competitive power of a company.

Figure 2, illustrates Porters five forces. These are: the rivalry between existing competitors, the threat of new entrants, and the threat of substitute products, the bargaining power of suppliers and the bargaining power of buyers.

The rivalry between existing competitors. As industry becomes more mature competition increases among the rivals, selective demand intensifies and companies start to invest in incremental product innovations (Kotler, 2000), hence, the attractions of industry weakens. During intensified competition, companies usually go for differentiated products and use focus or niche strategies. On the other hand, immature industry attracts more new comers because immature sectors provide more opportunities for new comers, more control on pricing, less competition etc..

The threat of new entrants. The threat of new entrants is higher during the growing phase of the industry.

During the growing phase, existing firms' profits are increasing. That is why sector attracts the other investors and is considered as emerging market. When the new entrants become a threat for existing firms, strategies swifts from primary demand to selective demand and they start to focus on certain customer segments (Utterback & Abernathy, 1975; Mansfield, 1993). In this period, prices go down and efforts for efficiency increase.

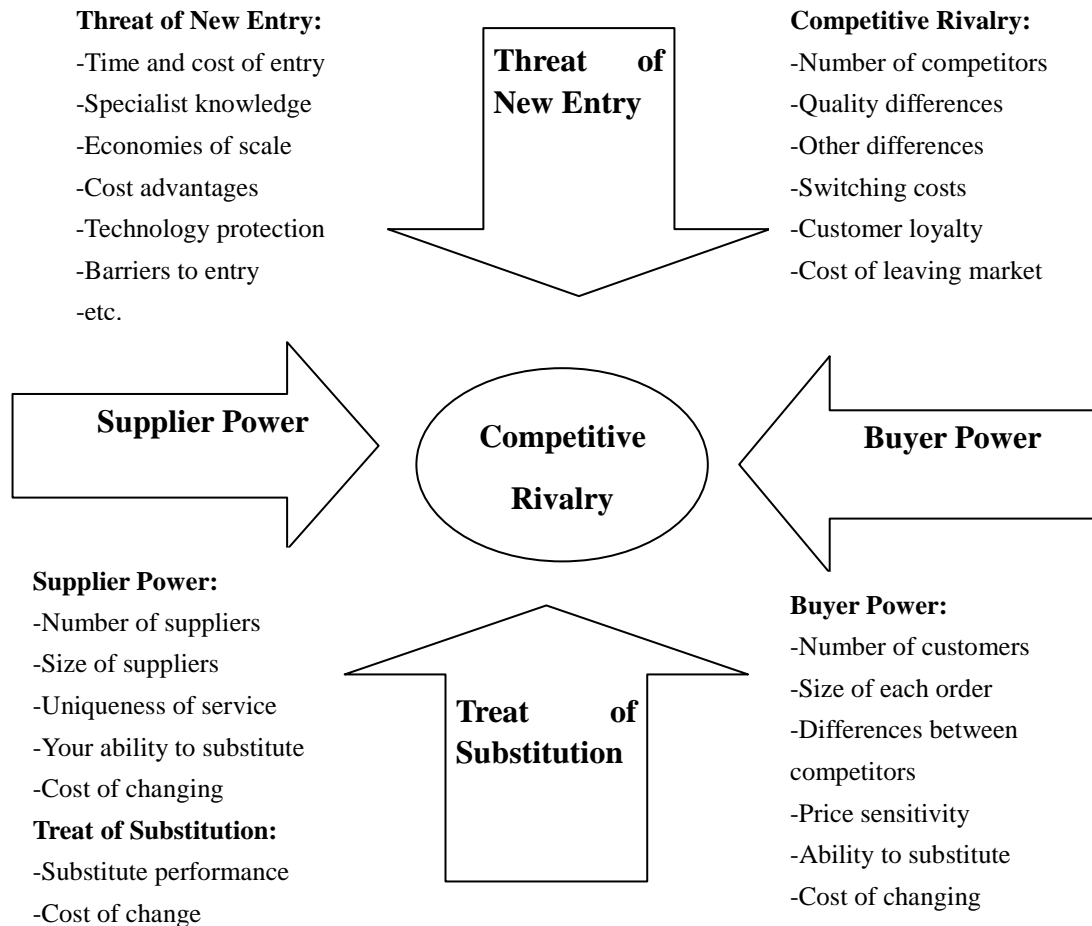


Figure 2. Porter's five forces. Source: Retrieved from http://www.mindtools.com/pages/article/newTMC_08.htm.

The threat of substitute products. The threat of substitute products can limit the control of the firm on pricing and limit the profitability of industry. Cost leadership strategy or creating brand loyalty would be the choices for existing firms. Porter (1980) and Scherer and Ross (1990) suggested reducing alternative product types' prices would be a good defensive strategy in the long term.

The bargaining power of suppliers. The bargaining power of suppliers is the ability to determine different prices and the capability to charge them to different buyers, when the suppliers have advantageous position against to buyers (Porter, 1989, 1996). If the price of a product is heavily determined by the suppliers this means suppliers have higher bargaining power. Capability of determining prices can critically affect the profitability of a firm. Suppliers who have higher bargaining power can critically limit the buyers' profitability with higher prices.

The bargaining power of buyers. The bargaining power of buyers is the other side of the coin. In this case, buyers have power to determine the prices and limit the profits of suppliers, if buyers have higher bargaining power.

Porter indicates that analyzing of these forces might help to the managers who are seeking to have better positioning which is important for success in the long term. Healthy analyses of five forces could lead the managers better strategic choices: cost leadership, differentiation, or focus (or their combinations).

Strategic planning and analyzing are the main areas that Porter interested in. With customary methods, the information which is used during strategic analyses is mostly not precise or uncertain. In addition to this, the characteristics of data used in different analyses mostly do not match with each other. Consequently, their results usually are not comparable.

However, Porter's five forces model more exhibits how various factors affect the profitability of a company (Arons & Waalewijn, 2000). This model focuses on perception of management about the relationship between the environment and the strategy based on this environment. Firm's strategies and performance depend on industry's structure. So, the attractiveness of an industry relies on the threats and opportunities. On the other hand, average performance of firms in attractive industries would be higher than the less attractive industries (Sultan, 2007). Chaffey (2002) indicated that Porter's five forces model could still be used as a framework to examining the e-business sector.

Besides, Porter's model can be used for assessing the business environment—rivals' positioning, their offensive and defensive tactics and general business climate (static analysis), and therefore decision-makers could create more realistic scenarios for the future decisions (dynamic analysis).

Basics of Research Framework

Searches, in Turkey, mainly concentrated on existing economical problems of SMEs and ceramic sector. These studies mostly neglected the competitive power of companies and future perspectives of them. The author's study is trying to examine the existing situation and trying to appraise the future.

Aim of the study is to find out the degree of competitive forces in Turkish ceramic sector which might provide information to assess the threats and opportunities related to industry. Results of the study would be used for improvement purposes. Scope of the study is limited by Turkish ceramic companies.

Limitations and Deficiencies of the Study

The study is a statistical study. That is why it has defects that any statistical study might have, such as, it is a domestic study that results are only representing the Turkish ceramic sectors characteristics. Furthermore, some firms did not respond to the study and some are excluded from the study because of their extra ordinary results.

Study represents the views of manager/owners, which does not mean these views are unquestionable facts. There are several theorems and thoughts in the literature that could explain the similar results in a very different ways.

In addition to these, study has started just before the global crises when the Turkish economy and ceramic sector have not fully been affected. So the study does not represent the effects of global crises.

Scale of the Search

Demographic information. Demographic information is gathered from the questionnaire questions which

includes 50 (multiple choice and ranking scale) questions that applied to 73 Turkish ceramic companies (out of 259 company). Nine of them are eliminated because of inappropriate results. Additionally, face to face interviews applied to these companies' owners of managers. Responses to these questions provided us data related to their fields of activities, legal structure, manpower, and turnover, in addition to their managerial, financial, and marketing activities.

Scale of competitiveness. Our scales of competitiveness is designed on the basis of Porter's (1985); Certo and Peter's (1995); Dess and Miller's (1996); and mostly Coşkun's (2001) scales. The spirit of original scale is prevented while some questions are added which critically elucidates the internal dynamics of company. This scale was firstly applied in a study by Eleren and Kayahan (2008) which was used for analyzing regional development. In this study, reliability rate of scales (Cronbach's alpha) found 79.16%.

Distribution of questions as follows: perception of potential threats (nine questions); perception of intensity of competition (12 questions); perception of threat of substitute goods (seven questions); evaluation of bargaining power of buyers (nine questions); and evaluation of bargaining power of sellers (12 questions).

Reliability test of the scale. Scale is tested with SSPS program and the results of Cronbach's alpha found 86.13%.

Evaluation of Research Findings

Research findings assed under three headings: general classifications of firms; assessment of internal competitiveness; and analysis of ceramic companies according to Porter's five forces scale.

General Classification of Firms

Geographic concentrations of the firms are mainly centered in three cities: with 18.8% Istanbul is having the highest concentration, and then followed by 10% in Kütahya and Çanakkale. This is may be because of ceramic companies' prefer to establish their factories in such places that close to raw material and market places. In terms of distance to raw material and market, these cities are strategically important for ceramic companies.

Sixty two point five of the firms are SMEs who produce tiles and tile products and work as sole companies. They are processing the finished goods, ornamenting and garnishing them. Obviously, they are labor intensive firms. These small firms are mostly family owned firms.

In terms of partnership, there are two main characteristic features: they are mainly family owned partnerships (usually two to five partners); and board of management usually consists of family members.

Definition of Turkish trade and industry ministry describes the SMEs under three headings: number of workers; amounts of capital investment; and annual turnover. Measures are applied according to this definition.

According to labor force criterion, 56.3% of the firms (subjected to the search) can be considered as SMEs which is inconsistent with turnover (93.8% considered as SMEs) and capital (90.6% considered as SMEs) criterions. In consideration of both criterions, sector is mainly dominated by the SMEs.

Assessment of Internal Competitiveness of the Firms

The highest portion (23.4%) of the firms' objective is to be the leader in the sector. This is followed by being an integrated part of a production chain. The small amount of the firms is trying to keep on working as subcontractors.

Survey results indicate that majority of the firms are concentrated on international markets rather than

internal markets. Furthermore they prefer to expand vertically rather than horizontally. Recently, vertical or horizontal integration among the sector has risen to 42%, this indicates that efforts to create more efficient cluster in the sector are also intensified which indicates that they are trying to enhance their internal competitiveness.

The management structure of sector is becoming more and more professional, and 79.9% of the companies are using professional managers including 25% of the owners completely leaving the management to professionals, 73.8% of the managers are undergraduate, and 17.3% of them are postgraduate from a university.

As a strategic target, 68.8% of the firms declared that their main target is customers' satisfaction. Whereas 12.5% of them indicated that their main target is to reach a total quality management.

While producing diamond (square cement) or vitrified mass production methods is used widely. Limited numbers of firms are using methods like JIT (Just in Time) and FMS (Flexible Manufacturing Systems). Almost all of the big companies are using information technologies widely.

Their rate of capacity utilization is 85.9% all along firms, contributed to the search. This rate can be considered as high. But the majority of the firms (81.3%) do not have any patent rights and only a small amount of them having one or two patent rights that indicates there is a weakness in product development.

Recent developments in international trade especially invasion of cheap Chinese products require more efforts for product development facilities. Product development facilities could strengthen the firms' internal competitiveness.

