

management

man

age

ment

VOLUME 10 · NUMBER 1 · SPRING 2015 · ISSN 1854-4231

management

ISSN 1854-4231

www.mng.fm-kp.si

EDITOR

Štefan Bojnec, *University of Primorska, Slovenia, stefan.bojnec@fm-kp.si*

EXECUTIVE EDITOR

Klemen Kavčič, *University of Primorska, Slovenia, klemen.kavcic@fm-kp.si*

ASSOCIATE EDITORS

Imre Fertő, *Corvinus University of Budapest, Hungary, imre.ferto@uni-corvinus.hu*

Josu Takala, *University of Vaasa, Finland, josu.takala@uwasa.fi*

MANAGING AND PRODUCTION EDITOR

Alen Ježovnik, *University of Primorska, Slovenia, alen.jezovnik@fm-kp.si*

EDITORIAL BOARD

Josef C. Brada, *Arizona State University, USA, josef.brada@asu.edu*

Birgit Burböck, *FH Joanneum, Austria, birgit.burboeck@fh-joanneum.at*

Andrzej Ciešlik, *University of Warsaw, Poland, cieslik@wne.uw.edu.pl*

Liesbeth Dries, *University of Wageningen, The Netherlands, liesbeth.dries@wur.nl*

Henryk Gurgul, *AGH University of Science and Technology, Poland, henryk.gurgul@gmail.com*

Timotej Jagrič, *University of Maribor, Slovenia, timotej.jagric@uni-mb.si*

Ladislav Kabat, *Pan-European University, Slovakia, dekan.fep@paneurouni.com*

Pekka Kess, *University of Oulu, Finland, pekka.kess@oulu.fi*

Masaaki Kuboniwa, *Hitotsubashi University, Japan, kuboniwa@ier.hit-u.ac.jp*

Mirna Leko-Šimić, *Josip Juraj Strossmayer University of Osijek, Croatia, lekom@efos.hr*

Zbigniew Pastuszek, *Maria Curie-Skłodowska University, Poland, z.pastuszek@umcs.lublin.pl*

Katarzyna Piorkowska, *Wrocław University of Economics, Poland, katarzyna.piorkowska@ue.wroc.pl*

Najla Podrug, *University of Zagreb, Croatia, npodrug@efzg.hr*

Cezar Scarlet, *University Politehnica of Bucharest, Romania, cezarscarlat@yahoo.com*

Hazbo Skoko, *Charles Sturt University, Australia, hskoko@csu.edu.au*

Marinko Škare, *Juraj Dobrila University of Pula, Croatia, mskare@efpu.hr*

Janez Šušteršič, *International School of Social and Business Studies, Slovenia, janez.sustersic@issbs.si*

Milan Vodopivec, *University of Primorska, Slovenia, milan.vodopivec@fm-kp.si*

AIMS AND SCOPE

The journal *Management* integrates practitioners', behavioural and legal aspects of management. It is dedicated to publishing articles on activities and issues within organisations, their structure and resources. It advocates the freedom of thought and creativity and promotes the ethics in decision-making and moral responsibility.

INDEXING AND ABSTRACTING

Management is indexed/listed in IBZ, DOAJ, EconPapers, Index Copernicus, Cabell's, and EBSCO.

SUBMISSIONS

The manuscripts should be submitted as e-mail attachment to the editorial office at mng@fm-kp.si. Detailed guide for authors and publishing ethics statement are available at www.mng.fm-kp.si.

Management is an open access journal distributed under the terms of the Creative Commons CC BY-NC-ND 4.0 License. No author fees are charged.



EDITORIAL OFFICE

University of Primorska
Faculty of Management
Cankarjeva 5, 6101 Koper, Slovenia
mng@fm-kp.si · www.mng.fm-kp.si



Revija *Management* je namenjena mednarodni znanstveni javnosti; izhaja v angleščini s povzetki v slovenščini. Izid revije je finančno podprla Javna agencija za raziskovalno dejavnost Republike Slovenije iz sredstev državnega proračuna iz naslova razpisa za sofinanciranje izdajanja domačih znanstvenih periodičnih publikacij.

management

VOLUME 10 (2015) NUMBER 1

ISSN 1854-4231

- 3 The Dual Listing of Austrian Companies in Vienna and Frankfurt: Dependence Analysis
Lukasz Gurgul, Sanela Omerovic, and Robert Syrek
- 17 A Comparative Study of Job Satisfaction among Management Teachers of MBA Colleges in South Rajasthan
Anil K. Bhatt and Thomas Remigius
- 35 Managing for Success: The Role of Transactional and Relational Mechanisms in Buyer-Supplier Relationships
Khuram Shahzad, Josu Takala, Tahir Ali, and Ilkka Sillanpää
- 61 Status of Women in Society and Life Expectancy at Birth
Anica Novak, Žiga Čepar, and Aleš Trunk
- 79 From Knowledge Management to Ecosystems of Innovation: A Scoping Review
Eva Gatarik, Lenka Janošová, Michal Jirásek, Viktor Kulhavý, and Martin Štěrba
- 103 *Abstracts in Slovene*

The Dual Listing of Austrian Companies in Vienna and Frankfurt: Dependence Analysis

LUKASZ GURGUL

Jagiellonian University in Cracow, Poland
luk.g@oz.pl

SANELA OMEROVIC

University of Graz, Austria
sanela.omerovic@uni-graz.at

ROBERT SYREK

Jagiellonian University in Cracow, Poland
robert.syrek@uj.edu.pl

International capital flows can be hampered by a variety of barriers such as transaction costs, information costs, and legal restrictions. The solution in this situation can be dual listing. The framework of the research presented here assumes that domestic securities are dually listed on a foreign capital market, while none of the foreign securities is dually listed on the domestic capital market. This paper is concerned with a dependence analysis of the log-levels and returns of Austrian stocks listed in Frankfurt and Vienna. The important issue is dynamic linear and non-linear causality between log-levels (returns) of prices and the indices *ATX* and *DAX*. In this context the important directions of causality are found along with the level of relations of the selected types of causality.

Key words: dual listing, linear and non-linear causality, cointegration

Introduction

Nowadays, economists observe the internationalization of the world's financial markets. This problem has received much attention in both practice and research. One aspect of this kind of globalization is the listing of firms' equity securities on foreign stock exchanges.

Usually the contributors of papers try to provide some insights into the following questions:

- What are the major costs and benefits of foreign listing?
- What are the key determinants of the perceived net benefits of foreign listing?

However, we are not concerned in this contribution with these questions. Our main goal is to identify dependencies between domestic and foreign price listings.

The expected advantages of foreign listings are in liquidity, and the visibility and prestige of the company. A very important goal is to access foreign sources of capital, and to reduce political risk in the foreign country in which the stocks are being listed. Possible disadvantages include additional costs in maintaining listing status, and regulatory uncertainty about the foreign stock exchange.

Up to now the properties of dual listings on us domestic stock exchanges are relatively well-recognized. The issue has received much attention in the research. However, the number of studies on dual listings is limited. In addition, the reported results are not always compatible. In one of the earliest studies, which was conducted by Howe and Kelm (1987) the impact of listings by us firms on the Basel, Frankfurt, and Paris stock exchanges was investigated. The results presented by the contributors reflect essential drop in the prices of the listed stocks around the listing period. However, a following contribution by Lee (1991) suggests no significant price effects for us firms resulting from dual-listing on either the London or Toronto Stock Exchange.

The main goal of this paper is to provide empirical evidence on the price effects of dual listings on the Frankfurt (FSE) and the Vienna Stock Exchange (VSE) by Austrian firms.

The paper is scheduled as follows: the next section contains a literature review. The third section presents data from the Frankfurt and Vienna Stock Exchanges and methodology. The fourth section outlines and discusses the empirical tests. The final section contains a summary and conclusions.

Literature overview

Under globalization, dual listings are widely observed. However the advantages and disadvantages of dual listing are discussed only in a few studies. The authors tried to examine the valuation impact of such listings. In the above mentioned contribution by Howe and Kelm (1987) the authors tested the effects of listings on the Basel, Frankfurt and Paris stock exchanges for 165 us firms over the period 1962–1985. The contributors found that dual listings cause a significant stock price decline for the us companies' shareholders. The recommendations were that us corporate managers should not start foreign listings, because the advantages of such listings are outweighed by the costs.

Alexander, Eun, and Janakiramanan (1988) checked the price effects of 34 non-US firms that were listed to either the US stock exchange or the NASDAQ system. They show that shareholders of foreign firms benefit from such listings. This was confirmed by positive cumulative average residuals over the prelisting period. The contributors in summary stated that the results supported their hypothesis that global capital markets were completely or at least to some extent segmented. Lee (1991) tested the effects of foreign listings for 141 US companies that dual-listed on the London or Toronto Stock Exchange over the period 1962–1986. Lee did not detect any significant, long-term changes in stock prices. This clearly contradicts Howe and Kelm (1987) and Alexander, Eun, and Janakiramanan (1988).

Biddle and Saudagaran (1989) checked the links between financial disclosure levels and choices among alternative foreign stock exchange listings. By means of cross-sectional univariate and multivariate analysis for 207 internationally-traded firms, they found that firms are less likely to list their stocks on overseas exchanges with higher disclosure levels than those of their home stock exchanges. The authors established that both the direct and indirect financial disclosure costs accompanying foreign listing are an important factor in a company's listing decision.

Saudagaran (1988) is concerned with the reasons for foreign stock listing abroad. On the basis of a sample which consisted of 481 multinational firms with foreign listings as of December 1981, the author detected a significant relationship between foreign listings and two factors: the relative size of a firm in its domestic stock market and the ratio of foreign to total sales.

Fry, Lee, and Choi (1994) tested the valuation effects of dual listings on the Tokyo Stock Exchange (TSE) for US companies. The contributors found a significant rise in prices for the shareholders of US firms that list stocks on the TSE through 1988. The authors proven that large benefits can be enjoyed by those firms that do not have a business presence in Japan at the time of listing and for which the Tokyo listing is its first. Their results support the hypothesis that there are systematic benefits inherent in a multinational business network and diminishing marginal returns to foreign listings.

As we see these findings are in sharp contrast with losses previously reported by Howe and Kelm and Lee's finding of no significance. The empirical results are consistent with those of Alexander, Eun, and Janakiramanan (1988).

Radebaugh, Gerbhardt, and Gray (1995) stress that Daimler-Benz's decision to list in the USA was part of its globalization strategy to re-

duce the discrepancy between its international operating activities and the structure of its shareholders. It had 40% of its sales revenues from overseas but only 7.2% of its shares trading outside of Germany. Most of the firms in samples in different contributions e. g. Bancel and Mittoo (2002) reflect a similar situation. These companies have business operations in many parts of the world but their stock is traded primarily on the home exchanges.

In a study by Pagano, Roell, and Zechner (1999) the authors documented that cross-listings of European companies appear to have sharply different motivations and consequences depending on whether they cross-list in the USA or within Europe. Cross-listing in the USA appears to be driven by the need to raise equity to fund growth and foreign sales expansion, generally in high-tech sectors while cross-listing in Europe is less motivated by these factors. Karolyi (1998) reported that firms based in most geographical regions including Canada experience a decline in the estimated cost of capital after listing in the USA but that the opposite is true for the European (non-UK) firms.

Using event study methodology, Miller (1999) and Foerster and Karolyi (1999) detected abnormal returns in the underlying domestic stocks surrounding the international listing date. The foregoing empirical evidence is indicative of the impact of international listing on the stock in the domestic market.

Bancel and Mittoo (2002) survey European managers on the costs, benefits, and net benefits of foreign listing. An increase in prestige and visibility, and growth in shareholders are perceived as the major benefits, and the costs of public relations and legal fees are cited as the major costs by the managers. While a majority of managers (60%) perceive that the benefits outweigh the costs of foreign listing, about 30% view the net benefits to be negative. Perceived net benefits are positively related to an increase in total trading volume after foreign listing, the financial disclosure levels of the firm, and dual listing on both the US and European foreign exchanges. Without the influence of these factors, the perceived net benefits are negative. Many managers from the sample in the project by Bancel and Mittoo (2002) stress that the implementation of globalization strategy is a major benefit and consequence of foreign listing. Their results are in line with the survey of non-US firms by Fanto and Karmel (1997). In this study most firms reported US business-related reasons as the main reason for listing in the USA.

Baker, Nofsinger, and Weaver (2002) documented that the international listing of a stock includes greater attention among the in-

TABLE 1 Financial Times Series

Company	Symbols	Company	Symbols
Erste Group Bank	D.EBO	Telekom Austria	D.TA1
	O.ERS		O.TKA
Raiffeisen Bank International	D.RAW	Verbund	D.OEWA
	O.RAI		O.VERB
OMV	D.OMV	CA Immobilien Anlagen	D.BZY
	O.OMV		O.CAIM
Voestalpine	D.VAS	Vienna Insurance Group A	D.WSV2
	O.VAS		O.WNST
Andritz	D.AZ2	Uniq Insu Gross AG	D.UN9
	O.AND		O.UNIQ
Immofinanz	D.IMO	Oesterreichische Post	D.O3P
	O.IMMO		O.OES

NOTES Based on data from Thompson Reuters Datastream; the extracted time series refer to the trading period from 1 January 2010 to 15 October 2014.

vestment community as measured by the number of analysts following it and the media coverage. They also showed that the systematic risk as measured by beta goes down and hence the capital costs of the firm tend to decline following the listing of non-us stocks on the New York Stock Exchange (NYSE).