Applications related to total quality management are relatively high with 78.1%. This is a good sign for their internal competitiveness.

Adaptation to technologic breakthroughs is relatively high: 25% of the companies are using newer technologies (younger than five years old); But a large portion of the firms (73.4) are using technology comparatively older technology up to 15 years old; Only 1.6% of the firms prefer to traditional production methods and they suggest that these traditional methods providing them competitive advantages in such targeted markets—where the customers are looking for old styles and traditional products.

There is a direct relationship between the age of the firms and their adaptation to technological breakthroughs ($p = 0 < 0.02$). This is because majority of the firms are established within in the last 15 years and they are using the technology when they are established.

Analysis of Ceramic Companies According to Porter's Five Forces Scale

On the basis of Porter's five forces model, five groups of questions were acquired from Turkish ceramic companies. These groups were composed of: perception of potential threats (Group 1); perception of density of competition between the rivals (Group 2); perception of threats from substitute goods (Group 3); evaluation of bargaining power of buyers (Group 4); and evaluation of bargaining power of sellers (Group 5).

Hypotheses

Hypothesis $H_1(1)$: there is a difference between the sector and its sub-sectors. Relationship between the sector and its sectors are tested with ANOVA test. According to test results, significance levels (p) of the groups vary between 0.757, 0.837, 0.028, 0.046, and 0.841 respectively. Since the third and fourth groups' significance levels are low, the hypothesis $H_1(1)$ is rejected and $H_0(1)$ is accepted.

Hypothesis H₁(2): there is a direct relation between the sizes of firms and their competitiveness. Here the authors used three factors to measure scale of the firms: labor force; capital; and turnover.

1. In terms of labor force: there is a significant difference ($p < 0.05$) between the labor sizes. Companies with higher labor force are more competitive than the smaller ones. There is a direct relation between the number of employees of firms and their competitiveness.

2. There are significant differences between the small firms and big firms in terms of capital size in first and third group. But results of second, fourth, and fifth group questions do not exhibit a significant difference between small firms and big firms in terms of capital size. So the size of capital is not a significant determinant of competitiveness in ceramic sector: H₁(2) is rejected in terms of capital size.

3. Turnover size is also not having a criterion which affects the competitiveness of firms. Results of the first and third group represent a significant difference between the small firms and bigger ones. H₁ (2) is rejected in terms of turnover size.

Hypothesis H₁ (3): legal structure of the companies makes differences in terms of competitiveness. For this hypothesis significance levels are low: 0.001, 0.048, 0.047, 0.001, and 0.001 respectively. That is why H₁ (3) is rejected since there is no meaningful relation. Legal structure of the companies does not make difference.

Hypothesis H₁ (4): there is a difference between the management structures. ANOVA test results (p) levels of the groups are 0.025, 0.002, 0.000, 0.015, and 0.032 respectively.

Evaluation of Group Questions Belong to Competition Scale

Question inquired with the participants grouped in five headings: perception of potential threats; perception of intensity of competition; perception of threat of substitute goods; evaluation of bargaining power of buyers; and evaluation of bargaining power of sellers.

Perception of potential threats. Nine questions were asked related to perception of potential threats of firms and told them to mark, to what extent they felt like the related factor is a threat. The highest level of threat is considered as 5 and the lowest threat is 1. As it can be seen in Table 1, the biggest threat is product diversity. In the sector, there are many firms competing with each other as well as many international competitors and their range of products are almost uncountable. To cope with that, much of product is threatening the firms. This is also related to the second question ability of rivals firms to develop new product. Obviously, that much of product diversity in the market can be related to rival firms' high capabilities to develop new products. Search results also support that existing firms feeling threatened by their new product development capabilities. But there is a dilemma: firms are highly threatened by the product diversity and the capabilities of rival firms' product development; on the other hand, they invest modest amount of money in research and development facilities. The threats of other factors: growth of the market; rival firms' influences on market; and risk of new start-ups threatens them relatively lower than the previous ones.

Perception of intensity of competition. Interestingly, the biggest threat to firms is the growth of the industry (which is thought to be an opportunity) and possibility of shrinking of market that is not considered as a big threat. But surprisingly they did not affect too much from the global crises (yet) like other sectors.

The second biggest threat for them is the existing fierce competition. Characteristics of sector enable small firms to compete with big firms, local producers with international producers, and high technology users with traditional technology users. That is why, majority of them think that the competition in the sector is "fierce" or "destructive" competition.

Table 1

Perception of Potential Threats

	<i>N</i>	Aver.	Std. Dev.	1	2	3	4	5
Product diversity	64	3.69	1.194	6.4	9.4	25.0	28.1	31.3
Rivals ability to innovate	64	3.59	1.123	3.1	15.6	25.0	31.3	25.0
Government policies	64	3.47	1.208	9.4	6.3	37.5	21.9	25.0
Growth of the market	64	3.41	0.988	3.1	9.4	48.4	21.9	17.2
Rival firms' influences on market	64	3.40	1.205	12.5	6.3	25.0	40.6	15.6
Risk of new start-ups	64	3.25	1.512	12.5	18.8	28.1	25.0	15.6
Size of capital	64	3.17	1.017	6.3	15.6	42.2	26.6	9.4
Cost advantages	64	3.16	1.130	12.5	12.5	28.1	40.6	6.3
Profit margin	64	2.63	1.228	9.4	28.1	40.6	15.6	6.3
Average		3.31						

A small firm can easily compete with big firms by using different designs or using traditional methods. Furthermore, firms' different capabilities vary much, so to predict competitors' power is such a difficult task. Related to characteristics of sector, new product can easily enter to the market and these products can easily be imitated by the rival firms which are also considered as a big threat for the firms.

Other threats such as global threats, domestic threats, and threats related to Turkey's EU candidacy etc., are considered relatively less risky.

Table 2

Perception of Intensity of Competition

	<i>N</i>	Aver.	Std. Dev.	1	2	3	4	5
Growth of the industry	64	3.47	1.154	9.4	9.4	21.9	43.8	15.6
Existing fierce competition	64	3.38	1.351	12.5	15.6	18.8	28.1	25.0
Imbalanced powers of rivals	64	3.28	1.188	6.3	12.5	37.5	28.5	15.6
Speed of new product entrance	64	3.14	0.924	3.1	17.2	51.6	18.8	9.4
Global threats	64	2.73	0.983	12.5	25.0	43.8	15.6	3.1
Domestic threats	64	2.72	0.845	9.4	21.9	59.4	6.3	3.1
Threats related to Turkey's EU candidacy	64	2.41	1.365	32.8	28.1	17.2	9.4	12.5
Internal risks against rivals	64	2.39	1.048	20.3	35.9	34.4	3.1	6.3
Risk of market shrink	64	2.38	1.000	21.9	31.3	37.5	6.3	3.1
Ability to shift other markets	64	2.22	1.374	37.5	34.4	12.5	0.0	15.6
Regional threats	64	2.22	1.000	28.1	31.3	34.4	3.1	3.1
Possibility of reconciliation with opponents	64	2.22	1.175	31.3	34.4	25.0		9.4
Average		2.71						

Perception of threat of substitute goods. Characteristically, Ceramic sector is open to all kinds of substitute goods. For this reason, answers to questions related to perception of threat of substitute goods are almost alike with each other. Only, "the availability of substitute goods" is seen as a more threatening factor than the other factors. Members of the sector indicate that Chinese products and their substitutes are a real threat to them, in terms of availability, market penetration and price etc.. Sector is widely used in imported inputs during the production and a whole range of substitute products are available in the market. In addition to Chinese product's threat, agreement about the custom union with EU is also considered as a serious threat even though it seems like an opportunity.

Table 3

Perception of Threat of Substitute Goods

	<i>N</i>	Aver.	Std. Dev.	1	2	3	4	5
Availability of substitute goods	64	3.22	0.967	6.3	6.3	59.4	15.6	12.5
Penetration of substitute goods	64	3.09	0.811	3.1	12.5	62.5	15.6	6.3
Rate of imported inputs	64	3.08	1.088	9.4	17.2	39.1	25.0	9.4
Rate of imported inputs in substitute goods	64	3.06	1.006	9.4	12.5	46.9	25.0	6.3
Price of substitute goods	64	3.00	1.155	12.5	15.6	43.8	15.6	12.5
Variety of substitute goods	64	2.89	0.758	1.6	26.6	56.3	12.5	3.1
Quality of substitute goods	64	2.53	1.098	18.8	31.3	34.4	9.4	6.3
Average		2.98						

Table 4

Evaluation of Bargaining Power of Buyers

	<i>N</i>	Aver.	Std. Dev.	1	2	3	4	5
Importance of price for buyers' preferences	64	4.06	1.258	6.3	9.4	9.4	21.9	53.1
Importance of quality for buyers' preferences	64	3.81	1.052	6.3	0.0	28.1	37.5	28.1
Barging power of buyer	64	3.66	1.087	3.1	12.5	25.0	34.4	25.0
Importance of good for buyers	64	3.61	1.177	9.4	4.7	25.0	37.5	23.4
Numbers of buyers	64	3.50	0.943	6.3	6.3	25.0	56.3	6.3
Reliability of buyers	64	3.48	1.247	12.5	6.3	21.9	39.1	20.3
Risk of buyers' making agreement with the rivals	64	3.19	1.367	12.5	25.0	15.6	25.0	21.9
Frequency of changes in buyers decisions	64	3.08	1.264	12.5	20.3	31.3	18.8	17.2
Buyers' affects on product development	64	3.00	1.069	9.4	21.9	34.4	28.1	6.3
Average		3.49						

Table 5

Evaluation of Bargaining Power of Sellers

	<i>N</i>	Aver.	Std. Dev.	1	2	3	4	5
Affects of supply system on cost	64	3.55	0.872	1.6	4.7	46.9	31.3	15.6
Risk of increase in input prices	64	3.48	1.002	3.1	9.4	40.6	36.1	18.8
Number of suppliers	64	3.45	0.975	1.6	14.1	37.5	31.3	15.6
Cost of transportation	64	3.39	1.149	9.4	9.4	29.7	35.9	15.6
Suppliers' abilities to fulfill sales agreement	64	3.25	0.943	6.3	6.3	53.1	25.0	9.4
Availability of raw material	64	3.14	0.900	0.0	25.0	46.9	18.8	9.4
Risk of delays in supply systems	64	3.06	1.037	9.4	15.6	40.6	28.1	6.3
Availability of suppliers	64	2.94	0.710	3.1	18.8	59.4	18.8	0.0
Possibility of delays from suppliers	64	2.94	0.871	3.1	21.9	62.5	3.1	9.4
Possibility of rivals' pressures on suppliers	64	2.86	1.009	9.4	21.9	46.8	15.6	6.3
Risk of delays in distribution systems	64	2.78	0.863	9.4	18.8	59.4	9.4	3.1
The length of contracts with suppliers	64	2.68	0.946	15.6	18.8	48.5	17.2	0.0
Average		3.13						

During the interviews, many of the ceramic sector managers/owners indicated that they were pretty much confident about their product quality. They say that substitute goods are a real threat to them in every mean except the quality wise.

Evaluation of bargaining power of buyers. As mentioned before, there is a huge variety of products produced by a variety of firms in the market. Hence, the buyers could easily compare the prices and the

qualities of mass produced goods which enhances the power of buyers. The ceramic producers feel that the price of products is the main threat for them, except a producer who was producing artistic works, mentioning that price does not create a pressure on him.

In addition to price pressure, other factors like costs of goods, quality, product diversity, and flexibility are also affect the power of buyers. In interviews, the balance between the price and quality was one of the main subjects that firms' managers/owners mentioning. Buyers' affect on product development can be seen as a least threatening factor because they have already adapted to the market conditions which require high product variety and flexible production methods.

Evaluation of bargaining power of sellers. Affects of supply system on cost is the highest threat to the ceramic sector because sector is highly competitive and price sensitive sector. Changes in cost of raw materials and supplementary expenditures affect the prices, as a result it affects competitiveness. Even though, there is a plenty of raw materials in Turkey and the price of such inputs' prices is considerably cheap, fluctuations in the prices affect their competitiveness. Especially companies whose target markets are foreign markets are complaining about the value of Turkish Liras (they consider it too high), which relatively increases costs including transportation and other costs.

Suppliers mostly are able to fulfill their promises, but in some cases technical problems: such as gaps in the agreement, timing of delivery and storing materials are arising as factors which are reducing their effectiveness and competitiveness of the firms.

The lowest degree of threat comes from the length of contracts with suppliers. Generous amount of supplementary sources make ceramic firms powerful against to suppliers that is why suppliers prefer to extend the length of the contracts by themselves. In parallel to this, rivals' pressures on suppliers are quite low.

Conclusions and Summary

Policy-makers and decision-makers are needed to have correct information that suitable to analyze existing situation, as well as the sector's managers/owners. But, having (hundred percent) correct information which is also suitable for analyses is almost impossible. That is why academicians are trying improving existing theories or methods continuously. In terms of sector analyses, Porter's five forces model is one of the most respected models. Our study is trying to produce more suitable information about the Turkish ceramic sector in the light of Porter's five forces model.

Turkey, as a candidate country for EU membership, has to adapt and prepare its sectors for more competitive European market. For these reasons Turkish policy makers and the sector members should design better strategies which require correct information that suitable to analyze. This study might help them in this perspective.

Result of the study indicates that the size of labor force significantly affects the competitiveness of the firms, unlike the size of capital and turnover where there is no significant difference.

The other results of the study related to internal competitiveness of firms could be listed as follows: according to the labor force criterion, 56.3% of the firms can be considered as small firms; according to capital size criterion, 90.3% of the firms can be considered as small firms; and according turnover size criterion, 93.8% of the firms can be considered as small firms.

In the long term their target is to be the leader in the industry and they are trying to integrate both horizontally and vertically. There are already strong clusters existing and the numbers of clusters are rising.

They are more focused on international markets, 80% of the firms are managed by professional managers including 25% of them completely managed by professionals. Managers have at least undergraduate degree, 68.8% of ceramic producers' main target is to prove customers satisfaction.

Average capacity utilization rate is 85.9% which is relatively high in comparison to other sectors. Majority of the firms are using several information technologies heavily. But very few of them are using modern production systems, in this regard, they are a bit behind the international rivals. Quality management and quality assurance systems are used widely and there is an accelerated trend on research and development facilities which indicates that they are forcing to be more competitive.

In the second phase of the study, firms' perspectives on possible threats assessed in the light of Porter's five forces model. Some of the results are: there is a meaningful relationship between ceramic sector and its sub sectors in terms of labor force legal structure, management structure. Ceramic companies' primary threat perceptions are "product diversity" and "developments in R&D" which means that they have recognized the importance of R&D facilities for product development even though they do not invest in R&D facilities yet.

Perception of ceramic producers on intensity of competition can be interpreted as—there is a fierce competition. Because, they feel that sector is growing, there is a destructive competition between the rivals and there is an imbalanced power between the opponents. Availability of substitute goods and their penetration rates are considered as major threats for the ceramic producers.

Buyers of the sector have certain powers over the producers, which are coming into sight in price competition and quality. Suppliers' powers over the buyers are centered on price and its effects on costs, and numbers of the suppliers. This is because product price plays such an important role in competition which is forcing firms to focus on cost-oriented production.

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Corporate Social Responsibility Reporting^{*}

Katarzyna Hys, Liliana Hawrysz

The Opole University of Technology, Opole, Poland

The appearance of the idea of Corporate Social Responsibility (CSR) is a consequence of the works introduced by international organizations in order to establish the rules of sustainable development. Accordingly¹, we assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development—economic development, social development, and environmental protection—at local, national, regional, and global levels. CSR is a concept according to organizations, generally on a voluntary basis, pursues a policy which takes into account social, environmental, and local business. Otherwise, the World Business Council for Sustainable Development (WBCSD) defined CSR as²: the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community, and society at large to improve their quality of life. The publication will deal with the issues of CSR in Poland and in the world (selected issues) as well as the manner of reporting, with particular emphasis on the standards of the Global Reporting Initiative (GRI). The level of social reporting in the world and in Poland will be reviewed and analyzed on the example of registry reports. The authors through the study of literature and analysis of available empirical data presented in the world and national reports have made a preliminary analysis of reporting state in Poland. One has defined questions about the state of reporting in Poland in comparison to other countries in the world, the type of used reports and reporting standards. On the basis of analysis of the results, it was found that the level of reporting in Poland was very low. Works on reporting are mainly run by companies that operate in international markets that recognized in the CSR the arguments, which multiply their value compared with competing companies. For the other companies, the issue of CSR reporting is not well known. The issues of CSR should therefore be developed dynamically in Poland—and in this matter there is much to be done.

Keywords: Corporate Social Responsibility (CSR), GRI standard, reporting in Poland

Introduction

The idea of sustainable development and Corporate Social Responsibility (CSR) spreads throughout the world. Observation of global changes and trends in social responsibility issues allows to define thesis that these concepts in the life of many societies not only play an increasingly important role, but also become a part of tradition and determinant of culture.

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Katarzyna Hys, Ph.D., Doctor of social science (economics), Department of Production Engineering and Logistics, The Opole University of Technology.

Liliana Hawrysz, Ph.D., Doctor of social science (economics), Department of Economy and Management, The Opole University of Technology.

Correspondence concerning this article should be addressed to Ph.D. K. Hys, 75 Ozimska St., 45-370 Opole, Poland. E-mail: k.hys@po.opole.pl; l.hawrysz@po.opole.pl.

¹ Report of the world summit on sustainable development Johannesburg, South Africa (p. 1), August 26-September 4, 2002.

² World Business Council for Sustainable Development (WBCSD) (Retrieved December 20, 2011, from <http://www.wbcd.ch>).

In fact, there are no areas in which applying of the social responsibility concept is impossible. There are only challenges and obstacles (Anam, 2011a). An attention also should be paid to another issue. There are many different motives why the organizations apply the concept of sustainable development and social responsibility. Within the organization there are managers, who looking for the sources of competitive advantage, are ready to create new standards, new needs, or, by application of different concepts, to seek for advantage in places which are not the objects of observation and analysis of the other competitors (they look where no one else does).

Sustainable Development—A Base of Social Responsibility

It seems that, like everything, future generations will be those, who evaluate contribution and efforts bore at present in favour of sustainable development. Through the concept of sustainable development we mean such development, in which needs of present generation can be met without diminishing the chances of future generations to meet their needs (Brundtland, 1987).

The fact that the problem of evolution of the civilization perceived in the category of distant perspective has become the subject of interest to global organizations in a global scale, means that such a level of development has been reached, in which more attention is paid to the world of future generations. So we have a phase of realizations of needs at the level of transcendence (Maslow, 1943, 1954)³.

The process of globalization, the evolution of civilization, the increase of prosperity, and raise of people's awareness change their perception of their existence, as also change expectations towards environment, including the role, function, and responsibilities of companies.

Stakeholders, defined as individual people and groups of people, inside and outside the organization, who are interested in the results of their operations (Bielski, 2004), turned their expectations towards greater transparency of the organization. They expect that the duty of each organization is to inform about its activities in a broad aspects, including economic, ecological, legal, and social activities, which is the foundation of the concept of the CSR.

In the history of world's development of requirements for corporate social responsibility, great importance had national and later international standards for creating reports on the behaviours of the organizations. In 1960s of the 20th century, Netherlands and France had introduced requirements for entrepreneurs about domestic policy concerning employees. In 1980s, investment funds in the USA and Great Britain began to analyze companies in terms of their socially responsible behaviours. In 1990s, the idea of social report developed dynamically. A striking event was *the UN Conference on Environment and Development*, commonly known as the *Earth Summit in Rio de Janeiro*, Brazil in 1992. In 2002, during the *Earth Summit* the declaration for sustainable development had been accepted. It stated that "we accept collective responsibility for making further progress in the interdependent and mutually reinforcing pillars of sustainable development—economic development, social development, and environmental protection—and their strengthening at local, national, regional, and global level" (Rok, 2004).

³ The needs of transcendence are the highest level in the hierarchy of human needs, these are the spiritual demands. This is such a state, in which more important than one's own needs are the needs of other beings. Completely different issue is what level of evolution is represented by the individual members of society, since everybody is at a different stage of development. This means that there are people, who realize needs on the basic level (e.g., physiological, safety) and other, who realize needs on the higher level (cognitive, aesthetic, and transcendence).

Reporting the Corporate Social Responsibility Including GRI Standard

These events and many other initiatives⁴ have led to the formulation and further development of uniform rules (voluntary guidelines for the use) of reports' implementation, covering the issues of sustainable development in the form of corporate social responsibility (business, government, NGOs, non-profit organizations, and others).

In 2000, the first version⁵ of worldwide Global Reporting Initiative (GRI) standard had been developed. Its primary goal is to provide guidance for reporting results of taken by the organization actions in terms of sustainable development. GRI standard is a tool supporting the reporting process in organizations, for which it is strict but also universal: methodology, process of creating reports, and set of indicators that enable presentation of results gained by given organizations. In the world knowledge of interdisciplinary (allowing for analysis and presentation of activities including environmental, social, and economic aspects) GRI standard grows continuously, evidence of which is observed the increase of GRI use in the organizations, for reporting their activities (see Figure 1).

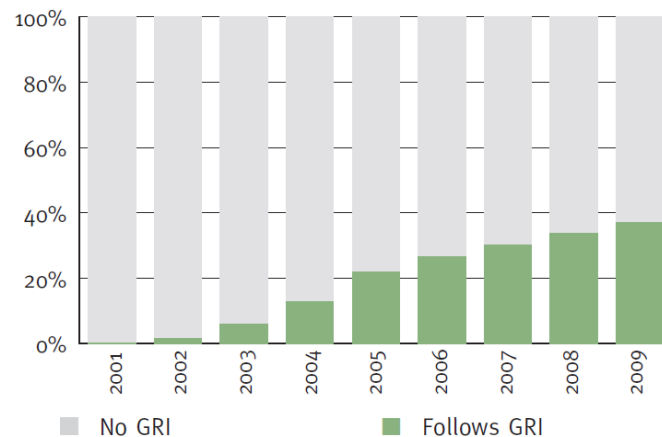


Figure 1. Uptake of GRI framework per year. Source: The CR reporting awards' 10—Global winners & reporting trends, April 2010, CRRA (p. 6).

One of the first in the world practical applications of the GRI standard in reporting various aspects of organizations' activities was recorded in 1999. In 2009, the level of GRI standard use reached value close to 40% and the trend maintained upward tendency. Therefore it can be anticipated that the importance of reporting with maintaining the GRI standard, which is gaining another masses of supporters, will continue to grow (see Figure 2).