Reese and Weisbach (2002) claimed that non-us firms that list their stocks on the NYSE or NASDAQ increase the expected cost to managers of extracting private benefits due to a number of provisions in us securities law. As a result such firms will be able to access capital from the us market at a lower cost.

Data and Methodology

DESCRIPTIVE STATISTICS

We consider the daily prices of dual listed stocks on the Vienna and Frankfurt Stock Exchange (11 pairs, see table 1) along with main indices DAX30 (DAX) and ATX20 (ATX). The dataset covers the period from 1 January 2010 to 15 October 2014 and was extracted from Thomson Reuters Datastream. The prices of dual listed stocks are very close. Regarding all pairs, maximal price differences (in absolute value) do not exceed 2.3 (2.8 on 30 October 2009 Vienna Insurance Group). Instead of using series of prices we use natural logarithms of all prices to diminish and stabilize variances (from now on we refer to them as log-levels of prices). In addition, differencing log-levels leads to continuous returns. Tables 2 and 3 present main descriptive statistics.

TABLE 2 Descriptive Statistics of Stock Indices

Index	Mean	Standard dev.	Skewness	Kurtosis
DAX	8.90	0.17	0.23	1.97
ATX	7.78	0.12	-0.47	2.60

TABLE 3 Descriptive Statistics of Individual Stocks

Quartiles	Mean	Standard dev.	Skewness	Kurtosis
Minimum	0.83	0.11	-0.94	1.53
1st quartile	2.39	0.13	-0.44	1.76
median	3.28	0.22	-0.09	2.13
3rd quartile	3.37	0.25	0.07	2.41
Maximum	3.59	0.28	0.40	3.31

TABLE 4 Results of Unit Root Test

Item	DF-GLS		KPSS	
	Min	Max	Min	Max
Log-levels	-3.29	-1.38	0.82	2.44
First difference of log-levels	-29.15	0.02	0.11	0.32

For all series under consideration the values of skewness and kurtosis indicate departure from normality. The null hypothesis in the Jarque-Bera test is rejected in all cases. Additionally, the Ljung-Box test indicates the presence of autocorrelation in time series.¹

STATIONARITY OF THE DATA

In the next step we apply tests for stationarity (including DF-GLS and KPSS tests) either for log-levels or for their first differences. The DF-GLS test critical values are -3.43, -2.86 and -2.57 (for 1, 5 and 10% significance level respectively), whereas the KPSS test critical values are 0.119, 0.146 and 0.216 (for 10, 5 and 1% respectively). The test statistics of the DF-GLS for DAX and ATX for log-levels are -2.69 and -2.25, respectively. When using the KPSS test we obtain values 1.79 and 1.74 respectively. Applying tests for differenced series we obtain -25.06 and -24.31 (in the DF-GLS test) and 0.05 and 0.07 (in the KPSS test). Table 4 summarizes the results of unit root testing for all stocks.

We find that none of the series are trend stationary, so we may conclude that all log-level series are nonstationary (integrated of order 1) and thereby the logarithmic returns are stationary.

COINTEGRATION

The same order of integration and similarity patterns of dual listed stocks (in levels) can lead to conclusion of cointegration, and this

can be formally tested. We apply the Johansen procedure based on either trace or maximum eigenvalue test statistics with and without intercept in cointegrating relations. In all cases there is no reason to reject the hypothesis that the cointegration rank is equal to one. It is well known that the Johansen procedure is sensitive to lag selection. To check the robustness of our findings we apply the procedure of Phillips and Ouliaris (1990). Computed test statistics based on the Johansen procedure confirm the presence of cointegration. In all cases of dual listed stocks there exists a long run relationship.

Methodology-Causality Testing

To analyze causality patterns we apply linear and non-linear tests. Although all series are integrated of order one we do not difference them when testing linear causality. Instead, we follow the procedure of Toda and Yamamoto (1995) which can be applied for possibly non-stationary and cointegrated series. We consider the bivariate VAR(k) model:

$$y_t = \Phi_0 + \sum_{i=1}^k \Phi_i y_{t-i} + \varepsilon_t, \quad (1)$$

where Φ_0 is the vector of intercept parameters, $\Phi_i = \begin{pmatrix} \Phi_{11,i} & \Phi_{12,i} \\ \Phi_{21,i} & \Phi_{22,i} \end{pmatrix}$ are the matrices of parameters and the ε_t vector stands for white noise process. Appropriate lags are chosen by the BIC information criterion and tests of autocorrelation. We choose lowest lag which ensures the lack of autocorrelation of residuals. In all cases VAR models with at most four lags fit the best. Then we reestimate VAR models for $k + 1$ lags (the additional lag comes from the degree of integration of series) and use the Wald test (Toda and Yamamoto 1995), applied only to first k lags. Under the null hypothesis of the Granger non-causality the test statistic is asymptotically χ_k^2 distributed.

To complement the causality analysis we performed a Diks and Panchenko (2006) nonparametric causality test. As with the linear causality setting we test null hypothesis of Granger non-causality. Given two stationary series X_t, Y_t , the null hypothesis is equivalent to testing for conditional independence of Y_t :

$$H_0: Y_t | (X_{t-1}^{l_x}, Y_{t-1}^{l_y}) \sim Y_t | Y_{t-1}^{l_y}$$

where $Y_{t-1}^{l_y} = (Y_{t-l_y}, \dots, Y_{t-1})$ and $X_{t-1}^{l_x} = (X_{t-l_x}, \dots, X_{t-1})$. The null hypothesis states the invariance distribution of $(l_x + l_y - 1)$ dimensional vector $W_t = (X_{t-1}^{l_x}, Y_{t-1}^{l_y}, Z_t)$ with $Z_t = Y_t$. Assume that $l_x = l_y = 1$. If we ignore the time index then the null hypothesis implies:

TABLE 5 Results of Linear Causality Testing

Null hypothesis	Number of rejections of null	Number of bidirectional cases
O does not Granger cause D	11	4
D does not Granger cause O	4	
ATX does not Granger cause O	7	0
O does not Granger cause ATX	1	
ATX does not Granger cause D	11	1
D does not Granger cause ATX	1	
DAX does not Granger cause O	6	0
O does not Granger cause DAX	0	
DAX does not Granger cause D	11	2
D does not Granger cause DAX	2	

$$q \equiv E(f_{X,Y,Z}(X, Y, Z) - f_{X,Y}(X, Y)f_{Y,Z}(Y, Z)) = 0,$$

where $f.$ are probability density functions. Let

$$T_n(\varepsilon_n) = \frac{n-1}{n(n-2)} \sum_i (\hat{f}_{X,Y,Z}(X_i, Y_i, Z_i) - \hat{f}_{X,Y}(X_i, Y_i)\hat{f}_{Y,Z}(Y_i, Z_i)),$$

where $\hat{f}.$ are the local density estimates and $\varepsilon_n = Cn^{-\beta}$ is the bandwidth with $C > 0$ and $\beta \equiv (\frac{1}{4}, \frac{1}{3})$ with sample size n . Under the null hypothesis the test statistic has an asymptotically standard normal distribution

$$\sqrt{n} \frac{T_n(\varepsilon_n) - q}{S_n} \xrightarrow{D} N(0, 1).$$

where S_n is the asymptotic variance of $T_n(\varepsilon_n)$.

Empirical Results

The procedures described above are applied to different pairs of series along with indices. Table 5 presents the number of rejections of the null hypothesis of non-causality at a 0.05 significance level. For simplicity we apply the notation: O is a stock quoted on the Vienna Stock Exchange, D is a stock quoted on the Frankfurt Stock Exchange. Table 5 contains the results of causality testing.

There are few causal dependence patterns from these linear tests. In all pairs, stocks quoted on the Vienna Stock Exchange Granger cause stock prices from Frankfurt (in four cases feedback effect is observed). The main Austrian and German indices Granger cause stock prices listed on these markets. In addition, the DAX index causes stock prices quoted on the Vienna Stock Exchange. More-

over, we can observe causality running from the ATX to stock prices quoted on the Frankfurt Stock Exchange. In most cases we observe causality running from the DAX index to stock prices quoted on the Vienna Stock Exchange.

When testing for non-linear causality we follow the Dicks and Panchenko procedure (2006); while testing for nonlinear causality between O and D types of stocks, we take into account the results of cointegration analysis. First we estimate $vECM$ models for dual listed stocks with different specifications of deterministic terms. The general form of $vECM$ models is as follows:

$$\Delta y_t = \Pi_0 + \Pi y_{t-1} + \sum_{i=1}^k \Pi_i \Delta y_{t-i} + \varepsilon_t, \quad (2)$$

where Π_0 is the deterministic trend in levels and $\Pi_i \Delta y_{t-i}$ captures the short-run dynamics around a common stochastic trend. Component Πy_{t-1} captures the cointegration relationship with $\Pi = \alpha \beta'$. Vector α stands for the speed of adjustment parameters and β is the cointegrating vector. The selection of best fitted models is based on the BIC information criterion and significance tests of parameters. In table 6 we present estimated values of error correction terms for all pairs under consideration.

We observe that in all cases error correction terms (ECT) are negative for companies quoted on the Vienna Stock Exchange, and positive for companies listed in Frankfurt. In four cases the parameter of the error correction term from the first equation of (2) is not significant at a 10% level. We can conclude that if the error correction term $y_{1t-1} - \beta y_{2t-1}$ is positive, the price level of a stock of type O falls, and the price level of a stock of type D increases. It is worth mentioning that all ECT parameters are lower (in absolute value) for a stock of type O, so that adjustment to a long-run path is faster for stocks from the Frankfurt Stock Exchange. We tried to incorporate asymmetries into ECT as proposed by Granger and Lee (1989), but according to the BIC criterion we did not achieve a significant improvement.

The residuals from $vECM$ models are used in nonlinear causality tests. In all remaining case pairs (non cointegrated series) we simply difference the series. In such a way we obtain log-returns. In the next step VAR models are estimated. Filtered series (from linear structure) are used to discover non-linear causality patterns.

We set $l_x = l_y = 1$ and a bandwidth parameter equal to 1, which is close to $C^* n^{-\frac{2}{7}}$, where $C^* \approx 8$, $\beta = -\frac{2}{7}$ (Diks and Panchenko 2006) and n is our sample size. Selecting a longer bandwidth results in smaller p -values and vice versa.

TABLE 6 Parameter Estimates of Error Correction Terms of *VECM* Model

Pair no.	Dual listed stocks	Error correction terms parameters
1	O.OMV	-0.419***
	D.OMV	0.518***
2	O.ERS	-0.217*
	D.EBO	0.807***
3	O.VAS	-0.211*
	D.VAS	0.432***
4	O.RAI	-0.132
	D.RAW	0.894***
5	O.WNST	-0.090
	D.WSV2	0.842***
6	O.AND	-0.164*
	D.AZ2	0.480***
7	O.TKA	-0.080
	D.TA1	0.710***
8	O.UNIQ	-0.073
	D.UN9	0.380***
9	O.OES	-0.134*
	D.O3P	0.805***
10	O.VERB	-0.224*
	D.OEWA	0.596***
11	O.IMMO	-0.224**
	D.IMO	0.644***

NOTES *** Significance at 1% level, ** Significance at 5% level, *significance at 10% level.

Additionally, to investigate volatility transmission, all series are filtered from conditional heteroscedasticity. For this purpose we apply the bivariate *GARCH-BEKK(1,1)* (Engle and Kroner 1995) model for heteroscedasticity filtering:

$$\sum_t = CC' + A\varepsilon_{t-1}\varepsilon'_{t-1}A' + B\sum_t B',$$

$$\varepsilon_t = \sum_t^{\frac{1}{2}} Z_t,$$

where *C, A* and *B* are matrices of parameters (*C* is lower triangular), \sum_t is the conditional covariance matrix of ε_t and z_t is an i.i.d. innovation vector with zero mean and an identity covariance matrix.

Standardized residuals from *VAR/VECM* are used in nonlinear causality testing. Table 7 presents the number of rejections of the null hypothesis of non-causality at a 0.05 significance level.

TABLE 7 Results of Nonlinear Causality Testing

Null hypothesis	(1)	(2)	(3)	(4)
O does not Granger cause D	6	5	5	1
D does not Granger cause O	7		2	
ATX does not Granger cause O	4	2	0	0
O does not Granger cause ATX	4		1	
ATX does not Granger cause D	10	4	2	0
D does not Granger cause ATX	5		1	
DAX does not Granger cause O	6	0	0	0
O does not Granger cause DAX	0		0	
DAX does not Granger cause D	10	2	4	0
D does not Granger cause DAX	3		1	

NOTES Column headings are as follows: (1) $VECM/VAR$ filtered residuals, (2) number of bidirectional cases, (3) $VECM/VAR-BEKK$ filtered residuals, (4) number of bidirectional cases.

When using residuals from $VAR/VECM$ models, the causality patterns are in most cases in line with the linear causality tests. There are a few cases where the number of nonlinear dependencies is larger than linear (D does not Granger cause O, O does not Granger cause ATX, D does not Granger cause ATX and D does not Granger cause DAX).

When using standardized residuals of series, we observe that causal relationships disappear in most cases. If this is the case, we conclude that nonlinear causality is due to volatility effects. If we do not reject the null, we deduce that observed nonlinear relationships are due to asymmetries in conditional volatility or are caused by higher moments. Introducing an asymmetry component to $GARCH-BEKK$ model gives an answer to the first supposition. There are cases when DAX does not Granger cause D (3 cases) and O does not Granger cause D (1 case) where rejection is caused by the asymmetric impact of an unconditional shock on conditional variances. Otherwise nonlinear causality can be observed in higher conditional moments.