⁴ (1) The first UN Conference on "the Human Environment" in 1972 in Stockholm, human rights to healthy environment have been identified; (2) World Commission on Environment and Development established by the UN in 1983, publishes the report "Our Common Future" in 1987; (3) In 1991, Business Council for Sustainable Development established by the International Chamber of Commerce (ICC) prepared the Business Charter for sustainable development; (4) UN Conference on "Environment and Development" or the Earth Summit in Rio de Janeiro in 1992; (5) Adoption of a new approach for sustainable development by the European Union under the "Fifth Action Programme for the Environment" in 1993; and (6) In 2002, Earth Summit in Johannesburg adopted a declaration on sustainable development.

⁵ GRI is a non-profit organization, based on the cooperation of a group of stakeholders, established in 1997 in Boston in the USA by the organization CERES and United Nations Environment Programme (UNEP). In 2002, GRI moved its headquarters to Amsterdam, where, at present, is its Secretariat. The first version of guidelines for the GRI standard was released in 2000, next versions appeared in 2002 (G2), 2006 (G3), and 2011 (G3.1).

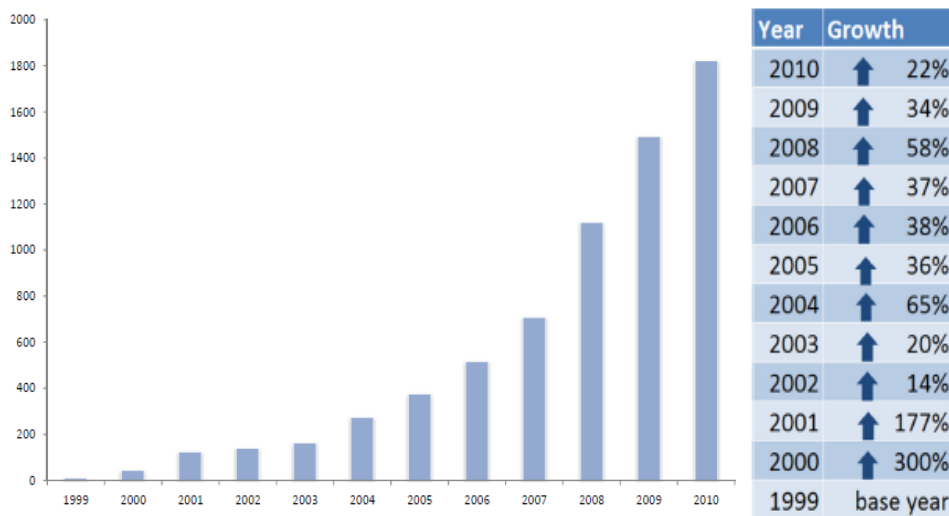


Figure 2. GRI reports 1999-2010. Source: A new phase: the growth of sustainability reporting, GRI's year in review, November 2010 (p. 7).

Figure 2 presents a quantitative increase in the number of social reports implemented in organizations through the GRI standard in the world. Record-breaking increase was recorded in year 2000 (300%). In subsequent years, also, though with less dynamics, a continuous increase of the publication of social reports using GRI standard can be observed.

Reports published by organizations vary in character (they are obligatory or not), encompass various areas of activities and business activities. The most common types of reports being developed by organizations are those including aspects:

- Social/Community;
- Philanthropy;
- Integrated (Annual Financial & Non-Financial);
- Sustainability (Environment/Social/Economic);
- Corporate Responsibility (EHS/Community/Social);
- Environment, Health & Safety & Community;
- Environment & Social;
- Environment, Health & Safety;
- Environment;
- Other (usually standards developed by companies individually, according to needs).

The dynamics used for the various types of reports is shown in Figure 3. In considered period, from 1992 to 2009, the most dynamically had changed the number of issued environmental reports. The numbers of reports are including environmental aspects underwent reduction to 20% in 2009 from the dominative role (ca 80%) at the beginning of considered period. The numbers of such reports underwent reduction in favour of reports covering reporting in a more complex, and then as a result of development—integrated way. Including and describing aspects of occupational safety, health, social aspects collective responsibility, economic, and non-economic conditions, up to forms focused on philanthropic activities and CSR.

It seems that the level of social responsibility creates attitudes and awareness of societies towards future taking into consideration next generations. Never before in the history of humanity, had such an extensive

works for the good of humanity, and such a great scale taken place. Reports are only a resultant of the actions revealed by the companies. The change, however, begins in people's minds, which can be influenced by appropriate arguments, for the change of behaviours and habits, creation of new practices that, in the future, might become foundation for activities and further traditions of every society.

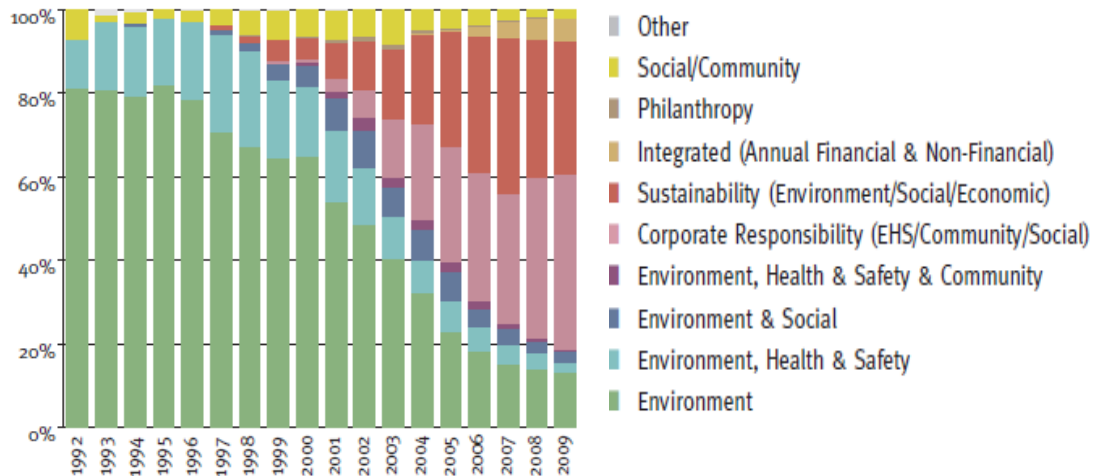


Figure 3. Global report output by “type” and year. Source: The CR reporting awards’10—Global winners & reporting trends, April 2010, CRRRA (p. 5).

To determine reporting of CSR, different terms are used, including: CSR reporting, sustainability reporting, or ESG reporting (environmental, social, and governance). Customarily, however, an expression sustainability reporting is used abroad (Anam, 2011b), while in Poland social reporting, reporting of the sustainable development or CSR reporting is used.

CSR report integrates information on company management, contains financial and non-financial data, including social and environmental issues directly related to its activities. Is an expression of the company's desire towards transparency of its activities and taking responsibility (called accountability) understood as fulfilling the obligation to provide information to stakeholders, to clarify them actions and decisions for which the company is responsible.

The Practice of Corporate Social Responsibility Reporting in Poland

The idea of reporting in Poland in the field of social responsibility does not have a long tradition. It might be said that it recently comes into being, so it is possible to observe the dynamics of its changes and direction of transformation. Reporting of the CSR is not obligatory in Poland, so many companies do not publish such reports; they do not see the need or necessity of gathering information in this range. In Poland in 2010 several publications had been brought out, which described activities, practices, and trends of Polish society development towards responsibility, including the report:

- Responsible Business in Poland. Good practices, FOB.
- CSR reporting in Poland 2010, CSRinfo.
- Social activities of Poles, CBOS.
- Readiness of Poles for cooperation, CBOS.
- Activity of Poles in civic organizations in the years 1998-2010, CBOS.

- Poles about development assistance, Department of Development Cooperation, Ministry of Foreign Affairs.

- Managers 500/Lider CSR, FOB, GoodBrand CEE.
- Responsible consumption among the Poles, Polish Green Network.
- Fair Trade in Poland. The present state and perspectives of development, Polish Consumers Association.

Besides available general or thematic reports, concerning diagnosis, analysis, and prognosis in the range of sustainable development in Poland, companies have possibility of publishing individual reports in the field of CSR. One of the websites, where reports can be registered and published, is a register of Polish reports of CSR running on the portal CSRinfo.org⁶. Moreover, information concerning CSR, provided by international companies in the form of reports, is available on the websites of Global Reporting Initiative or corporateregister.com.

Analysis of the Polish Register of Reports⁷ on sustainable development and CSR in the space of six years (from 2005 to 2011), helped to gather following information: Number of reports published by organizations, whose headquarters, or other entity (e.g., a factory) located in Poland is constantly growing (see Figure 4).

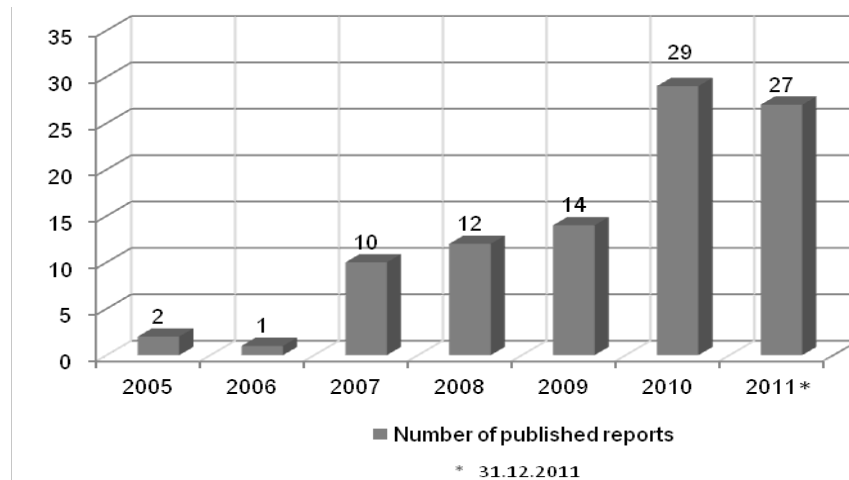


Figure 4. Number of published reports on sustainable development and CSR placed on the portal CSR.org.
Source: Own study based on publication placed in the register of reports on the portal CSRinfo.org.

Obtained results confirm that reporting on sustainable development and corporate social responsibility by Polish entrepreneurs is not conducted on a large scale, although the increasing trend is maintained (see Figure 5).

Obtained results allow to conclude that Polish companies realize sustainable business reports and CSR primarily use reporting standards developed on their own. However, in 2009, an increase of interest in the GRI standard and communication on progress (Global Compact)⁸ can be noticed to the disadvantage of standards, which are guidelines to give organizations.

⁶ CSRinfo.org portal is a communication and educational platform on corporate social responsibility and sustainable business. The portal has been created and is maintained by educational-consulting company CSR.

⁷ The register of sustainable development and social responsibility reports is published by organizations on the portal CSRinfo.org.

⁸ Reporting based on the principles communication on progress, is reflected by progress in implementing by the organization 10 principles of Global Compact. Global Compact is the world's largest initiative for corporate responsibility and sustainable development. It is important that acceding companies are required to report annually.