Conclusions

Recent developments in the international capital markets have caused a lively debate about the value and reasonability of foreign listing for World and particularly European firms. The opponents of dual listing argue that with the introduction of a single currency in Europe, dual listings on the European stock exchanges are not necessary. In addition, with the increasing globalization of capital markets

and the international approach of most fund managers, many argue that dual listing may also not serve a useful purpose for most firms especially those acting within Europe.

In our contribution we provide evidence on some patterns of dual listings. This study provides empirical evidence regarding the effects of dual listings for Austrian firms. Using a sample of 11 Austrian firms that list also on the Frankfurt Stock Exchange our study reports that foreign listings do not cause any significant and permanent changes in domestic stock prices. The stock prices of Austrian companies listed in Frankfurt and Vienna are quite similar. The results about linear causality suggest that prices in Frankfurt of Austrian stocks are caused by prices of these stocks in Vienna. In general no reciprocal relationship exists. In more than 50% of cases is there is feedback.

The prices of dual listed stocks depend causally on the level of the DAX and ATX. Nonlinear causality tests indicate that the levels of the DAX or ATX determine the log-levels of dual listed Austrian stocks. Other non-linear causalities are not so strongly pronounced. The analysis of cointegration indicates that companies from Frankfurt adjust to an equilibrium path faster than domestic companies.

Notes

1. All details of results are available from the authors upon request.

References

- Alexander, G. J., C. S. Eun, and S. Janakiraman. 1988. 'International Listings and Stock Returns: Some Empirical Evidence.' *Journal of Financial and Quantitative Analysis* 23:135-51.
- Baker, H. K., J. Nofsinger, and D. Weaver. 2002. 'International Cross Listing and Visibility.' *Journal of Financial and Quantitative Analysis* 37 (3): 495-521.
- Bancel, F., and C. Mittoo. 2002. 'European Managerial Perceptions of the Net Benefits of Foreign Stock Listings.' *European Financial Management* 7 (2): 213-36.
- Biddle, G. C., and S. Saudagaran. 1989. 'The Effects of Financial Disclosure Levels on Firms' Choices among Alternative Foreign Stock Exchange Listings.' *Journal of International Financial Management and Accounting* 1:55-87.
- Diks, C., and V. Panchenko. 2006. 'A New Statistic and Practical Guidelines for Nonparametric Granger Causality Testing.' *Journal of Economic Dynamics and Control* 30:1647-69.
- Engle, R., and K. F. Kroner. 1995. 'Multivariate Simultaneous Generalized ARCH.' *Econometric Theory* 11:122-50

- Fanto, J., and R. Karmel. 1997. 'Report on the Attitudes of Foreign Companies Regarding a us Listing.' *Stanford Journal of Law, Business and Finance* 3:37–58.
- Foerster, S., and G. A. Karolyi. 1999. 'Multimarket Trading and Liquidity: A Transactions Data Analysis of Canada–us Interlistings.' *Journal of International Financial Markets, Institutions and Money* 8:393–412.
- Fry, C. L., I. Lee, and J. J. Choi. 1994. 'The Valuation Effects of Overseas Listings: The Case of the Tokyo Stock Exchange.' *Review of Quantitative Finance and Accounting* 4:79–88.
- Granger, C. W. J., and T. H. Lee. 1989. 'Investigation of Production, Sales and Inventory Relationships Using Multicointegration and Non-Symmetric Error Correction Models.' *Journal of Applied Econometrics* 4:145–59.
- Howe, J., and K. Kelm. 1987. 'The Stock Price Impact of Overseas Listings.' *Financial Management* 16:51–6.
- Karolyi, G. A. 1998. 'Why Do Companies List Shares Abroad? A Survey of the Evidence and Its Managerial Implications.' *Financial Markets, Institutions and Instruments* 7:1–60.
- Lee, I. 1991. 'The Impact of Overseas Listings on Shareholder Wealth: The Case of the London and Toronto Stock Exchanges.' *Journal of Business and Accounting* 18:583–92.
- Miller, D. 1999. 'The Market Reaction to International Cross-Listings: Evidence from Depository Receipts.' *Journal of Financial Economics* 5:103–23.
- Pagano, M., A. Roell, and J. Zechner. 1999. 'The Geography of Equity Listing: Why do European Companies List Abroad?' CSEF Working Paper 28, University of Salerno.
- Phillips, P. C. B., and S. Ouliaris. 1990. 'Asymptotic Properties of Residual Based Tests for Cointegration.' *Econometrica* 58 (1): 165–93.
- Radebaugh, L., G. Gerbhardt, and S. Gray. 1995. 'Foreign Stock Exchange Listing: A Case Study of Daimler-Benz.' *Journal of International Financial Management and Accounting* 7:34–53.
- Reese, W. A., M. Weisbach. 2002. 'Protection of Minority Shareholder Interests, Cross-Listings in the United States, and Subsequent Equity Offerings.' *Journal of Financial Economics* 66:65–104.
- Saudagaran, S. 1988. 'An Empirical Study of Selected Factors Influencing the Decision to List on Foreign Stock Exchanges.' *Journal of International Business Studies* 9:101–27.
- Toda, H. Y., and T. Yamamoto. 1995. 'Statistical Inference in Vector Autoregressions with Possibly Integrated Processes.' *Journal of Econometrics* 66:225–50.



This paper is published under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

A Comparative Study of Job Satisfaction among Management Teachers of MBA Colleges in South Rajasthan

ANIL K. BHATT

Pacific Institute of Business Management, India
anilbhatt_ndhn@yahoo.com

THOMAS REMIGIUS

Pacific Institute of Business Management, India
tremegius@gmail.com

Management teaching is a noble profession, a continuous process and indicator of economic and social development. The management teachers are the pre-requisite of the success of management programmes, their role in society has been increasing with the rapid growth of trade and finance in the whole world. Society is continuously observing Management teachers while there are various concerns in their role and their satisfaction. Only satisfied and well-adjusted management teacher can think of the well-being of the future managers. The major source of satisfaction for the management teachers comes from their own institution, also known as hygiene factors. In the light of this background, the aim of this study is to analyze the job satisfaction level among the MBA teachers in selected management colleges of south Rajasthan. For this purpose, the Job related hygiene factors were identified and then the satisfactions of 220 management teachers were sought on various dimensions. The data were analysed by using multiple regression and ANOVA analysis with SPSS-19 software to identify the factors responsible for satisfaction. The analysis revealed that three factors Physical Teaching condition, Flexible working hours and Environment providing hint of Job Security revealed the job satisfaction in Management teachers of South Rajasthan.

Key words: management teachers, job satisfaction, hygiene factors, multiple regressions, ANOVA, South Rajasthan

Introduction

Job Satisfaction is regard to one's feeling or state of mind regarding the nature of their work. Job satisfaction can be influenced by variety of factors such as kind of supervision, organization policies and

administration, salary and quality of life etc. For decades, job satisfaction has been one of the most extensively researched concepts in work and organizational psychology. Job satisfaction is believed to reflect an individual's affective and/or cognitive assessment of his or her working conditions and job attributes (Chouhan et al. 2013). On the other hand, the teaching is regarded as the noblest profession, a continuous process and indicator of social development. The teachers are the pre-requisite of the success of educational programmes, their role in society has been changing with time but the importance of this position is same (Khan et al. 2014). The main quality of teacher is the positive attitude towards education. Management teachers on the other hand must have the ability to get them satisfied from their respective jobs. The management education programme should inculcate the qualities in teachers, so that they may be in their best position to impart quality education. The attitude of Management teachers towards education influences the nature and extent of their participation in the education and related educational programme (Verma and Chouhan 2014a; 2014b). By developing good management, teachers' with desirable attitude or by shaping their attitudes in desired, effective and productive management education can be achieved. It is therefore important that those individuals who join management-teaching profession can perform to the maximum of his capacity and it is only possible when they are satisfied with their job. Every profession has certain aspects responsible for job satisfaction, attitude and teaching is not an exception unless and until a teacher derives satisfaction on job performance and develops a positive attitude towards education, the management teachers cannot initiate desirable outcomes to cater to the needs of the society. Only satisfied and well-adjusted management teacher can think of the well-being of the future managers. In the light of this background, the aim of this study is to analyze the job satisfaction level among the MBA teachers in selected management colleges of south Rajasthan. In the unsubstantiated current political attitude toward management teachers, they have to balance their budgets and increase accountability for student achievement, and carry more burdens (Chouhan et al. 2013). Although the services of management teachers are now respected everywhere, their adjustment with their vocation, scholar's life and environment is still at stake. The teachers have to develop habits to meet with challenges in the desired manner and this may be called an adjustment. The quality of competent management teachers depends on certain factors where the degree of level of adjustment presents in the current environment. A well-

adjusted teacher's work with dedication if they work in a free mind, their sense of responsibility will increase. That is why it is important to measure the behaviour of management teachers and their level of satisfaction in this challenging era. The purpose of this study was to investigate predictors of management teachers' job satisfaction including those that are personal and those that are job related.

Objectives of the present study are:

1. To assess the value of reward systems of Management teachers working in the MBA colleges in Rajasthan.
2. To assess the level of job satisfaction of Management teachers working in the MBA colleges in Rajasthan based upon variables of Hygiene factors.

Review of Literature

Hajiha, Jassabi, and Ghaffari (2013) conducted a study, which was conducted in four universities, and 346 questionnaires were handed out to academic staffs. The usable questionnaires were 281, which comprise 128 male and 153 female. Cross-sectional study was conducted in six months. Mann-Whitney test was applied for data analysis. It was concluded that male academic staffs were more satisfied than their counter partners were.

Kearney (2008) found that among teachers sampled from a Mid-western school district, less than half were satisfied with class size, support from parents, school learning environment, and availability of resources. These factors were also cited as causes of teacher attrition. Retention rates (3 years in the classroom) were between 74.77% and 89.1% for White teachers and between 76.5% and 94.1% for Black teachers during a 5-year time span.

Ghafoor (2012) revealed the research of his cross-sectional study attempted to examine the relationship between demographic characteristics and job satisfaction among academic staff of public and private sectors universities of Punjab Province in Pakistan. Minnesota satisfaction questionnaire developed by Weiss and Cropanzano (1966) has adopted for the study by adding few items to measure demographic characteristics. The questionnaire was pretested in seven universities of Punjab province for final data collection. For data analysis, statistical packages for social sciences (SPSS) were used. The studied population was 6327 academic staff (with 40 universities including 22 public and 18 private sectors) which comprises Lecturers, Assistant Professors, Associate Professors and Professors. Samples of 310 academic staff were taken and 299 usable

questionnaires were included in the study. The Cronbach's alpha of the instrument was 0.852, which was above acceptable range. It was found that there was not too much difference in job satisfaction based on demographic characteristics. However, male academic staffs were slightly more satisfied than their counterpart was. The permanent academic staffs were more satisfied than contractual academic staff. The academic staffs with PhD's degree were more satisfied with job than academic staff with MPhil, Master and Bachelor (Hons) degree. The academic staffs with high net monthly salary were found more satisfied than those who were earning less monthly salary. The experienced faculty members were more satisfied than less experienced. It was also found age and job satisfaction was not positively correlated with each other's. The academic staffs from private sector universities were comparatively more satisfied with overall job satisfaction than that of public sector universities.

Malik (2011) conducted a study to identify the relationship of demographic characteristics and job satisfaction. The researcher tried to explain the relationship between demographic factors Age, Gender, Family size, Income, Occupation, Education, Ethnicity, Nationality, Religion, Social standards and job satisfaction. Primary data was collected with the help of adopted questionnaire from 120 respondents, which comprise 100 male and 20 female faculty members. The reliability of the instrument (Cronbach's alpha) was above acceptable value. The results have shown that the level of satisfaction between male and female faculty members was significant.

Olorunsola (2010) conducted a study by taking a healthy sample size of 400 members from 4 universities, representing 100 members from each university. He studied sample comprises two federal universities and two were state owned. Primary data was gathered with the help of adopted questionnaire and Cronbach's of the instrument was 0.92, which was the above acceptable value. As conclusion was concerned male administrative members were comparatively more satisfied than female administrative staff.

Sen (2008) examined the relationship between Job Stress and Job Satisfaction amongst teachers and managers. By collecting the data of 31 teachers and 34 managers in the NCR region the analysis have shown insignificant differences in Job Stress and Job Satisfaction of teachers and managers. However, teachers experience low job Satisfaction and they face Job Stress while in case of managers the two have not seemed to associate. As detailed earlier, both managers and teachers have to deal with a number of people and their success on the job, largely, depends on how others do their own work. While

there are some similarities between managers' and teachers' jobs in the sense that both managers and teachers need to plan, direct, supervise and guide their subordinates and students respectively, there are quite a few dissimilarities too. Students come to teachers at a very impressionable age and teachers are able to convert them easily. It is possible that teachers will find it simpler to train the young minds while managers have to work with adults who have already formed their perceptions and biases. It is possible that managerial jobs are more competitive than teaching jobs (Chandra, Goswami, and Chouhan 2012).

Menon, Papanastasiou, and Zembylas (2008) conducted a study among schoolteachers in Cypress to determine the relationship between teacher variables, organizational variables, and job satisfaction. The data were collected from 450 teachers by using surveys method. The findings included the high level of satisfaction of primary schools teachers than teachers in secondary schools. Other findings suggested that increased job satisfaction was also related to school climate and professional goal attainment.

Bishay (1996) checked the Levels of job satisfaction and motivation by survey in a sample of 50 teachers. A sample of 12 teachers was then studied using the Experience Sampling Method (ESM). Teachers were randomly beeped by special pagers 5 times a day for 5 days and completed surveys on mood and activity for each beep, resulting in 190 reports of teachers' daily experiences. It was found that Job satisfaction and motivation correlated significantly with responsibility levels, gender, subject, age, years of teaching experience, and activity. For this group of teachers who work in a school with a selective student body, overall motivation and job satisfaction levels amongst them were found to be high. Based upon the findings, it appeared that gratification of higher-order needs was most important for job satisfaction and it was hard to believe that many of teachers were dissatisfied with their job.

Zembylas and Papanastasiou (2006) examined the sources of satisfaction and dissatisfaction of teachers in Cypress and suggested primary sources of satisfaction for teachers were working with children, contributing to society, collaborative work with colleagues, professional growth, salary, and work schedule. In contrast, primary sources of dissatisfaction were social problems, student failure, lack of discipline, lack of respect and status in community, and lack of autonomy.

Pearson and Moomaw (2005) conducted a quantitative study with 171 Florida teachers to determine the relationship between teacher

autonomy and four other constructs: job stress, work satisfaction, empowerment, and professionalism. Teacher autonomy was separated into two dimensions, curriculum autonomy and general teaching autonomy. Correlations revealed curriculum autonomy was significantly and negatively related to job stress; moreover, general teaching autonomy was significantly and positively associated with empowerment and professionalism.

Lawler and Porter (1967) revealed that employee's job performance affects his or her job satisfaction, which has become the focus of research in the area. Brief (1998) revealed the factors which are related with the job satisfaction includes interest in work, fair pay, good promotional opportunities, supportive supervisor, and friendly co-workers. According to him, this situation leads one to predict satisfaction. The situation in which pleasures associated with one's job outweigh the pains, there is some level of job satisfaction. Herzberg et al. (1957) and Maslow (1943) have identified the factors that contribute to a stimulating, challenging, supportive, and rewarding work environment. They accepted the relative prominence of pay in the reward system, and also that the salaries must be tied to job responsibilities and that pay increases be related to performance rather than seniority. Sutter (1994) studied secondary assistant principals, in Ohio, to determine the relationship between job satisfaction and administrative experience. He found no significant relationship between job satisfaction and experience. Bridges (1995) conducted a similar study using assistant principals and found no relationship between experience and job satisfaction. Newby (1999) also revealed the similar result of his study that shown no significance between job satisfaction and experience level in her study of middle school principals in Virginia. While Graham (1966) find a significant difference between education level and job satisfaction have not been done in an education setting. Hoppock (1977) studied that has shown a significant difference in the average salaries of the most satisfied and the least satisfied teachers. Those teachers who earn higher salaries were more satisfied that those who had low-income earnings. The same has also supported by Porter and Lawler (1968) who have concluded that job satisfaction reflects the rewards, the employees get for the type of work they do. Kim & Loadman (1994) conducted a study of 2054 practicing classroom teachers and found that job satisfaction and pay satisfaction were significantly related. Barry (2002) also found the same that those who were paid more were more satisfied with their work, his study covered 173 Michigan high school principals during the 2000–2001. Blanchflower, Os-

wald, and Warr (1993), and Schwab & Wallace (1974) also suggest a positive correlation between job satisfactions and pay in their classic study. Friesen, Holdaway, and Rice (1983) conducted a survey of 410 principals from Alberta, Canada and revealed that Hygiene factors are important for measuring job satisfaction. The six job dimensions and ten hygiene factors theorized by Herzberg (1968) have been commonly used in educational job satisfaction research; however he also revealed that to that point tiny research has been done in the United States specifically in educational sectors job satisfaction. Later on Friesen, Holdaway, and Rice (1983) and Gunn & Holdaway (1986) found some studies completed at the secondary level in Canada, England and Australia which do not provide much insight to this research since the education systems, the populations, and roles of the teachers. Steers and Braunstein (1976) also measured achievement, autonomy, affiliation, and dominance that education administrators express on the job and the current satisfaction that education administrators experience on the job. As per them the four need subscales included job performance, work attitudes, organizational attachment, leadership attributes have obtained satisfactory levels of internal and external consistency made the MNQ a productive instrument for both overall personality and specific need expression on the job.

Research Methodology

This section deals with the testing of hypotheses by using appropriate statistical tools. For analysing responses gathered with the help of questionnaires on Hygiene factors dimensions for measuring level of Job satisfaction of the respondents. The research methodology adopted for the purpose can be describes as under:

DATA COLLECTION METHOD

To assess the job satisfaction level of the management teachers of the Rajasthan state the views of the management teachers required to be gathered, hence the primary data were collected to conduct the study and data collection method was included as under:

The response related with Job satisfaction of management teachers teaching in public and Private sector Management Colleges in south Rajasthan were gathered with a well-fabricated questionnaire. The data were collected from 220 respondents of 20 management colleges from south Rajasthan on five points Likert Rating scale corresponds to each chosen scale item. The method of sampling was stratified sampling under which strata of different colleges and level

TABLE 1 Statistics of Respondents

Item	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Valid <i>N</i>	220	220	220	220	220	220	220
Missing <i>N</i>	0	0	0	0	0	0	0
Mean	5.0727	1.4864	1.5591	41.2409	1.1364	1.4500	2.7318
Std. error*	0.16557	0.03377	0.03355	0.77062	0.02319	0.03362	0.06098
Median	5.0000	1.0000	2.0000	43.0000	1.0000	1.0000	3.0000
Mode	6.00	1.00	2.00	28.00**	1.00	1.00	3.00
Std. dev.	2.45585	0.50095	0.49763	11.43020	0.34396	0.49863	0.90452
Variance	6.031	0.251	0.248	130.649	0.118	0.249	0.818
Range	9.00	1.00	1.00	60.00	1.00	1.00	3.00
Minimum	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Maximum	10.00	2.00	2.00	60.00	2.00	2.00	4.00

NOTES Column headings are as follows: (1) college, (2) private/government, (3) male/female, (4) age, (5) married, (6) family, (7) designation. *Of mean. **Multiple modes exist; the smallest value is shown.

of teachers i.e., Assistant Professors, Associate Professor and Professor were used for data collection. The statistical significance has been tested at 95% confidence level.

To identify key variables the perception of the respondents of south Rajasthan were sought in relation to various independent factors. To analyse the hypothesis multivariate regression analysis and Independent sample t test have been used with SPSS-19 software.

Data Analysis

The data provided by the respondents as per their perception of their current job were analysed further. The descriptive statistics of data received from the Management teachers of MBA colleges were presented in table 1.

As per the first Objective to assess the reward system of management teachers working in MBA colleges of Rajasthan; the perception of management teachers were taken and to test the differences in the perception of their sector following hypothesis were made:

H_0 *There is no differences in the perception of respondents of public and private sector colleges on their income construct.*

H_1 *A significant difference exists in the perception of respondents of public and private sector colleges on their income construct.*

To test the above hypothesis the independent sample t test were being used to identify the gap between the perceptions with SPSS-19 software. The results were provided in tables 2 and 3.

TABLE 2 Independent Samples Test – Group Statistics

College	N	Mean	Std. deviation	Std. error of mean
1.00	97	1.8333	1.09813	0.25883
2.00	123	2.0385	0.87090	0.17080

TABLE 3 Independent Samples Test – Test Statistics

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(a)	1.581	0.216	-0.690	218	0.0400	-0.2051	0.2972	-0.8049	0.3947
(b)			-0.661	191.028	0.0513	-0.2051	0.3101	-0.8376	0.4273

NOTES Column headings are as follows: (1) equal variances: (a) assumed, (b) not assumed; Levene’s test for equality of variances: (2) *F*, (3) significance; *t*-test for equality of means: (4) *t*, (5) degrees of freedom, (6) significance (2-tailed), (7) mean difference, (8) standard error of difference; (9) upper 95% confidence interval of the difference, (10) lower 95% confidence interval of the difference.

Levene’s Test for Equality of Variances has been used with assumptions that the variances for the two groups viz. male and female are equal. The gap between two defined categories is statistically insignificant ($F = 1.581, p = 0.216 > .05$) which connotes that no significant difference exist between the public and private sector group on the reward system construct. Thus, equal variance assumed row is selected for conducting the independent sample *t*-test. The independent sample test results at 218 degrees of freedom $t_{218} = -0.690, p = 0.04 < 0.05$. Therefore, the difference between male and female on the reward system construct is statistically significant at 5% level of significance.

Thus, there perception gap exists between private and public sector colleges and the respondents of public sector were more satisfied with their reward system in existing Job (μ private = 1.8333; μ public = 2.0385). In the second stage to analyse the data of the management teachers in relation to Hygiene factors of Job satisfaction Multivariate Regression Analysis were used and following hypothesis was developed:

- H₁ *The attributes configuring Job satisfaction of Management Teachers of Rajasthan on Hygiene factors dimensions have no impact on their satisfaction level.*
- H₂ *The attributes configuring Job satisfaction of Management Teachers of Rajasthan on Hygiene factors dimension significantly influence their satisfaction level.*

To identify key variables in job satisfaction and to test the hypothesis multivariate regression analysis has been used with SPSS-19 software and results were shown in tables 4-10.

TABLE 4 Descriptive Statistics

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
WE	2.9545	0.94493	220	Hy_7	3.1091	0.87945	220
Hy_1	2.9455	1.00987	220	Hy_8	3.2727	0.80986	220
Hy_2	2.9864	0.95793	220	Hy_9	3.1591	0.82049	220
Hy_3	2.8955	0.91810	220	Hy_10	3.0364	0.83778	220
Hy_4	2.9318	0.97918	220	Hy_11	2.9773	0.93361	220
Hy_5	3.4273	0.76402	220	Hy_12	2.9455	0.92491	220
Hy_6	3.2636	0.77845	220	Hy_13	3.5000	0.93876	220

NOTES Column headings are as follows: (1) item, (2) mean, (3) standard deviation, (4) N. WE – Work_Environ.

ASSESSING OVERALL MODEL FIT

The final Regression model with 3 independent variables (Hy_11, Hy_12 and Hy_10) explains almost 93.8% of the variance of Job Satisfaction. Also, the standard errors of the estimate has been reduced to 0.23434, which means that at 95% level, the margin of errors for any predicted value of job satisfaction can be calculated as $\pm 0.4593(1.96 \times 0.23434)$. The three regression coefficients, plus the constraints are significant at 0.05 levels. The impact of multi collinerarity in the 3 variables is substantial. They all have the tolerance value less than 0.977, indicating that only over 2% of the variance is accounted for by the other variables in the equation.

ANOVA ANALYSIS

The ANOVA analysis provides the statistical test for overall model fit in terms of F Ratio. The total sum of squares (195.545) is the squared error that would accrue if the mean of Job Satisfaction has been used to predict the dependent variable. Using the values of Hy_11, Hy_12 and Hy_10 this errors can be reduced by 93.93% (183.684/195.545). This reduction is deemed statistically significant with the F ratio of 29.905 and significance at level of 0.000. With the above analysis it can be conclude that only three variables i.e., Hy_11, Hy_12 and Hy_10 explains the Hygiene factors of Job satisfaction.

Interpretation and Conclusion

This study provides a new perspective into management teacher stress factors (on hygiene factors basis) as predictors of depression and anxiety and predictors of management teacher job satisfaction not elsewhere discussed in the literature (Ferguson, Frost, and Hall 2012). It is always accepted from management teachers that

TABLE 5 Pearson Correlation

Item	WE	Hy_1	Hy_2	Hy_3	Hy_4	Hy_5	Hy_6	Hy_7	Hy_8	Hy_9	Hy_10	Hy_11	Hy_12	Hy_13
WE	1.000													
Hy_1	0.284	1.000												
Hy_2	0.040	-0.020	1.000											
Hy_3	0.221	0.486	0.009	1.000										
Hy_4	0.110	0.273	0.267	0.307	1.000									
Hy_5	0.122	0.255	0.070	0.051	-0.101	1.000								
Hy_6	0.109	0.082	0.054	0.096	0.263	-0.021	1.000							
Hy_7	0.011	0.043	0.105	-0.031	0.284	0.121	0.098	1.000						
Hy_8	0.231	0.320	0.128	0.296	0.358	0.047	-0.006	0.054	1.000					
Hy_9	-0.055	0.242	0.131	0.125	0.332	0.044	0.070	0.261	0.024	1.000				
Hy_10	0.204	0.251	-0.068	0.314	0.164	0.004	0.069	-0.173	0.093	-0.062	1.000			
Hy_11	0.962	0.280	0.040	0.210	0.088	0.129	0.096	0.036	0.226	-0.061	0.147	1.000		
Hy_12	0.953	0.266	0.035	0.230	0.137	0.124	0.109	0.047	0.239	-0.049	0.150	0.961	1.000	
Hy_13	0.077	-0.010	0.063	-0.003	0.142	0.083	0.075	0.166	-0.006	0.288	0.093	0.044	0.037	1.000

NOTES WE – Work_Environ. N = 220.