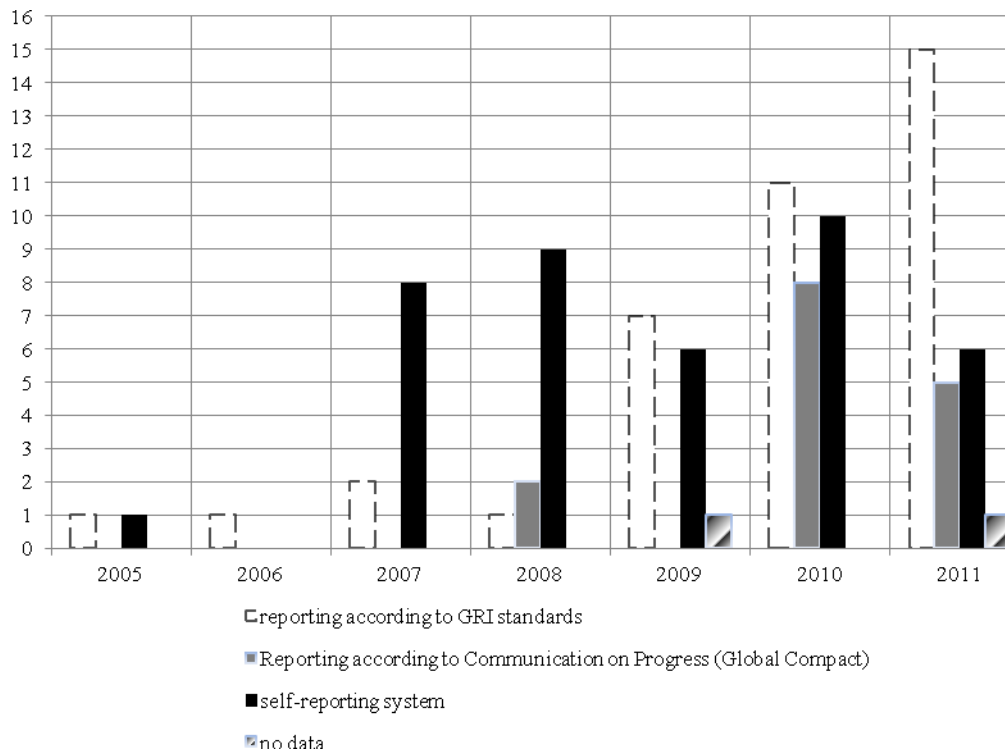


Figure 5. Types of standards used in reporting sustainable business and CSR. Source: own study.

Interesting is the fact that companies publishing reports use different nomenclatures for the type of issued report. Applied descriptions:

- social report;
- environmental report;
- ecological report;
- CSR report;
- social responsibility report;
- sustainable development report;
- report for the Global Compact;
- a review of activities report;
- a responsible business report;
- a social commitment report.

The statistical depictions of terms used for the reports are presented in Table 1. The vast majority of companies use the term “CSR Report” (54%). Then companies use the term “social report” and “report for the Global Compact” (13%). Below 10%, in the scale of published reports, companies use other terms.

In overall numbers, without a division into type of reporting standard, most reports had been published by organizations in 2010 (31%). Analyzing the number of published reports from previous years, in 2011, an increase was expected. Yet, the number was lower by 3 percentage points. However, it is necessary to be aware that companies have continuous access to the reports portal and it is likely that during early months of the next year, entries will be completed, which will change the total numbers of reports presented in 2011. Data for 2011 have been presented for current review.

Table 1

Indication of Reports' Types

	2005	2006	2007	2008	2009	2010	2011*	Number of published reports	Number of published reports (%)
CSR report	1	1	9	7	9	13	11	51	54
social report					2	5	5	12	13
report for the Global Compact				2		6	4	12	13
ecological report				3	2		1	6	6
a review of activities report	1		1		1	1		4	4
environmental report						2	1	3	3
social responsibility report						1	2	3	3
sustainable development report							2	2	2
a responsible business report							1	1	1
a social commitment report						1		1	1
Number of published reports by year	2	1	10	12	14	29	27	95	100
Number of published reports by year (%)	2	1	11	13	15	31	28	2	100

* 31.12.2011

Note. Source: own study; *: Own research.

In comparison to the dynamic changes in the issues of sustainable development and CSR, taking place in the world (see Figure 6), Poland is on the threshold of changes. It is expected that the development of values of sustainable development and social responsibility will grow rapidly, according to the trends that are described in particular countries and continents (see Figure 7). This means not only many challenges and opportunities, but also a lot of resistance and threats are encountered for the companies.

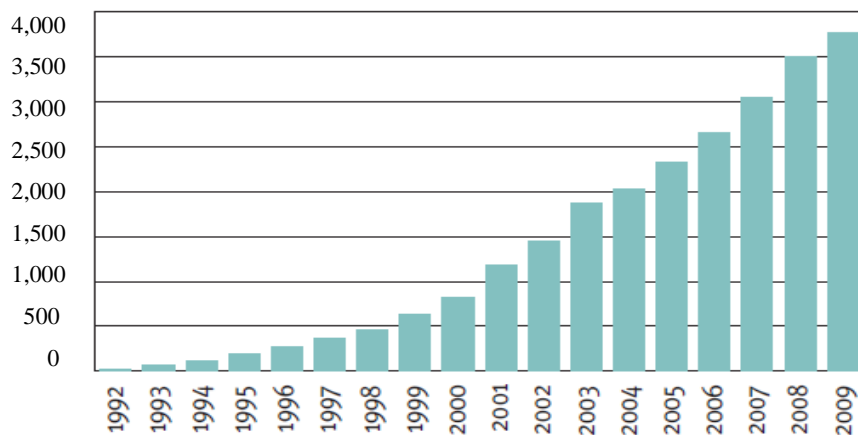


Figure 6. Global report output per year. Source: The CR reporting awards' 10—Global winners & reporting trends, April 2010, CRRA (p. 4).

Numerous studies published over the years allow for the observation of trends in the development of CSR reporting. Since 1992, a number of reports increased permanently. In 2009, nearly 4,000 reports were published and registered in the Corporate Register (reports database).

Analysing the levels of CSR reporting during given years on a given continent (by regions), a visible domination of Europe can be noticed. Nearly half of reports come from this part of the world, which means that

Europe can be considered as a motive power of reporting in the world. Moreover, the constant upward trend can be observed in North and Central America and Asia. In connection with the dissemination of mandatory reporting in regions⁹ (or countries)—rapid increase of the number of reports in other countries is expected.

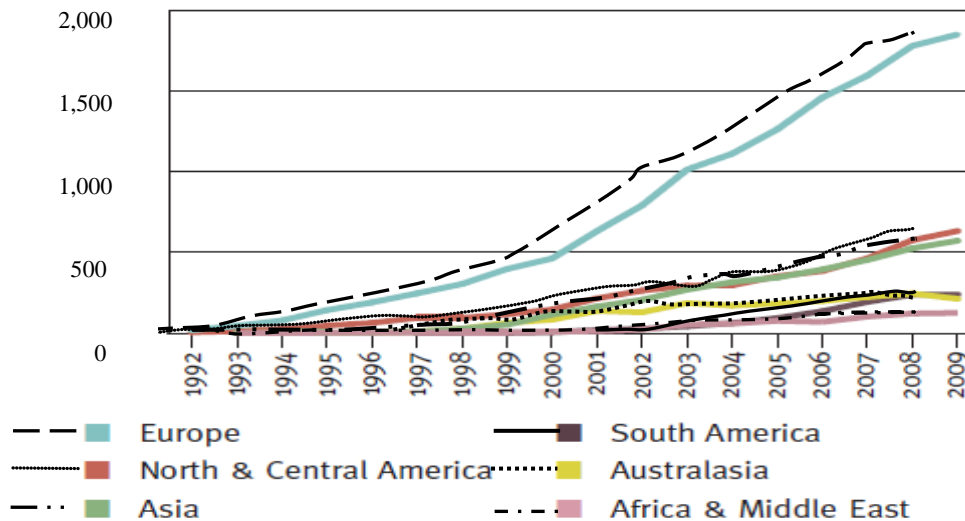


Figure 7. Reporting output by year, by region. Source: The CR reporting awards'10—Global winners & reporting trends, April 2010, CRRRA (p. 4).

Conclusions

Observation of changes and global trends in application and use of the CSR reporting allow to infer that the development of societies will be based on the CSR principles. Societies expect that companies will take into account their needs and expectations. They expect respect for their fundamental needs (though not everywhere and not for all), ethic and moral laws as also taking actions on a large scale in social and ecological areas taking into account all interested parties.

It seems that this development goes in the right direction, however reflection can be raised by the matter if the ideas survive the so-called test of time. Will the declared values be met? Will there be enough arguments to implement the concept of the CSR in real conditions? For ordinary people, motives of use of the Social Responsibility principles are of secondary importance. Of the first rank are noticed and recognized, benefits also observe the values of organization's activities in the meaning of CSR. In a global sense, an interesting motivator of activities for people is improvement of quality of their life, which determines development and progress of societies, and thus enables the evolution and transformation of the enterprise.

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The Human Capital Valuation in IC Paradigm: An Empirical Proposal

Domenico Celenza, Fabrizio Rossi

University of Cassino and Southern Lazio, Cassino, Italy

Intellectual Capital (IC) is an important source of value for companies and in recent years has been the focus of attention for scholars. In a knowledge-based economic scenario, the role of human resources has been reallocated over time in the theory of the firm to a higher degree than in the past. The worker's labor and management have been transformed as a result of the growing attention to the intangible assets held by each business system. In knowledge economy, manufacturing industries are investing more and more in the processes of scientific and technological research in order to introduce new knowledge in production systems and ensure its survival by creating business value. The competitive firm invests in new productive ideas through scientific and technological research, the human factor and services. The knowledge worker, at every organizational level, has the knowledge that allows the organization to be competitive and deal with the complexity of the environment by creating intellectual added value. The traditional factors of "old economy" based on physical assets has been replaced, or at least reinforced with the belief that the "new economy" takes its steps mainly through IC. The aim of this paper is to examine the methods of evaluation of human capital and to provide an empirical methodology proposed by using an intersection logic concerning the increase in value of the three components of intellectual capital. In particular, the proposed methodology consists in the construction of an adjusted multiplier based on a simplified version of VAICTM capable of expressing a direct relationship with the Return on Equity (ROE) from the perspective of creating value for shareholders based on the dynamics of the company's performance compared with that of industry.

Keywords: human capital, intellectual capital, evaluation method, Value Added Intellectual Coefficient (VAICTM), knowledge based firms

Introduction

Intellectual Capital (IC) is an important source of value for companies and in recent years has been the focus of attention for scholars. The relationship between physical assets and human assets, seen as a complementary relationship, is also emphasized in the work of Grossman and Hart (1986), Hart (1995) and Hart and Moore (1990, 1994).

In a knowledge-based economic scenario, the role of human resources has been reallocated over time in

Domenico Celenza, Ph.D. in Business Economics, Researcher in Business Economics, Department of Economics and Law, University of Cassino and Southern Lazio.

Fabrizio Rossi, Ph.D. in Management Engineering, Adjunct Professor of Economics and Business Organisation, Department of Electrical and Information Engineering, University of Cassino and Southern Lazio.