TABLE 6 Significance (1-tailed)

Item	WE	Hy_1	Hy_2	Hy_3	Hy_4	Hy_5	Hy_6	Hy_7	Hy_8	Hy_9	Hy_10	Hy_11	Hy_12	Hy_13
WE	1.000													
Hy_1	0.000	1.000												
Hy_2	0.279	0.386	1.000											
Hy_3	0.000	0.000	0.449	1.000										
Hy_4	0.052	0.000	0.000	0.000	1.000									
Hy_5	0.036	0.000	0.149	0.226	0.067	1.000								

Continued on the next page

TABLE 6 Continued from the previous page

Item	WE	Hy_1	Hy_2	Hy_3	Hy_4	Hy_5	Hy_6	Hy_7	Hy_8	Hy_9	Hy_10	Hy_11	Hy_12	Hy_13
Hy_6	0.053	0.112	0.213	0.077	0.000	0.376	1.000							
Hy_7	0.433	0.264	0.061	0.323	0.000	0.037	0.074	1.000						
Hy_8	0.000	0.000	0.029	0.000	0.000	0.244	0.465	0.212	1.000					
Hy_9	0.207	0.000	0.027	0.032	0.000	0.258	0.151	0.000	0.363	1.000				
Hy_10	0.001	0.000	0.159	0.000	0.007	0.476	0.153	0.005	0.085	0.182	1.000			
Hy_11	0.000	0.000	0.275	0.001	0.096	0.028	0.077	0.296	0.000	0.185	0.015	1.000		
Hy_12	0.000	0.000	0.302	0.000	0.021	0.034	0.054	0.246	0.000	0.236	0.013	0.000	1.000	
Hy_13	0.127	0.444	0.174	0.484	0.018	0.111	0.134	0.007	0.465	0.000	0.085	0.257	0.294	1.000

NOTES WE – Work_Environ. N = 220.

TABLE 7 Variables Entered/Removed

Model	Entered	Removed	Method
1	Hy_11	–	Stepwise (Criteria: Probability-of-F-to-enter ≤ 0.050, Probability-of-F-to-remove ≥ 0.100).
2	Hy_12	–	Stepwise (Criteria: Probability-of-F-to-enter ≤ 0.050, Probability-of-F-to-remove ≥ 0.100)).
3	Hy_10	–	Stepwise (Criteria: Probability-of-F-to-enter ≤ 0.050, Probability-of-F-to-remove ≥ 0.100)).

NOTES Dependent Variable: Work_Environ.

TABLE 8 Model Summary

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	.962 ^a	.925	.924	.26011	.925	2672.218	1	218	.000
2	.967 ^b	.936	.935	.24064	.011	37.712	1	217	.000
3	.969 ^c	.939	.938	.23434	.004	12.823	1	216	.000

NOTES (1) R, (2) R², (3) adjusted R², (4) standard error of the estimate; change statistics; (5) R² change, (6) F change, (7) degrees of freedom (8) degrees of freedom, (9) sig. F change. ^a Predictors: (constant), Hy_11. ^b Predictors: (constant), Hy_11, Hy_12. ^c Predictors: (constant), Hy_11, Hy_12, Hy_10.

TABLE 9 Anova

Model	Sum of squares	Degrees of freedom	Mean square	F	Significance
1 Regression	180.796	1	180.796	2672.218	0.000 ^a
Residual	14.749	218	0.068		
Total	195.545	219			
2 Regression	182.980	2	91.490	1579.970	0.000 ^b
Residual	12.566	217	0.058		
Total	195.545	219			
3 Regression	183.684	3	61.228	1114.976	0.000 ^c
Residual	11.861	216	0.055		
Total	195.545	219			

NOTES ^a Predictors: (constant), Hy_11. ^b Predictors: (constant), Hy_11, Hy_12. ^c Predictors: (constant), Hy_11, Hy_12, Hy_10. Dependent variable: Work_Environ.

TABLE 10 Coefficients

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 (Constant)	0.057	0.059		0.971	0.333					
Hy_11	0.973	0.019	0.962	51.69	0.000	0.962	0.962	0.962	1.00	1.000
2 (Constant)	0.014	0.055		0.250	0.803					
Hy_11	0.602	0.063	0.594	9.557	0.000	0.962	0.544	0.164	0.077	13.06
Hy_12	0.390	0.064	0.382	6.141	0.000	0.953	0.385	0.106	0.077	13.06
3 (Constant)	-0.167	0.073		-2.270	0.024					
Hy_11	0.599	0.061	0.592	9.774	0.000	0.962	0.554	0.164	0.077	13.06
Hy_12	0.383	0.062	0.375	6.190	0.000	0.953	0.388	0.104	0.076	13.08
Hy_10	0.068	0.019	0.061	3.581	0.000	0.204	0.237	0.060	0.977	1.023

NOTES Unstandardized coefficients: (1) B, (2) standard error; standardized coefficients: (3) β ; (4) t, (5) significance; correlations: (6) zero order, (7) partial, (8) part of correlation; collinearity statistics: (9) tolerance, (10) vif. Dependent variable: Work_Environ.

garding their reward system in existing Job and the management teachers of public sector were more satisfied than the private sector management teachers. While in case of other hygiene factors, the multivariate regression analysis revealed that there was a huge difference between the satisfaction levels of the private and public sector management teachers. In case of hygiene factors, major issue of concern for management teachers was flexibility in working hours which will increase their satisfaction significantly higher, while other significant variables for improving satisfaction significantly has includes Environment providing hint of Job Security and Physical Teaching conditions, which must be used as the major variable for improving satisfaction of management teachers on their present job.

Our results have both practical implications and implications for researchers interested in studying job satisfaction of management teachers at south Rajasthan. The Administration of management colleges must take a proper care of these three factors for increasing satisfaction of their management teachers.

References

- Barry, D. A. 2002. Job Satisfaction and Leadership Style: A Study of Michigan High School Principals. Doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Bishay, A. 1996. 'Teacher Motivation and Job Satisfaction: A Study Employing the Experience Sampling Method.' *Journal of Undergraduate Sciences* 3:147-54
- Blanchflower, D. G., and J. V. Oswald. 1993. *Well-Being Overtime in Britain and USA*. Hanover, NJ: Dartmouth College.
- Bridges, R. L. 1995. 'The Relationship of Job Satisfaction with Ten Independent Variables: A Study of Arkansas Secondary Assistant Principals.' Doctoral dissertation, University of Arkansas, Fayetteville.
- Brief, A. P. 1998. *Attitudes in and around Organizations*. Thousand Oaks, CA: Sage.
- Chandra, B., S. Goswami, and V. Chouhan. 2012. 'Investigating Attitude towards On-Line Advertising on Social Media: An Empirical Study.' *Management Insight* 8 (1): 1-14.
- Chouhan, V., P. Verma, H. Sanghvi, and A. Gupta. 2013. 'Assessing Worker's and Manager's Perception on Judgment Accuracy in Performance Appraisal System (PAS).' *International Journal of Engineering, Business and Enterprise Applications* 5 (1): 95-9.
- Ferguson, K., L. Frost, and D. Hall. 2012. 'Predicting Teacher Anxiety, Depression, and Job Satisfaction.' *Journal of Teaching and Learning* 8 (1): 27-42.

- Friesen, D., E. A. Holdaway, and A. W. Rice. 1983. 'Satisfaction of School Principals with Their Work.' *Educational Administration Quarterly* 19 (4): 35-8.
- Ghafoor, M. M. 2012. 'Role of Demographic Characteristics on Job Satisfaction.' *Far East Journal of Psychology and Business* 6 (1): 30-45.
- Graham, G. 1966. 'Job Satisfaction.' *Personnel Journal* 45:544-7.
- Gunn, J. A., and E. A. Holdaway. 1986. 'Perceptions of Effectiveness, Influence, and Satisfaction of Senior High School Principals.' *Educational Administration Quarterly* 22 (4): 43-62.
- Hajiha, A., J. Jassabi, and F. Ghaffari. 2013. 'The Role of Gender in Job Satisfaction of University Staff Members.' <http://www.ufhrd.co.uk/wordpress/wp-content/uploads/2009/07/6-15-refereed-paper.pdf>
- Herzberg, F. 1968. *Work and Nature of Man*. London, UK: Crosby.
- Herzberg, F., B. Mausner, R. O. Peterson, and D. F. Campbell. 1957. *Job Attitudes: Review of Research and Opinion*. Pittsburg, PA: Psychological Service of Pittsburg.
- Hoppock, R. 1977. *Job Satisfaction*. New York: Anno Press.
- Kearney, J. E. 2008. 'Factors Affecting Satisfaction and Retention of African American and European American Teachers in an Urban School District: Implications for Building and Maintaining Teachers Employed in School Districts across the Nation.' *Education and Urban Society* 40:613-27.
- Khan, S., V. Chouhan, B. Chandra, and S. Goswami. 2014. 'Sustainable Accounting Reporting Practices of Indian Cement Industry: An Exploratory Study.' *Uncertain Supply Chain Management* 2(2): 61-72.
- Kim, I., and W. E. Loadman. 1994. 'Predicting Teacher Job Satisfaction.' <http://files.eric.ed.gov/fulltext/ED383707.pdf>
- Lawler, E. E., and L. W. Porter. 1967. 'The Effect of Performance on Job Satisfaction.' *Industrial Relations* 7:20-8.
- Malik, N., 2011. 'Study of Job Satisfaction Factors of Faculty Members at University of Baluchistan.' *International Journal of Academic Research* 3 (1): 267-72.
- Maslow, A. H. 1987. *Motivation and Personality*. New York: Harper-Collins.
- Menon, M. E., E. Papanastasiou, and M. Zembylas. 2008. 'Examining the Relationship of Job Satisfaction to Teacher and Organisational Variables: Evidence from Cyprus.' *International Studies in Educational Administration* 36: 75-86.
- Newby, J. E. 1999. 'Job Satisfaction of Middle School Principals in Virginia.' Doctoral dissertation, Virginia Tech University, Blacksburg, VI.
- Olorunsola, O. E. 2010. 'Job Satisfaction and Gender Factor of Administrative Staff in South West Nigeria Universities.' Paper presented at the 2010 EABR and ETLIC Conference, Dublin, 7-10 June.

- Pearson, L. C., and W. Moomaw. 2005. 'The Relationship between Teacher Autonomy and Stress, Work Satisfaction, Empowerment, and Professionalism.' *Educational Research Quarterly* 29 (1): 37-53.
- Porter, L. 1961. 'A Study of Perceived Need Satisfaction in Bottom and Middle Management Jobs.' *Journal of Applied Psychology* 45 (1): 165-77.
- Porter, L. W., and E. E. Lawler, E. E. 1968. *Managerial Attitudes and Performance*. Homewood, IL: Irwin-Dorsey.
- Schwab, D. P., and M. J. Wallace, Jr. 1974. 'Correlates of Employees Satisfaction with Pay.' *Industrial Relations* 13:78-89.
- Sen, K. 2008. 'Relationship between Job Satisfaction & Job Stress among Teachers & Managers.' *Indian Journal of Industrial Relation* 44 (1): 19-52.
- Steers, R., and D. Braunstein. 1976. 'A Behaviorally Based Measure of Manifest Needs in Work Settings.' *Journal of Vocational Behavior* 9:251-66.
- Sutter, M. R. 1994. 'Job and Career Satisfaction of Secondary School Assistant Principals.' Doctoral dissertation, Kent State University, Kent, OH.
- Verma, P., and V. Chouhan. 2014a. 'Improving Effectiveness of Performance Appraisal Tool: Who Thinks That It Uses Improved Techniques?' *Business Spectrum* 4 (1): 71-82.
- . 2014b. 'Measuring Validity of Performance Appraisal Tools in Performance Appraisal System.' *Nirnay: The Journal of Decision Science* 6(1): 57-64.
- Weiss, H. M., and R. Cropanzano. 1996. 'Affective Events Theory: A Theoretical Discussion of the Structure, Causes and Consequences of Affective Experiences at Work.' In *Research in Organization Behavior: An Annual Series of Analytical 20 Essays and Critical Reviews*, edited by Staw B. M. and L. L. Cummings, 1-74. Greenwich; CT Publications.
- Zembylas, M., and E. Papanastasiou. 2006. 'Sources of Teacher Job Satisfaction and Dissatisfaction in Cyprus.' *Compare: A Journal of Comparative Education* 36:229-47.



This paper is published under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Managing for Success: The Role of Transactional and Relational Mechanisms in Buyer-Supplier Relationships

KHURAM SHAHZAD

University of Vaasa, Finland
khuram.shahzad@uva.fi

JOSU TAKALA

University of Vaasa, Finland
josu.takala@uva.fi

TAHIR ALI

University of Vaasa, Finland
tali@uva.fi

ILKKA SILLANPÄÄ

University of Vaasa, Finland
ilkka.j.sillanpaa@gmail.com

Firms are collaborating more in supply chain network and identified the importance of business relationships. This idea was embraced by academic and empirical research in operations management since last decade. Therefore, the purpose of this study is to develop a comprehensive integrated conceptual and empirical framework which elaborates the role of transactional and relational factors to highlight buyer-supplier relationship performance. While, limited studies explored these factors separately neither provide the dynamic interactive role of transactional and relational factors in an integrated framework. Through multiple case studies, findings reveal that impact of relational factors of trust and communication has constructive influence in reducing the transaction cost and improving relationship performance. This study contributes to debate on managing complex business network relationships by providing a combined theoretical setting (transaction cost economics and social exchange theory) and empirically proven integrated model. Managers can enhance the operational performance by selecting the most suitable constructs.