Correspondence concerning this article should be addressed to Fabrizio Rossi, University of Cassino and Southern Lazio, Via G. Di Biasio 43, Cassino, Italy. E-mail: f.rossi@unicas.it.

the theory of the firm to a higher degree than in the past. The worker's labor and management have been transformed as a result of the growing attention to the intangible assets held by each business system. In knowledge economy, manufacturing industries are investing more and more in the processes of scientific and technological research in order to introduce new knowledge in production systems and ensure its survival by creating business value. Service companies, however, are witnessing a significant increase in competitiveness and productivity in the service sector which benefits from the simplification of work, the increase of the importance of IC in order to achieve a competitive differential in the market (Trequattrini, 2008), and from the light structure of the company which rents the assets necessary to perform the task.

The competitive firm invests in new productive ideas through scientific and technological research, the human factor and services. The knowledge worker, at every organizational level, has the knowledge that allows the organization to be competitive and deal with the complexity of the environment, creating intellectual added value (Prandstraller, 2009; Zanda, 2009). The knowledge worker, in this view, is similar to the homo empathicus. Rifkin (2010), as the sharing of knowledge requires an empathic process that moves from sociality and from the sense of collaboration, both innate in humans. At the same time, the knowledge worker is identified with the homo faber (Rifkin, 2001), that is, the man who produces by sharing his own knowledge for collective purposes. According to Drucker (2003), the success and survival of a company depends on the performance of knowledge workers as the company is at the service of workers who have a distinctive means of production: knowledge. For these reasons, knowledge workers are "...social actors who possess the means of intellectual production regardless of whether they are employees, professionals, unemployed or underemployed, regardless of whether they are engineers, technicians, designers, artists, or rather employed in routine jobs" (Grazzini, 2008). In this perspective, knowledge workers, whether they are skilled workers or managers, are knowledge workers, each possessing specific skills. Basically it emphasizes the importance of the particular relationship and complementarity, since the company is a sum of assets (Moore, 1992). The traditional factors of the "old economy", based on physical assets, have been replaced, or at least reinforced with the belief that the "new economy" takes its steps mainly through IC.

The aim of this paper is to examine the methods of evaluation of human capital and to provide an empirical methodology proposed by using an intersection logic concerning the increase in value of the three components of intellectual capital.

In particular, the proposed methodology consists in the construction of an adjusted multiplier based on a simplified version of VAICTM capable of expressing a direct relationship with the Return on Equity (ROE) from the perspective of creating value for shareholders based on the dynamics of the company's performance compared with that of industry.

Literature Review

Several empirical studies demonstrate the impact of intangible assets both on the company's financial performance and on stock returns. Aboody and Lev (2000) showed that the impact that generates IC on current and future operating earnings is very strong. With reference to the chemical industry, for example, they show that the increase in R&D investments doubled operating profits.

Bornemann, Knapp, Sixl, and Schneider (1999) found that firms that manage their IC more effectively were able to secure a very strong competitive advantage over other companies and perform better than them.

There is no single definition of IC. Stewart (1997) for example, defined IC as the "packaging of useful

knowledge". Petty and Guthrie (2000) instead give IC a much more incisive meaning, considering it instrumental both in determining the value of the company and improving the economic performance of a nation.

In the literature, there is also a widely accepted idea of the existence of a strong relationship between IC and the market value of firms. For example, Lev and Zarowin (1999), Lev (2001), Lev and Radhakrishnan (2003) have focused on the gap between the market value and book value of companies while trying to investigate the invisible values that do not appear in financial statements. More generally, there have been hypotheses about the weight that IC can have on the value of the company and on the need to consider not only the financial variables but also include the value of IC. Edvinsson and Malone (1997), indeed, give the value of IC the difference between the market value and book value of the company.

Pulic (2000) offered an additional measure of the value of IC through the Value Added Intellectual Coefficient (VAICTM) which includes both physical capital and human and structural capital.

Firer and Williams (2003) tested the VAICTM but could not find a strong relationship with the company's profitability.

On the contrary, Chen, Cheng, and Hwang (2005) found that IC has a very strong impact on the market value and performance of firms. In particular, investments in R&D can provide additional information on structural capital and generate a positive effect on firm value and profitability.

Kamath (2008) however does not see any relation between IC and the traditional performance measures such as profitability and market value. Even Ghosh and Mondal (2009), after investigating 80 companies operating in the pharmaceutical and information sector and testing the relationship between IC and company performance, found that market value and productivity are not significantly related to IC, however, they pointed out that IC is a good predictor of productivity.

A different approach to the traditional evaluation methods is proposed by Cricelli and Grimaldi (2009). The two authors, through the Hierarchical Assessment Index (HAI) model, point to the identification of new drivers that can have a significant impact on the various components of IC.

Venugopal and Subha (2012) examined 41 firms producing software in India during the period 2000-2010 and found that although the efficiency of capital employed and the efficiency of structural capital are both significantly and positively related to financial performance, there is no direct relationship between the VAIC as an indicator for measuring IC, and financial performance. The authors emphasize, however, that "the model which studied the relationship between components of VAICTM and financial performance explained the firm's value better" (p. 130).

Evaluation Methods

In general, the methods of IC evaluation can be divided into direct and indirect. The first is based on the measurement of the value of intangible assets and indirect methods aim at the measurement of IC through rates of return and the market value of the company. However, like in all the estimates of the value of the company, the choice of model measuring IC varies according to the reference context and analysis perspectives and more precisely according to the purpose, situation, and audience of users (Sveiby, 2001).

In theory, the estimation methods of IC are divided into two categories: analytical and synthetic.

The first allows the determination of the economic value of intellectual capital as the sum of its components: human capital, relational capital, and structural capital. In formula:

$$IC = HC + RC + SC \quad (1)$$

where:

IC represents the economic value of intellectual capital; HC, RC, and SC are, respectively, the economic value of human capital, relational capital, and structural capital.

The synthetic method, however, relates the IC to the concept of goodwill, which is determined as the difference between the value of the economic capital of the holding company of intellectual capital being estimated and its adjusted net assets. In formulas:

$$IC = W - K' \quad (2)$$

where:

W is the value of the economic capital of the holder of intellectual capital;

K' is the adjusted net assets of the company.

In what follows, we will analyze the main methods of estimating intellectual capital according to the analytical and synthetic methods.

Human capital is identified with the people who are part of the organization, or with their skills, experience, motivation, knowledge, intellectual skills, which are used in the management of the company.

Human Capital Evaluation Methods

Teaching and practice have provided a classification of methods for estimating human capital, dividing them into qualitative methods and quantitative methods.

The first are those that do not care about identifying a monetary value for human capital but identify the variables and relationships that can determine their increase in value.

The latter, however, tend to identify the economic value of human capital and can be classified into methods based on costs, methods based on economic profit and empirical methods.

The former, which are inspired by Human Resource Accounting (HRA), can be classified as follows:

- Methods based on historical cost;
- Method based on opportunity cost;
- Method based on replacement cost;
- Economic income methods.

In the original formulation, the method based on historical cost is based on the identification of all the costs which are necessary to purchase, select and train human resources and the subsequent capitalization at a rate equal to inflation for the period of evaluation.

The subsequent formulations of this model have led to include in total capitalized costs also fringe benefits and all the costs that the company incurs to acquire and retain staff.

It was observed that the wording of the historical cost method is a moment when the conceptualization of labor as an operating cost is surpassed in order to consider it instead as a use of funds assets (Zanda & Lacchini, 1994).

The same authors, however, identify a series of critical issues in the application of this method, since the appreciation of the historical cost does not provide information on the efficiency and effectiveness of the style of direction and, therefore, does not allow to have cognizance of any inefficiencies due to an inefficient management style and they emphasize the difficulty over time of finding and rating and reviewing costs.

Methods based on the opportunity cost subtend the idea that human resources can be contended within an

organization and, therefore, are assigned in the organizational centers that are willing to pay the highest price in terms of budget.

The replacement cost method consists in identifying the value of human capital defined as the total value of the hypothetical costs that a company would incur if it were to replace all employees.

The economic-income methods are characterized by an attempt to estimate the value of the share of revenue or services reasonably attributable to labour in future years.

An initial formulation provides that the value of human capital can be made equal to the sum discounted at a special discount rate of the expected annual income of the person for the period determined for the duration of the employment relationship.

Another model involves the possibility that the value of human capital is made equal to the product of two factors:

- The present value of expected salaries to be paid to workers for the following five years discounted at the company ROI;
- The efficiency index that measures the company ROI in relation to the industry average ROI, calculated as a weighted average of the last five years, giving more weight to more recent years.

The application of these methods, however, does not seem to be free from a number of application pitfalls, in fact, the variables are necessary for the operation of such models take into account the risk of a high level of subjectivity in the formulation of the assumptions underlying the estimation process.

It is necessary to point out that these methods may, however, be subject to the application of certain adjustments, including for example those relating to the mortality rate of workers. Thus, it has been duly pointed out that the probability of a decline over time in the value of the benefit must be appreciated by entering a specific risk component in estimating the discount rate in addition to the risk free rate and the risk premium.

One of the approaches used for the determination of the discount rate is the so-called build up approach:

$$i = i_1 + i_2 + scr + md \quad (3)$$

where:

i is the discount rate;

i_1 is the risk-free rate, or the rate of return on substantially risk-free investments. This rate is calculated on the basis of the average yield (historical or future) of government bonds in the medium/long term, as it is believed that these securities represent a reliable proxy for the return on a risk-free asset;

i_2 is the premium risk;

scr is a higher rate due to the fact that investing in a specific activity, rather than in a securities portfolio, does not allow the elimination of the diversifiable risk (specific company risk). This higher rate is likely to cover specific risks of the business, associated with its financial structure, type of activity, places where it is exercised, the concentration of customers, and so on;

md is the increase in the rate applied to non-listed companies due to the fact that their actions are taking into account marketability risks that are higher than those of listed companies.

In estimating the discount rate, the latter two components are not computed because of the subjectivity inherent in their determination.

Thus, the rate of fair return on equity is equal to the sum of the risk-free rate and the risk premium.

The estimate of the risk premium can take place through different methods, among these the capital asset pricing model (Sharpe, 1969) is of particular importance, according to this model the risk premium is determined by multiplying the beta-factor (which is a measure of operational and financial risk of the business) by the average premium of the market, given by the difference between the expected mean return of the stock market and the return on risk-free investments. In formula:

$$i_2 = \beta \times (R_m - i_1) \quad (4)$$

where:

i_2 is the risk premium;

β is the beta factor;

R_m is the average market return;

i_1 is the risk free rate.

If the business is not listed, it is not possible to use the beta-factor, so the average beta of a sample of companies comparable with the business being valued will be used¹.

The estimate of the rate cannot be separated from the compliance with the principle of consistency between flows and interest rates. In this sense, if levered cash flows (nominal or real) are to be discounted, they should be discounted at the rate of return on the equity capital (nominal or real), on the contrary, if unlevered cash flows (nominal or real) are to be discounted, they will be discounted at the weighted average cost of capital i_{wacc} (nominal or real).

Empirical methods tend to give human capital a value equal to the product of the total annual cost and a variable coefficient within a range of values which in the most conceptually articulated formulation (Zanda & Lacchini, 1994) varies between 0.33 and 2.5.

In formula:

$$W_{c.u.} = Mult \times TPC \quad (5)$$

where:

Mult. represents the value of the multiplier that, in general, varies from 0.33 to 2.5 (Zanda & Lacchini, 1994);

TPC is the total annual cost of labor inclusive of the accrued TFR.

The two authors identified as determinants of the multiplier the quality of research carried out in the company, the complexity of the financial problems of marketing and management style.

From an examination of the most commonly used valuation methods, it is possible to conclude that, although, as authoritatively observed, there is no optimal human capital valuation method, and therefore the choice of methodology must be carried out using a contingent approach in relation to the purpose of the estimate, the nature of the services and information available, it is possible to attempt to make some considerations regarding the identification of some corrections to be applied in the case in which it is necessary to proceed to the evaluation of contributions of work in cooperative enterprises or to perform the evaluation of their human organization.

¹ Even if the CAPM is the most widespread model in different empirical contexts its value has been questioned by multifactorial models and in particular by the three factor model (Fama & French, 1993). With regard to the empirical verification of the CAPM on the Italian stock market see the contribution of Bruni, Campisi, and Rossi (2006).

Valuation of Structural Capital

The estimate of the economic value of capital structure involves the use of two alternative approaches: the cost-based approach and the value-based approach.

The first is based on the historical or reproduction cost depending on whether the economic value of structural capital derives, respectively, from the costs incurred for its creation or from the costs that a potential buyer would incur to develop technological solutions similar to those being estimated.

Historical cost includes expenditure incurred by the company for the activities of invention and application of technology, although it is not easy to apply this method, as there are many common costs incurred in the various research centers and the sum of the costs is not sufficient to give adequate information to potential investors.

The cost of reproduction represents all the costs which are necessary to realize a utility similar to the technology being estimated. The limitations related to the application of this method are related to the difficult identification of replacement knowledge in terms of utility to those available on the market and to the fact that the costs incurred for the creation of this technology cannot assure the same results.

The value-based approach assesses the future economic benefits, namely, the contribution that such technology can make to the profitability of the company, although it is difficult to define the flow of expected economic benefits. In fact, the future income differentials should arise from the difference between the economic benefits obtained prior to the use of the new technology and economic benefits that will result from the introduction of the same. Another problematic is the choice of the discount rate for future benefits and the definition of the finite life of technology. The latter ends at the moment it becomes obsolete or is imitated by competitors. Finite life is extended according to the protection that a patent provides for the new technology.

Technology valuation, carried out by discounting the flow of future benefits discounted at a rate that includes the pay for pure capital investment and risk, is a theoretical value of general, fair, and neutral exchange that satisfies the buyer and seller, who will find the sale or purchase of the property reasonable.

The exchange value of the technology is represented in the following formula:

$$W_x = \sum_{s=1}^k C_s (1+i)^{-s} \tag{6}$$

where:

W_x is the value of the technology to be researched;

C_s is the flow of benefits or competitive differentials brought about by technology to the firm in k years;

i is the discount rate of the flow of benefits that takes into account the risk and return for the pure capital investment.

In this regard, some propose the estimate of the economic value of basic research through a value-based approach according to insurance logic. In this direction, it is necessary to take into account the demand that perceives the need for new knowledge, the possibility of basic research to solve laboratory problems, in the course of the project, the benefits resulting from the sale of each product unit after the technology development.

The evaluation of basic research can be represented in the formula as follows:

$$Y = \sum_{s=1}^k p_i (\Delta R_{i\% - m})_{r\% - t - m} \tag{7}$$

where:

Y = value of basic research project with k alternatives of employment;

k = markets interested in the research in question;

P_i = probability of exceeding the limits that do not allow the use of knowledge on market i ;

i = minimum net revenues, estimated with reference to market i ;

$r\%$ = discount rate;

m = estimate of the time required to operationalize the project on market i ;

t = period of time over which it is assumed the cash flows generated from market i can be extended.

The Valuation of Relational Capital

Relational capital is identified in the trust relationships that are established between the company and the company stakeholders: this trust comes from the reputation which the company has acquired over time. The elements that distinguish relational capital are the company's reputation, trademark, image and so on.

The corporate trademark is an intangible item that can be evaluated independently with methods used for the evaluation of other intangible items.

From a qualitative point of view, valuation methodologies consider the ways in which the relationship between the company and its stakeholders is managed, from a quantitative point of view, evaluation methods take into account the value of meaningful relationships that the company establishes with the external environment.

Quantitative methods, in particular, are divided as follows:

- Methods based on empirical indicators;
- Methods based on costs;
- Financial methods;
- Economic-income methods.

The methods based on empirical indicators, complying with the principles of rationality and generality, consider the data and information found on the market: examples are the prices paid for trades that have actually taken place. The indicator corresponds to a percentage or to a multiplier applied to a budget quantity taken as a reference (e.g., revenues, net income, etc.).

The use of such methods is recommended where the application of other methods is not practicable. In fact, these are lacking in terms of rationality since they lack a theoretical basis and in general do not seem to prescind from the interests of the parties involved in the interaction.

Included among the empirical methods internationally recognized, there is the Interbrand method: the value of the trademark is determined by multiplying the flow of income that the same is able to generate for a given multiplication factor.

The multiplier expresses the potential future earnings of the trademark and can be estimated through a detailed analysis of some critical factors that give strength to the trademark: leadership, stability, target market, internationality, trend, flexibility, marketing support, and legal protection.

The methods based on cost estimate, in terms of costs incurred, the future economic benefits that can be generated by the asset being valued.

According to the cost configuration, it is possible to identify some estimation methods based on historical

cost, increased value cost, replacement or reproduction cost, and cost of loss.

The historical cost is represented by all costs directly attributable to the creation of the trademark and corporate image, namely, all the factors that contribute to creating trust in the company: the cost of project design, development, registration, life maintenance, penetration and the propagation of the trademark on the market.

The historical cost does not consider the changes in the purchasing power of the currency and other economic phenomena which may represent the current value of a business asset.

Revalued historical cost, in fact, identifies the value of the brand by the re-expression, at current prices, of the costs incurred in the past to develop the resource, and not calculated among the assets on the balance sheet. The value obtained represents the cost that should be incurred today in order to have an intangible equivalent to the one purchased in the past.

The cost of reproduction is represented by the sum of the charges which, at the time of the assessment, would be necessary to incur in order to obtain a trademark with the same characteristics of the existing one and having the same reputation on the market.

There are two procedures that allow the determination of this value. The analytical procedure evaluates separately all the elements necessary for the estimate, such as, for example, unit prices, the time horizon over which to distribute the financial resources, the minimum rate of return required by the market for investments of the same risk level: The synthetic process is expressed in the following formula:

$$V_r = MT * C \quad (8)$$

where:

V_r is the cost of "as new" replacement;

MT is the capital ratio (or multiplier) in years. It indicates the duration of the process of rebuilding the brand and varies in direct proportion to its value;

C is the cost configuration relative to the resources to be allocated to the formation of a brand equivalent to the estimated one.

The method based on the cost of loss has characteristics that are similar to the economic income methods: the cost of loss can be quantified by the difference between the income of the company's products using its own trademark and what it would achieve without it.

In the case of the trademark, the use of these methods involves the determination of its value according to the amount of past investments and not the future utility of the asset and the expected income.

The financial methods are based on discounted cash flows that the trademark can generate in future years.

The difficulties related to the precise identification of future cash flows that the trademark will be able to generate has induced some writers to prefer economic income methods, which identify the trademark value according to the amount that it provides to the overall profitability of the company. In particular, there is the discounting, for a given number of years, of the differential result obtained from the sale of a product with the trademark and the result obtained from the sale of a product without the trademark which is being valued.

The economic income method can be applied in view of the seller and buyer using the following formula:

$$W_m = R_1 \cdot v + R_2 \cdot v^2 + \dots + R_n \cdot v^n \quad (9)$$

where:

W_m is the value of the trademark;

$R_1, R_2 \dots R_3$ is the expected differential income over time;

$v, v^2 \dots v^n$ are the discount coefficients of the expected differential income;

n is the number of years of expected useful life of the trademark, it expresses the life cycle of the trademark, its protectability and the predictable evolution of the market.

By substituting the above formula with the average future income “R”, there is the formula for the present value of n years:

$$W_m = R \cdot a_{n-i} \quad (10)$$

Therefore, it seems necessary to note that in terms of the rationality of the evaluation method, it is preferable to use methods based on flows represented by the adjusted operating income of the value of the rebates.

In order to overcome the problems related to compliance with the requirement of independence or neutrality of the parties involved in the negotiation, it is possible to discount the differential incomes calculated on the basis of royalties.

The method of royalty determines the value of the trademark using the royalties: these represent data expressed by the market which take into account the characteristics of the trademark, the reference business sector and the characteristics of the market.

The value of the royalty ranges between 2% and 20% of the sales revenues in relation to the reference sector and is applied to future normal revenues achieved by the company for the sale of products covered by the trademarks being estimated, over a period between five and 20 years.

The formula for determining the economic value of the trademark is as follows:

$$W_M = \sum_{t=1}^n \frac{F \cdot r}{(1+i)^t} \quad (11)$$

where:

W_M is the value of the trademark;

r is the royalty;

F_t is the normalized value of the expected revenues;

N is the finite life of the intangible asset;

I is the discount rate.

The Synthetic Method for the Evaluation of Intellectual Capital (IC)

The synthetic method considers the IC held by the company coinciding with goodwill.

The formula will be:

$$\text{Intellectual Capital} = \text{Goodwill} = W - K' \quad (12)$$

where:

W is the value of the economic capital of the holder of intellectual capital;

K' is the net worth of the firm, adjusted to reflect the restatement to fair value of the assets and liabilities that compose it.

The adjusted net equity is derived from the annual financial statements, or by the appropriately adjusted net accounting equity:

- It is necessary to identify the assets and liabilities of the company, excluding assets related to intellectual capital and which are registered in the financial statements;
- These elements are evaluated analytically according to their current values;

- The adjusted net assets are determined.

For the estimation of W , to determine the economic value of goodwill, direct and indirect methodologies are used. These methods are based on quantities which are gathered from the market and are divided into:

- Direct methods in the strict sense: which are used to determine the value of economic capital based on the prices expressed by the market for the company in question (if listed), or on prices determined in extraordinary transactions for companies similar to the company being valued;
- Direct methods based on empirical multipliers: the value of the economic capital of the company is equal to the product between a market multiplier and a quantity of expression of the economic value of the share capital of the company.
- Direct methods in the strict sense can be further divided into two categories, depending on whether or not the company to be evaluated is listed on a stock exchange. In the first case, the economic capital of the company is calculated using the following algorithm:

$$W = \sum_{i=1}^n P_i \times m_i \tag{13}$$

where:

W is the firm value;

P_i is the market price of a type “ i ” share (common or preferred share);

m_i is the number of type “ i ” shares.

In the second case, the company is not listed and the value of its economic capital is estimated as the simple or weighted arithmetic mean of the economic values assumed by a number of companies comparable to the one being valued. In formula:

$$W = \frac{\sum_{i=1}^n W_i^s \times p_i}{\sum_{i=1}^n p_i} \tag{14}$$

where:

W is the firm value;

W_i^s is the economic value of the firms belonging to the sample, calculated on the basis of the “last prices” of transactions dealing with firms similar to the target firm;

p_i are the “weights” given to each valuation.

The methods discussed up to this point also differ according to whether they are based on the criterion of the so-called equity approach to valuation or the entity approach to valuation.