Key words: buyer-supplier relationship, transactional mechanism, relational mechanism, case study, operational performance, transaction cost

Introduction

Pressures to build and sustain global competitive advantage during the last two decades have changed the way firms engage in business.

Strategically management of buyer-supplier relationships have become most important drivers of sustainable competitive advantage and observed in both academic and practitioner literature. Particularly, the role of transactional mechanisms and relational mechanisms in supply chain network is becoming more and more crucial (Roden and Lawson 2014). As a result, there is a shift from 'hierarchical capitalism' to 'business networks' (Li et al. 2010). Buyer-supplier relationships have become a panacea for foreign firm's competitive and innovations anguishes; resource constraints; rising costs and risks (Corsten, Gruen, and Peyinghaus 2011).

However, despite their popularity and importance, research and anecdotal evidence show that managing buyer-supplier relationships have become a challenge in supply chain network (Dyer 1997). This has led researchers to investigate a wide range of factors that ensure the success of these relationships. Recently, meta-analysis studies have been conducted on purchasing and supply chain management (PSM) and supply chain integration (SCI) linking these factors positively related to firm's performance (Leuschner et al. 2013; Zimmermann and Foerstl 2014). While these limited studies have richly probed the role of transactional and relational factors on buyer-supplier performance, there is need to develop a comprehensive framework that explains transactional as well as relational forces within an integrated theoretical and empirical model to explain the performance of buyer-supplier relationships.

Therefore, the purpose of this study is to examine the underlying impact of transactional and relational factors in buyer-supplier relationships through multiple case studies. Two theoretical perspectives; transaction cost economics (TCE), and social exchange theory (SET) are integrated in this study to see how effectively firms manage their relationships with their suppliers. Such a theoretical pluralistic approach will help to uncover rich explanations about the management of buyer-supplier relationships. In order to get in-depth understanding about the impact of transactional and relational factors on buyer-supplier relationship performance and transaction cost, this study is based on qualitative investigation. For the purpose, three Finnish companies were interviewed in 2014 that are involved in developing business relationships with their key suppliers (local and international). Thus, this study contributes in a discussion of managing and developing business relationships by providing empirical explanation of combined transactional and relational factors and their impact on transaction cost and performance.

As a consequence, we investigate the following research question:

How do the transactional factors of contract completeness and interdependence, and relational factors of trust and communication affect the buyer-supplier relationship outcomes?

The main research question can further be divided in the following sub-questions. First, *how and why do transactional factors effect transaction cost between buyer and supplier?* Second, *how and why do relational factors influence cost between buyer and supplier?* Third, *how can transactional and relational mechanisms and reduced transaction cost enhance the overall firm's performance?*

The remainder of this study is organized as follows. In the next section, literature review is presented. This is followed by a description of empirical section which presents research methodology. Next section provides results with discussion of these factors. After presenting the discussion and implications of the results, the paper concludes with some managerial implications, limitations and suggestions for further research.

Literature Review

Over the past decades, several theories have been applied to explain the rationality of buyer-supplier relationships. Among the utmost, transaction cost economics, resource based view, institutional theory and social exchange theory are the most important and vibrant theories in this field commonly. In this study, theoretical framework is drawn from the transaction cost economics and social exchange theory. In general, both theories have a common aim of explaining how buyer-supplier relationships are managed. However, the tools, each theory proposes to manage the buyer-supplier relationships are different. Transaction cost economics focuses on the structural mechanisms (i.e., contract between buyers and sellers, specific asset investments between buyer and supplier) to efficiently manage the buyer-seller relationships (Williamson 1985; Brouthers and Hennart 2007). On the other hand, social exchange theory focuses on the social mechanism of trust and level of information sharing to manage the buyer-supplier relationships (Madhok 1995; Johnson et al. 1997; Muthusamy et al. 2007; Lin and Wang 2008).

As the purpose of this study is to find out how transactional and relational factors regulate buyer-supplier relationship outcomes, these factors can be justified rationally by integrating these two theories together. Similarly, structural mechanisms are principally rooted in TCE (Williamson 1985), and social mechanisms mainly exist in SET (Blau 1964). Choice of theory depends upon the nature of problem that is why; this paper integrates both perspectives (TCE and SET) to

encounter the objectives. In the supply chain literature, transaction cost economics (TCE) and social exchange theory (SET) provided a rich explanation of transactional and relational factors. Several researchers highlighted and used the theoretical perspectives of transactional (structural) and relational (social) rationale separately but in detail (Dyer 1997; Liu, Luo, and Liu 2009; Li et al. 2010; Nyaga, Whipple, and Lynch 2010; Corsten, Gruen, and Peyninghaus 2011; Roden and Lawson 2014). Consequently, resource-based view was not integrated because the factors under research question cannot be addressed according to the objectives of the study.

Sillanpää and Sillanpää (2014) developed a strategy framework explaining supply chain which combines corporate strategy, supply chain demand strategy, and business environment together. While the framework by Sillanpää, Shahzad, and Sillanpää (2015), explains the analysis of supplier development and buyer-supplier relationship strategies (supplier assessment, competitive pressure, supplier incentives, and direct involvement) influencing the business performance. Therefore, several researchers have highlighted the important role of supplier selection, and supplier's involvement in strategic decision making process (Choy, Lee, and Loo. 2002; Song and Di Benedetto 2008; Ho, Xu, and Dey 2010; Hammami, Temponi, and Frein 2014) to achieve effective supply chain.

Dyer (1997) study on United States and Japan supplier-automakers international cooperative alliances depict that trust and mutual hostages help to reduce automakers transaction costs and enhance transaction value. In the same vein, Zaheer, McEvily, and Perrone (1998) study on United States buyer-supplier relationships depict that presence of organizational trust reduces negotiation costs and increases performance of buyer-supplier relationships. Similarly, Artz and Brush (2000) study on 393 original equipment manufacturer (OEM) supplier relationships in United States depict that presence of collaboration, continuity expectation, and communication strategies lower negotiation costs in OEM-supplier relationships. Finally, the Dyer and Chu (2003) study on 344 Supplier-automaker relations in United States, Japan, and Korea show that presence of trust reduces monitoring and enforcement costs and positively relates with buyer's profit performance.

Hence transaction costs are measured as negotiation costs (Zaheer, McEvily, and Perrone 1998; Artz and Brush 2000), and contractual costs, monitoring and enforcements costs (Dyer and Chu 2003). In some studies, (1) the presence of trust is considered to reduce transaction costs (Dyer 1997; Zaheer, McEvily, and Perrone

1998; Artz and Brush 2000; Dyer and Chu 2003), (2) and trust and the presence of hostage are considered as both reducing transaction costs (Dyer 1997) and enhancing performance. Apart from measuring transaction cost in these few empirical studies, there are some studies which have identified the structural mechanism (i.e. contract, symmetric dependence, hostages) to manage the buyer-supplier relationships and linking them with buyer-supplier performance (Poppo and Zenger 2002; Woolthuis, Hillebrand, and Nooteboom 2005; Williamson 1985).

TRANSACTIONAL AND RELATIONAL MECHANISMS

Transactional mechanisms explain the economic rationality and governing these relationships through monitoring and incentive based structures (Heide and John 1992; Jap and Ganesan 2000). Moreover, the relevant literature of buyer-supplier relationship performance and the factors involve including the literature of transactional mechanisms inspired by the transaction cost economics (TCE) of Williamson (1985). On the other hand, relational mechanism focuses on governing and managing these relationships through moral control and in cooperative environment (Liu, Luo, and Liu 2009). Further, relational mechanisms manage and supervise the social connection and cooperation based on relational norms in business relationships. In this way, trust and relational norms from social exchange theory (SET) are to find out the impact on performance and opportunism (Liu, Luo, and Liu 2009; Heide and John 1992). This contributes in the literature by highlighting the relative effectiveness of these mechanisms in reducing the opportunism and enhancing the relationship performance and explores these mechanisms (Liu, Luo, and Liu 2009; Heide and John 1992; Jap and Ganesan 2000).

Li et al. (2010) highlighted the important antecedents that lead to the adoption of social and formal control in long term buyer-supplier relationships. Control mechanisms are the structural arrangements between the organizations to manage the behaviour of both parties in the relationship (Fryxell, Robert, and Maria 2002). Further, Li et al. (2010) used formal control (relies on contracts) and social control (relies on informal means) to find out their impact on the performance. In this paper, the authors filled the research gap by adding the view of social network theory and institutional view in addition to transaction cost economics (TCE). Most of the existing literature has been applying transaction cost economics and identified several control factors in buyer-supplier relationship (Poppo and Zenger

2002; Reuer and Ariño 2002; Williamson 1985; Wuyts and Geyskens 2005).

Moreover, existing literature has been generated the significant insight into the control mechanisms but the findings are not consistent over time. In this vein, Zhou et al. (2003) highlighted three logics to manage the behaviour of firms in relationship 1) transactions costs, 2) social relations, and 3) institutional constraints. Existing literature argue that formal control and social control mechanisms are substitute (Dyer and Singh 1998; Gulati 1995; Uzzi 1997). On the other hand, some argue that these control mechanisms are not substitute but complementary in explaining the firm's performance (Luo 2002; Mesquita and Brush 2008; Poppo and Zenger 2002; Wuyts and Geyskens 2005).

Similarly, Corsten, Gruen, and Peyinghaus (2011) presented the understanding of buyer-supplier identification role in operations management. They applied the construct of buyer-supplier identification in the relationship by using social identity theory by mentioning different constructs of buyer-supplier identification like trust, information sharing, knowledge sharing, and relation specific investment. This factor of supply chain which provides competitive advantage, theoretically proposed (Ireland and Webb 2007) but not empirically tested and analysed so widely. Recently, some scholars have extended the conceptual framework of identification in supply chain research (Dyer and Hatch 2006; Ireland and Webb 2007).

Moreover, Corsten, Gruen, and Peyinghaus (2011) argued that supplier-to-buyer identification has an impact on the behaviours between the organizations which lead towards the operational performance. On the other hand, this identification of inter-organizational partners can be linked with information exchange which helps to explain the operational performance of the firms. Furthermore, if there is a trust in place between these notions, it would impact directly in both relationship factors by enhancing the operational performance. Importance of management of trust has become more vibrant in the organizations. Paliszkiwicz (2011) evaluated the advancements and setbacks of trust management in organizations. There is a comprehensive consensus among trust scholars that trust is clearly a sociological phenomenon which principally emerges among individuals, however, it can also be established between organizations if 'the positive expectations of the intentions or behaviour of another [organization]' are shared by a dominant coalition of the individuals in both organizations engaged in the collaborative transaction (Zaheer, McEvily, and Perrone 1998).

Transactional and relational factors still can be seen in literature as both complements and substitutes in buyer-supplier relationship. However, prior empirical studies have been unsuccessful to reveal *how* and *why* these transactional and relational factors are substitutes or compliments in buyer-supplier relationship. Several studies have presented quantitative and cross sectional data about the buyer-supplier relationship development but *how* and *why* these relationships can be developed are not uncovered explicitly. This study provides an insight of this phenomenon in a case study method where three cases were analysed profoundly to identify the impact of transactional and relational factors in buyer-supplier relationships.

RESEARCH FRAMEWORK

Prior literature presents clear understanding of transactional and relational mechanisms, widely used in several supply chain research papers. A rhetoric discussion of successfully managing supply chain management and business networks provides a concrete knowledge of significant factors supported by different theories. Though, these factors are scattered on the canvas of rich supply chain literature with different behaviours but today's need is to collate those factors in order to streamline and develop strategic buyer-supplier relationship. The framework combines all the mentioned significant features that help companies to enhance the operational performances in inter-organizational relationships and to reduce the transaction cost. Figure 1 presents the research framework based on the research objectives and collate transactional and relational factors from prior literature.

The important factors in research framework do not only have interaction between them but also have a significant impact to hinder opportunism and transaction cost (Williamson 1985) in explaining the performance of relationships. Moreover, this study not only advances the understanding and importance of inter-organizational networks but also provides an analytical framework as a synthesis of significant transactional and relational mechanisms.

Research Design and Methods

This study employs a case study approach (Yin 1994; Eisenhardt 1989; Eisenhardt and Graebner 2007) to get insight under question phenomenon. This study is framed within the background of TCE and SET to testify how the identified key variables behave in different business environments. Similarly, the research question is strictly scoped within the context of TCE and SET to get an insight of

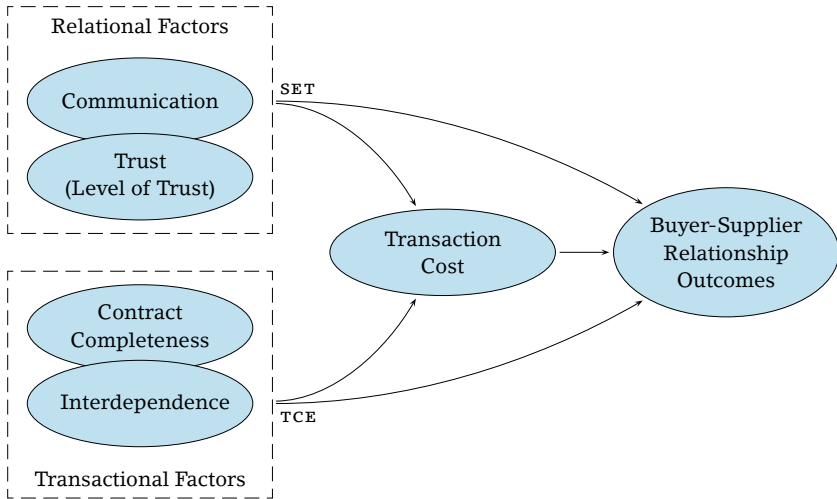


FIGURE 1 Research Framework

transactional and relational mechanisms (Eisenhardt and Graebner 2007). Therefore, this research design helps us to get a better understanding and real-world context of buyer-supplier relationship outcomes in natural setting (Bonoma 1985; Yin 1994; Eisenhardt and Graebner 2007).