In the case of direct methods on the equity-based approach to valuation, the estimate of economic capital is carried out in a direct way as follows:

$$\left(\frac{W}{k} \right)_T = \left(\frac{P}{k} \right)_s \tag{15}$$

where:

$(W/k)_T$ is the multiplier of the company being estimated, given the relationship between the economic value of target firm (W_T) and a quantity (K_T) which expresses firm value (Net income, cash flow, revenues, etc.);

$(P/k)_s$ is the market multiplier of a sample of companies similar, in quality and quantity, to the one being

valued, which is constructed by comparing the market price of such firms (P_s) with the same quantity used for the calculation of the multiplier of the target firm (k_s).

The value of economic capital is determined as follows:

$$W = \left(\frac{P}{k} \right)_s \times k_T \quad (16)$$

This formula implies the need to estimate:

(1) k needs to determine the multipliers of the companies included in the sample of companies similar to the one being valued;

(2) the value attributable to quantity k_T .

There are many parameters (k), for example, net income, operating income, cash flow, but the multipliers used very frequently in evaluation are:

- The price/earnings (P/E). The quantity k coincides with the normal expected average profit;
- The price/cash flow (P/CF). The denominator is the levered or unlevered cash flow;
- The price/book value (P/BV). The denominator of the multiplier is represented by net assets.

The choice of parameters is performed according to the purpose of the evaluation and the information provided.

The ways in which the quantity k_T is estimated depend on the choices made for the definition of the multiplier: it can be represented by the net income (earnings), by cash flow, by net equity (book value) or by a quantity that can represent the value of the company being valued.

The practice of valuation suggests the use of medium-normal variables, purified of extraordinary components for each year in question and re-expressed in currency related to the valuation date using an appropriate inflation rate.

Direct methods based on the entity approach to valuation, however, estimate the value of the economic capital in an indirect manner by subtracting the market value of financial debts from the economic value of assets (firm value). The equality of reference is the following:

$$\left(W + \frac{D}{k} \right)_T = \left(P + \frac{D}{k} \right)_s \quad (17)$$

where the following is added to the known symbols:

D_T is the market value of the financial debts of the target company;

D_s is the market value of the debts of the sample of comparable firms.

The economic value of the activities of the firm (firm value: $W + D$) is obtained using the following formula:

$$\left(W + D \right)_T = \left(P + \frac{D}{k} \right)_s \times k_T \quad (18)$$

The economic value of equity is determined by deducting the total debt it incurs from the value of the economic activity of the valued firm, in formula:

$$W_T = \left(P + \frac{D}{k} \right)_s \times k_T - D_T \quad (19)$$

The application of the formula involves the need:

(1) to define the value of the relationship between firm value (the sum of the market price of equity P , and the market value of debt D) and the quantity k identified for the valuation of a sample of businesses similar the valued company;

(2) to determine the value to be assigned to variables k_T and D_T .

The multipliers most commonly used in valuations for the definition of the parameter k are:

- the firm value/earnings before interest and taxes (FV/EBIT), where k is represented by Earnings Before Interest and Taxes (EBIT);
- The firm value/earnings before interest, taxes, depreciation and amortization (FV/EBITDA), where the parameter k coincides with the Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA).

To estimate the value attributable to the quantity k_T , valuation practice suggests the use of values of average expected normal EBIT and EBITDA_T referring to a period of three/ten years (historical or future).

The economic capital, in this case, is determined as follows, depending on whether the EBIT or EBITDA_T is used:

$$W_T = \left(P + \frac{D}{EBIT} \right)_s \times EBIT_T - D_T \tag{20}$$

$$W_T = \left(P + \frac{D}{EBITDA} \right)_s \times EBITDA_T - D_T \tag{21}$$

The application of the direct methods to the evaluation of goodwill undergoes obvious conceptual limits that are related, on the one hand to the lack of comparable listed companies.

A greater rationality is present in indirect methods that allow to identify configurations of income or financial flows consistent with the nature of the firm’s performance.

The indirect methods of valuating economic capital are classified according to the variables on which they are based on: flow quantities, stock quantities or stock-flow quantities.

Indirect methods based on flow variables are divided into:

- Financial methods;
- Income methods;
- Methods based on distributable dividend flows.

Among the financial methods, there is the one based on the “total available cash flow”. In formula:

$$W = ci + f_1v^1 + f_2v^2 + \dots + f_nv^n + f_nv^n + f/i v^n \tag{22}$$

where:

W is the firm value;

ci is the amount of cash at the time of valuation;

f_1, f_2, \dots, f_n are the available monetary flows generated by the firm of the years considered;

f is the average expected cash flow;

v^1, v^2, \dots, v^n are the discounting factors based on cost of capital (i).

Income methods are based on the assumption that the economic value of a business is equal to the present value of expected income flows during the finite life of the business.

In formula:

$$W = R_1v^1 + R_2v^2 + \dots + R_{n-1}v^{n-1} + R_nv^n + R'_n/i v^n \tag{23}$$

where:

W is the firm value;

R_1, R_2, \dots, R_{n-1} are the income flows that the firm is capable of generating;

R_n is the normalized expected income;

$v^1, v^2, \dots, v^{n-1}, v^n$ are the discounting factors in relation to a predetermined interest rate (i).

The method based on the distributable dividend flows are based on the assumption that the economic value of the company is equal to the present value of all future dividends earned by those who invest risk capital in the company. In formula:

$$W = D_1v^1 + D_2v^2 + \dots + D_{n-1}v^{n-1} + D_nv^n + D_n / i v^n \quad (24)$$

where:

W is the firm value;

D_1, D_2, \dots, D_{n-1} are the dividend flows that the company is able to distribute;

D_n is the expected normal dividend;

$v^1, v^2, \dots, v^{n-1}, v^n$ are the discounting factors in relation to a predetermined interest rate (i).

Methods based on flow variables require the determination of expected cash flows and the identification of the discount rate.

The methods used for estimating future cash flows are generally:

- (1) statistical methods;
- (2) method based on planned results;
- (3) innovation method.

Statistical methods are based on statistical techniques applicable to the historical data of the firm, relating to the last three to five years. They are used to evaluate companies which have been on the market for several years. The steps followed for the application of such methods are:

- Standardization of historical flows. Balance sheet values are turned into elements that express the company's ability to generate financial, income or dividend flows;
- The analysis of the stability conditions of historical flows, using simple statistical indicators such as variance and standard deviation or multivariate discriminate analysis;
- The choice of the statistical instrument to be used for the prediction of future cash flows, using the techniques of the simple or weighted arithmetic mean and regression analysis.

The method based on planned results refers to the financial results expected in the budgets and in long-term plans drawn up by the directors of the company target. It is used when the company has been on the market for a short time and therefore has few profits and history (Damodaran, 1999).

This method involves the normalization of the budget and a comparison of the historical basis of the expected results and the actual results.

The innovation method estimates flows based on plausible assumptions regarding future scenarios within which the company will operate. The steps for applying the method concern the identification of the scenarios, the evaluation of the reflections of these scenarios on the main balance sheet figures, the estimated future cash flows based on the assumptions made.

An additional technique, compared with the previous ones, is the phase method by which the determination of future cash flows derives from breaking down the time horizon of the estimate into more than one period. The first three years are related to the budget values of the firm, up until five years it is possible to identify trends through regressive techniques, for the following years the average values are estimated. For the application of the methods based on income flows it is appropriate to normalize income according to the effects of mutual management and any accessory management.

With regard to the estimate of the discount rate, refer to what was previously explained.

A Conclusive Proposal

A final methodological proposal for the identification of a course for the evaluation of human capital cannot be separated from the analysis of the evolutionary dynamics of knowledge in the company.

The process of formation, codification, and transfer of knowledge is closely connected with the life of the company and its evolutionary cycle.

Therefore, it seems appropriate to assume, using intersection logic, a positive correlation between the value of human capital and the presence of investment including investments in capital structure.

It is possible to consider that the creation of value and the development of human capital are closely connected with the presence in the company of components such as structural and relational capital.

It does not seem possible to envisage the economic value of human capital without appreciating the effects that result from the presence of other components of intellectual capital.

In this sense, it seems useful to propose an empirical methodology that provides a modified algorithm compared with empirical methods involving the application of multipliers to the total annual cost of labour.

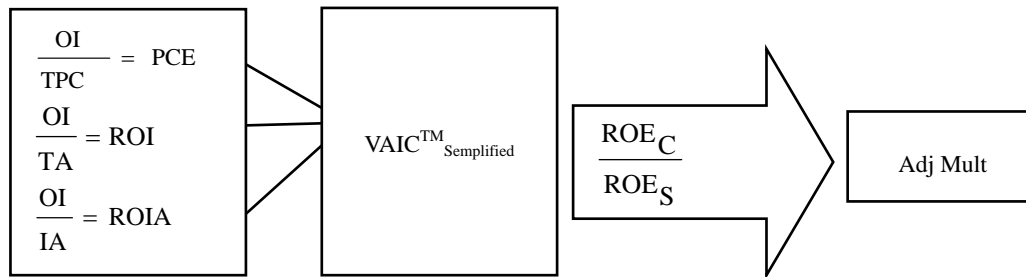


Figure 1. Theoretical framework.

The aim of this study is to identify a set of mutually related indicators which identify, in a verifiable manner, the determinants of these positive correlations based on the data that is present in the company’s external informative report. On the basis of this requirement, it is possible to propose a simplified methodology assuming, on the basis of a series of empirical evidence, the positive correlation between VAICTM and ROE. The algorithm that follows is a simplification of an empirical method that provides for the estimate of the economic value of human capital:

$$W_{c.u.} = Mult \times TPC \tag{25}$$

Where the symbols meaning that are already known.

The identification of an indicator used to develop a multiplier which correlates the EVCI with the ROE can be carried out as follows:

$$Adjusted\ Multiplier = VAIC^{TM}_{simplified} * \frac{ROE_C}{ROE_S} \tag{26}$$

In this algorithm VAIC can be identified according to the following simplification:

$$VAIC^{TM}_{simplified} = \frac{OI}{PCE} + \frac{OI}{TA} + \frac{OI}{IA} \tag{27}$$

This formulation allows to obtain an easily verifiable proxy on the basis of the assumptions that follow:

- (1) $\frac{OI}{TPC}$ is the Personal Cost Efficiency Ratio (PCE) and it provides information on the effectiveness of the cost of labor and thus indirectly the productivity of human capital;

- (2) $\frac{OI}{IA}$ is the Rate of Return on Intangible Asset (ROIA) and is a proxy of the operating profitability on investments in structural capital.
- (3) $\frac{OI}{TA}$ is the Rate of Return on Investment (ROI) and represents an indicator of efficiency of investment;

In this sense, the proposed simplification of the VAICTM allows to define a measure of the profitability of human capital, of investments in intangible assets and of the total investments.

This indicator multiplied by the ratio between the company ROE and that of the business sector allows the identification of a multiplier that takes into account the risk of the net performance of the company compared with the reference sector.

In conclusion, it can be affirmed that the proposed simplification allows to identify multipliers with an appropriate level of rationality even in companies that do not adopt models and instruments of voluntary informative reports on the subject of intellectual capital, using readily available and comparable data which is present in the company's external informative report.

On the rationality level, it can be affirmed that this proposal should be able to allow the achievement of an adequate level of rationality in that it takes into account the development dynamics of human capital on the basis of the development, codification and transfer of knowledge that becomes structural capital and on the basis of the efficiency of operations that are placed in relation to the dynamics of the net profitability of the company compared to the sector with a view to creating value for shareholders.

This framework is the first step of a larger research project which will conclude with an empirical investigation of a sample of Italian listed companies with a high cognitive intensity.

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