A multiple case study provides the external validity because of comparative analysed results by within case and cross case analysis thereby employing replication logic (Yin 2003; Eisenhardt 1989). It provides the advantage in increasing the likelihood of developing accurate findings extracting from collected data and better information to identify the transactional and relational factors and their pattern in particular (Ghauri 2004; Yin 2003). The lack of qualitative research in this topic led to identify the significant factors and select an exploratory method based on grounded theories (Glaser and Strauss 2009).

THE THREE CASE STUDIES

Three manufacturing cases from Finland were selected based on the equal level of operations, cultural closeness and suitability of relationship factors which prevails the logic among constructs (Eisenhardt and Graebner 2007). The cases are not selected to be representative of the population of buyer-supplier relationships, but as explanatory substance to validate the testability of transactional and relational factors.

Case A is a global leader based in Finland and compelled by an urge to produce, manufacture, and sell electric drives and inverters in the world. It has a huge suppliers' network with hundreds of key suppliers selected based on quality level, costs and capability to handle 'high mix low' volume that provide capital component supplies to run their daily operations. *Case company B* based in Finland leads in power and automation technologies and success was driven by a strong concentration on research and development along with long track record of innovation. This case started relationship with this key supplier three years ago and selected based on quality assurance, cost, and dynamic capability. *Case company C* is engaged in products and services for customer's value and effectiveness globally and one of the global leaders in their operations and serves a huge number of customers. They have established a supplier development system to enhance the operational performance between buyer and supplier to strengthen their supply base. This relationship was started in 2000 and case company considered many parameters during the selection (e.g. outsource production facility, quality, cost, delivery time etc.).

DATA COLLECTION

As purpose of this research is to find out insight impact of transactional and relational mechanisms in developing buyer-supplier relationship, data was collected from selected cases keeping the importance of these mechanisms in mind. Semi-structured interviews including measurement items (see appendix 1) were conducted to collect data in order to achieve a certain level of comparability (Bryman 2004). Each interview was held face to face with voice recording and then transcribed to ensure high degree of reliability and traceability (McCutcheon and Meredith 1993).

This study contains a high level of dependability and reliability because of the process followed recommended by Miles and Huberman (1984) and Hill, Thompson, and Williams (1997), where two authors collected data from the cases in order to enhance the creative potential. One informant (top management level) from each selected case company was picked up for interview (three interviews in total). Interviews lasted an average of two hours where each interview was recorded and transcribed. The primary focus was to obtain the information regarding transactional and relational factors in their buyer-supplier relationship that could not be retrieved from secondary sources. The informants in selected case companies were at top level managerial positions, all of whom were typically respon-

sible in daily operations, and having direct strategic interaction with suppliers. Anonymity of company sources was confirmed in report findings to communicate openly with the respondents which provided a comfort level to respondent.

CONSTRUCT OPERATIONALIZATION AND DATA ANALYSIS

A case protocol was written as recommended by Yin (1994) to establish a comparison between selected cases and quality of case analysis. The idea of case protocol was written to identify the transactional and relational factors and their impact on relationship outcomes and to measure these factors through in-depth interviews.

Contract completeness was measured by asking overall nature of the contract in terms of its importance between two parties, operating procedures, types of conflict resolution clauses, termination, unanticipated contingencies, and quality of distributed resources between buyer and supplier. Further, *interdependence* was measured using a systematic approach in buyer-supplier relationship where the amount and ratio of resources invested by two parties were analyzed. *Communication* was measured by asking quality, frequency, and openness of communication between the parties. *Trust* was measured by inquiring the overall assessment of this phenomenon between the parties in respondent's perspective. *Transaction cost* was measured by asking the frequent cost occurred in terms of negotiation, consumed time in handling conflicts, and monitoring the supplier's operations. On the other hand, *relationship outcomes* have been measured by using the criteria of overall performance, profitability, just in time delivery, manufacturing/quality, cost control, cost compared with other suppliers, and satisfaction level of this relationship.

The collected data was analyzed using qualitative data analysis techniques: data-driven thematic analysis and putting all the information in classified chronological order to uncover the detailed elements of transactional and relational mechanisms in relationship outcomes (Miles and Huberman 1994). We followed the recommended steps to analyse the collected data where recorded interviews were broken down in the context of constructs accordingly. Each case was analyzed separately, then a cross-case analysis done to identify the similarity and differences of these mechanisms in different cases (Ragin 1994; Eisenhardt 1989). The consistency analysis between empirical findings and theoretical arguments across cases were utilized to draw conclusions. Figure 2 elaborates the complete process of research methodology employed for this research.

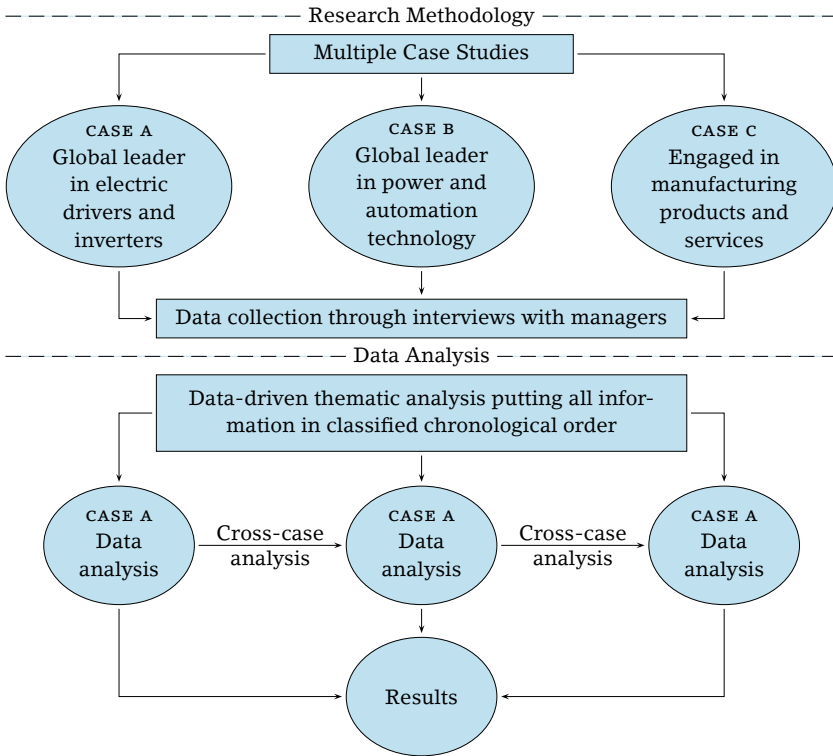


FIGURE 2 Research Design

Research Findings

Supplier and respondent names were decided to keep anonymous, so with analyzed results of transactional and relational factors in buyer-supplier relationship outcomes are presented. This section describes how these mechanisms are perceived and operationalized case by case, and then comparative analysis findings are presented.

CASE A

Transactional Characteristics of Relationship in Case A

Interview with respondent from Case A has revealed that they trust their key supplier significantly which makes their position very strong in this relationship, they deal and negotiate openly in the time of crises. A written contract is emplaced between buyer and supplier but at the same time they prefer the organizational culture and communicate openly if they need to resolve a conflict between them. In this case, they have very strong bonding with their key sup-

plier and contract has a low impact in managing this relationship which effectively influences the relationship outcome positively.

In this cooperation, both parties have invested massively to manage and to keep the operations smooth. Both parties have invested in knowledge transfer, know-how, quality testing systems, automated order transactions, lean production, training, engineering drawings etc. This huge investment by both parties makes the more independent on each other. Interdependence is quite high in this case where both parties have invested capital resources for the relationship. The ratio of these resources is about 50–50% by investing financial, managerial, technological, and physical resources for relationship development.

Relational Characteristics of Relationship in Case A

The quality, frequency, and openness are considered to be important while communicating with their suppliers. Similarly, in this case communication employed is formal and informal to solve the conflicts timely which always help for better operational results. So, this shows the high frequency level of communication between two parties in this particular case. In this particular case, trust was not built from very first day but developed gradually. Similarly, trust has developed and become a strong reason to eliminate several problems and costs.

Relationship Outcomes in Case A

The impact of transactional and relational factors on reducing the transaction cost show that situations may differ case by case. Transactional and relational factors provide the opportunity to run the business smoothly and build strong bonding with suppliers. Following this approach, they are helpful in reducing the cost but sometimes negotiations on different issues can be a reason to bear extra costs. Because this relationship started in 1999, they have therefore built trust, communication, asset specific investments, and action plans in their operations. The opportunism factor has been almost vanished from this relationship. In the following table 1, respondent's view upon transactional and relational factors in Case A is stated.

CASE B

Transactional Characteristics of Relationship in Case B

In this case, interdependence is asymmetric in nature even both parties have invested little resources for this relationship and they are

TABLE 1 Respondent’s View upon Transactional and Relational Factors in Case A

Respondent’s view upon Contract	‘Of course contract has a significant value in any of the relationship and sometimes it becomes really important when unanticipated events happen but in our case, the most important thing is relationship and way of thinking rather contracts.’ The respondent further explained that: ‘Contracts do not contain everything so, we only need to come on table to discuss about any unpredicted situation.’
Respondent’s view upon Interdependence	‘Both of us (buyer and supplier) have invested in a huge amount of resources for this relationship where dependence level is very high because they have our product drawings (tailor made product) and we are their giant customer.’
Respondent’s view upon Communication	‘We communicate with our key supplier very frequently about any specific issues in our monthly meetings and I do not find any problem while communicating with us from their side.’
Respondent’s view upon Trust	‘Trust is everything in personal level relationship as well as in company level relationship and we are happy that our supplier fulfils the promises in time and we have a great confidence on its integrity.’
Respondent’s view upon Relationship Outcomes	‘Sometimes, companies need to bear the costs of continuous improvement in operations while dealing with their key suppliers.’
Respondent’s view upon Relationship Outcomes	‘Communication atmosphere is quite open to improve the operations and to solve the problem which means we are not bearing the high level of negotiation, decision making, monitoring, and information sharing cost but we have to be more cost effective tomorrow than today. Costs, quality, time, and technology are the elements that should be improved all the time to build strong and long term relationship.’

one of the main customers for the supplier. The reason behind of being asymmetric interdependence is that the age of relationship is just three years and both parties want to share their resources more. Further, if relationship dissolves, the tangible resources can be recovered and used again. Most important issues regarding operations, management, conflicts, and contingencies plans are being followed in this relationship as stated in the contract.

Relational Characteristics of Relationship in Case B

Both parties carry quite the same organizational culture, so they are familiar with each other’s way of working where they can trust on. This shows that there is a medium level of trust developed in this relationship which is quite obvious due to lesser years of this relationship. Moreover, communication in this relationship is also integral part and they usually do not face problems because of same cultural

values in communication and understandings. Both parties are quite accustomed with organizational norms. In this buyer-supplier relationship, communication part is more open and frequent because of turbulent business type where product and production line change in short time and they need frequent and open communication to keep it updated.

Relationship Outcomes in Case B

In this specific relationship, both parties carry some costs in terms of negotiations, combine decision making, monitoring quality of supplied components and information sharing cost. So, the transaction cost overall is a bit higher because of newly made relationship. The relationship performance is at the medium level even the supplier in this relationship is a capital supplier. They have good relationship but both parties still want to improve their operations between them and trying to balance between the cost, just in time (JIT), quality and dynamic capability in a way that they achieve a reasonable level of relationship performance. In the following table 2, respondent's view upon transactional and relational factors in Case B is stated.

CASE C

Transactional Characteristics of Relationship in Case C

It is already stated that Case company C owns 50% of the shares of its key supplier, so quite obviously they have invested a huge amount of resources in terms of financial, managerial, technological know-how, and physical resources in this relationship. Similarly, in this relationship, both parties are dependent on each other and an asymmetric dependence exists because it is quite difficult for both parties to find new supplier and buyer respectively. Huge investments do not allow both parties to dissolve this relationship and recover the invested resources which reduce the fear of opportunism at the same time. Exploiting the invested resources seems difficult in this relationship because of a high level of investment for the relationship. Contract also describes the situations therefore, if any conflicts between parties arise, both parties try to solve a conflict by negotiation or by court in worse situation.

Relational Characteristics of Relationship in Case C

In case C where communication between parties is the key factor, it always tries to be open and keep informed their supplier about changes that may affect other parties to avoid any ambiguity and vagueness. This fluent and frequent communication poses that both

TABLE 2 Respondent's View upon Transactional and Relational Factors in Case B

Respondent's view upon Interdependence	'We want to share our knowledge and resources with our suppliers but it will be built gradually. Our supplier also has reformed their production to fulfil our quality requirements.'
Respondent's view upon Contract	'Contract is very complicated and in detailed all about the operations and management but still we do business according to the written clauses of the contract for most important issues but I still believe that in a problem situation, trust plays an important role.'
Respondent's view upon Trust	'Trust is not of course enough, operations must be transparent to build up trust in a relationship. Suppliers need to be very open in any situation and if they are transparent, then trust comes in the relationship.'
Respondent's view upon Communication	'According to my understanding, we try to fulfil our promises and I think due to same norms and values, our supplier also do the same. Our supplier communicates honestly and openly if they are not able to fulfil promises and they do their best for it.'
Respondent's view upon Relationship Outcomes	'It depends upon the conflict, but we put all the related issues under considerations and try to solve it as soon as possible. Our supplier is expert but if we are unhappy with the operations, we consider negotiating for related issues and decision is made by the managements of both parties.'
Respondent's view upon Overall Performance	'I cannot see big issues in this relationship overall and we are quite happy and satisfied but we expect that our supplier will improve their operations in future to prolong the relationship and to develop good terms.'

parties provide important and timely information each other to avoid any unprecedented conflicts. Further, trustworthiness in a relationship is significant and no relationship could be developed without trust. Case company C has a high degree of trust on their supplier and vice versa.

Relationship Outcomes in Case C

This case however faces challenges in strategic decision making for being global company but supplier is very efficient and it compensates the transaction cost. Quality standards are already agreed between them, which means no extra cost for monitoring the quality level of components exists. Thus, this relationship has developed already a certain level of understanding between the parties for their capital transactions and interfaces for supplier integration are developed for information sharing that allows both parties to reduce their transaction cost. The respondent rated high for overall performance and both parties are quite satisfied with their relationship. They are

TABLE 3 Respondent’s View upon Transactional and Relational Factors in Case C

Respondent’s view upon Transactional Characteristics	‘All the clauses regarding termination and operating procedures of contract are agreed between the parties but we cooperate and build relationship with our supplier based on trust and fair communication which we consider is a key aspect for relationship development.’
Respondent’s view upon Transactional Characteristics	‘Both of parties need to solve a conflict if any by negotiating or compromising otherwise we can follow the legal clause of the contract by knocking the court’s door but it has been very seldom in our case because we never face this kind of situation in this relationship.’
Respondent’s view upon Communication	‘Both of the parties try to be open in communicating any changes in procedures or operations to avoid conflicts and we do not feel any resistance or hesitation because relationship is working perfectly for last 11 years and further we do not spend a lot of time for meetings etc.’
Respondent’s view upon Trust	‘First of all, our supply chain is integrated and of course there are issues every now and then but they do not affect our relationship because we understand each other’s operations and mostly our supplier fulfil all of its promises which enhance the trust level in our business relationship.’
Respondent’s view upon Relationship Outcomes	‘We have developed supplier integration program where both of the parties have easy access to the technical documents, product drawings, information sharing etc., and overall transaction cost between the parties is very low.’

committed to continue the relationship for longer term and want to enhance the transaction value.

COMPARATIVE CASE FINDINGS

Table 4 summarizes the comparative impact of degree of transactional and relational mechanisms in three analyzed case companies. It describes the level of these mechanisms in their operations for relationship outcomes. Based on the results, we have described the degree of these mechanisms in buyer-supplier relationship as low, medium, and high which identify the factors need to be improved. This rating of low, medium, and high in table 4 was achieved and determined by particular existence level of transactional and relational mechanisms in the cases. This is followed by Woolthuis, Hillebrand, and Nooteboom (2005) who selected the extremes of low versus high to discover the research question. Hereby, we have divided the degrees into three extremes low, medium, and high to achieve the comprehension and rationale of research objectives. Further, the answers were analyzed and transcribed into the ratings to make it more clear and understandable. This clarifies not only the developed per-

TABLE 4 Degree of Transactional and Relational Mechanisms in Cases

Mechanism	Category	Case A	Case B	Case C
Transactional mechanisms	Interdependence	Symmetric	Asymmetric	Symmetric
	Contract	Low	High	Low
Relationship Mechanisms	Communication	High	Medium	High
	Trust	High	Low	High
Buyer-Supplier Relat. Outcome	Transaction cost	Medium	High	Low
	Overall performance	High	Medium	High

ception of these mechanisms into respondents’ mind but also identify what the significant factors to be improved.

Based on the analyzed results summarized in table 4, this study provides comparative findings of transactional and relational factors. As we can see that in Case A, interdependence between parties is symmetric which help to reduce the opportunism level in relationship. Further, the impact of contract is quite low which illustrates that both parties try to resolve their conflicts based on the trust. Similarly, communication and trust in Case A have high impact in developing the relationship that posits the positive impact on relationship performance. Finally, transaction cost has a medium impact in this relationship, which recommends that they need to further think about their transactions with supplier more in detail to evaluate how they can reduce transaction cost.

Case B posits results unlike Case A, where transactional mechanisms need to be improved. These results endorse the both parties to invest more for the relationship, which will affect their interdependence level and reduce opportunism between the parties. Because this relationship is newly made (3 years), they need to develop trust between each other to enhance the transaction value of relationship. If relational mechanisms have developed in an organization, companies mutually solve conflicts and unpredicted situations. Symmetric interdependence provides the opportunity for both parties to prolong relationship with good terms and to enhance relationship performance.

On the other side, Case C is quite unique between three cases because it does not only have good relationship with supplier but it also has ownership in supplier’s assets. In this situation, interdependence will always be symmetric and fear of opportunism will be very low. Contract between both parties will exist but they will try to solve all the problems and conflicts in a win-win situation. In this case, trust and communication has a high impact on relationship

performance because they do not need to negotiate frequently for certain issues. Trust always reduce the possibility of negotiation and transaction cost.

Conclusion

This paper empirically demonstrates the impact of transactional and relational mechanisms on transaction cost and buyer-supplier relationship performance. To examine the role of these mechanisms in relationship performance, this study produces an empirically tested research framework based on two major theoretical perspectives: transaction cost economics and social exchange theory. Previous research lacks in identifying generally the role of transactional and relational factors in developing buyer-supplier relationship and more specifically measuring the transaction cost. It also lacks in evaluating these mechanisms together for a specific relationship in multiple case study where the knowledge can be acquired in detail.

This study uncovers that relational mechanisms are more effective than transactional mechanisms on relationship performance. Trustful atmosphere between parties facilitate to resolve the conflicts and safeguard the contingencies that in result enhances transaction value and reduces transaction cost. The collected data from Finnish cases with same organizational culture indicate that trust and communication are the most important factors in developing long-term relationships with business partners. Findings also show that transactional factors have significant effect in developing buyer-supplier relationship. This means that symmetric interdependence reduces the potential of uncertainty of outcomes, replicates a level of competitive and synergetic relationship nature and develops higher transaction value (Mahapatra, Narasimhan, and Barbieri 2010; Hendrikse and Windsperger 2011; Pfeffer and Salancik 2003, 41).

Most importantly, this study presents empirically tested integrated framework which combined significant factors of *TCE* and *SET*. This kind of combination does not only highlight the importance of these factors but also to answer the question of how and why these factors influence the buyer-supplier operations. Our findings show the impact of transactional and relational factors on transaction cost between buyer and supplier and how to hinder the opportunism. Because this study examines these factors from buyer perspective, it provides a new dimension to buyers to integrate and reconsider these factors while making decisions to get competitive advantage.

The findings contribute to existing research on the management of buyer-supplier relationship by developing an integrated framework

of social exchange theory and transaction cost economics. Moreover, a case study explores the significance of transactional and relational mechanisms for buyer-supplier performance. This finding provides an insight for the managers to understand the importance of these mechanisms in their operations to build up strong relationships not only to improve performance but also to reduce transaction cost. Managers can enhance the operational performance by selecting the most suitable construct in developing long-term relationship with their suppliers.

FURTHER RESEARCH

It is important to note that this study contains limitations which provide future research prospects. Our study focuses on Finnish manufacturing industry by selecting three case companies. Interesting future research can be done by adding more cases to get a comprehensive overview of the constructs used in the study. Future research can be developed a full set of characteristics within the model along with a strong aspect of culture to be tested in Nordic countries. This viewpoint will provide more generalized and interesting findings due to different cultural norms. For example, *trust* and *communication* play a crucial role in developing buyer-supplier relationship in Finnish organizational culture. It would be interesting to see the extent and effectiveness of this framework in other countries too. Finally future research should attempt to identify some other supplementary factors contributing to reduce transaction cost and to develop buyer-supplier relationships. Quantitative study with a sufficient number of respondents is quite an interesting idea to test the proposed integrated framework in further research.

References

- Artz, K. W., and T. H. Brush. 2000. 'Asset Specificity, Uncertainty and Relational Norms: An Examination of Coordination Costs in Collaborative Strategic Alliances.' *Journal of Economic Behaviour and Organization* 41 (4): 337-62.
- Blau, P. M. 1964. *Exchange and Power in Social Life*. New York: Wiley.
- Bonoma, T. V. 1985. 'Case Research in Marketing: Opportunities, Problems, and a Process.' *Journal of Marketing Research* 22 (2): 199-208.
- Brouthers, K. D., and J. F. Hennart. 2007. 'Boundaries of the Firm: Insights from International Entry Mode Research.' *Journal of Management* 33 (3): 395-425.
- Bryman, A. 2004. 'Qualitative Research on Leadership: A Critical But Appreciative Review.' *The Leadership Quarterly* 15 (6): 729-69.

- Choy, K. L., W. B. Lee, and V. Lo. 2002. 'Development of a Case Based Intelligent Customer-Supplier Relationship Management System.' *Expert systems with Applications* 23 (3): 281-97.
- Corsten, D., T. Gruen, and M. Peyinghaus. 2011. 'The Effects of Supplier-to-Buyer Identification on Operational Performance: An Empirical Investigation of Inter-Organizational Identification in Automotive Relationships.' *Journal of Operations Management* 29 (6): 549-60.
- Dyer, J. H. 1997. 'Effective Inter-Firm Collaboration: How Firms Minimize Transaction Costs and Maximize Transaction Value.' *Strategic Management Journal* 18 (7): 535-56.
- Dyer, J. H., and W. Chu. 2003. 'The Role of Trustworthiness in Reducing Transaction Costs and Improving Performance: Empirical Evidence from the United States, Japan, and Korea.' *Organization Science* 14 (1): 57-68.
- Dyer, J. H., and N. Hatch. 2006. 'Using Supplier Networks to Learn Faster.' *Sloan Management Review* 45 (3): 57-63.
- Dyer, J. H., and H. Singh. 1998. 'The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage.' *Academy of Management Review* 23 (4): 660-79.
- Eisenhardt, K. M. 1989. 'Building Theories from Case Study Research.' *Academy of Management Review* 14(4): 532-50.
- Eisenhardt, K. M., and M. E. Graebner. 2007. 'Theory Building from Cases: Opportunities and Challenges.' *Academy of Management Journal* 50 (1): 25-32.
- Fryxell, G. E., D. S. Robert, and V. Maria. 2002. 'After the Ink Dries: The Interaction of Trust and Control in us-Based International Joint Ventures.' *Journal of Management Studies* 39:865-87.
- Ghuri, P. 2004. 'Designing and Conducting Case Studies in International Business Research.' *Handbook of Qualitative Research Methods for International Business*, edited by R. Piekkari and C. Welch, 109-24. Cheltenham: Edward Elgar.
- Glaser, B. G., and A. L. Strauss. 2009. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Piscataway, NJ: Transaction.
- Gulati, R. 1995. 'Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances.' *Academy of Management Journal* 38 (1): 85-112.
- Hammami, R., C. Temponi, and Y. Frein. 2014. 'A Scenario-Based Stochastic Model for Supplier Selection in Global Context with Multiple Buyers, Currency Fluctuation Uncertainties, and Price Discounts.' *European Journal of Operational Research* 233 (1): 159-70.
- Hendrikse, G., and J. Windsperger. 2011. 'Determinants of Contractual Completeness in Franchising.' In *Developments in the Theory of Networks: Franchising, Alliances and Cooperatives*, edited by M. Tuunanen, J. Windsperger, G. Cliquet, and G. Hendrikse, 13-30. New York: Springer.

- Heide, J. B., and G. John. 1992. 'Do Norms Matter in Marketing Relationships?' *The Journal of Marketing* 56:32-44.
- Hill, C. E., B. J. Thompson, and E. N. Williams. 1997. 'A Guide to Conducting Consensual Qualitative Research.' *The Counselling Psychologist* 25 (4): 517-72.
- Ho, W., X. Xu, and P. K. Dey. 2010. 'Multi-Criteria Decision Making Approaches for Supplier Evaluation and Selection: A Literature Review.' *European Journal of Operational Research* 202 (1): 16-24.
- Ireland, R. D., and J. W. Webb. 2007. 'A Multi-Theoretic Perspective on Trust and Power in Strategic Supply Chains.' *Journal of Operations Management* 25 (2): 482-97.
- Jap, S. D., and S. Ganesan. 2000. 'Control Mechanisms and the Relationship Life Cycle: Implications for Safeguarding Specific Investments and Developing Commitment.' *Journal of Marketing Research* 37 (2): 227-45.
- Johnson, J. L., J. B. Cullen, T. Sakano, and H. Takenouchi. 1996. 'Setting the Stage for Trust and Strategic Integration in Japanese-us Cooperative Alliances.' *Journal of International Business Studies* 27:981-1004.
- Leuschner, R., D. S. Rogers, and F. F. Charvet. 2013. 'A Meta-Analysis of Supply Chain Integration and Firm Performance.' *Journal of Supply Chain Management* 49 (2): 34-57.
- Li, Y., E. Xie, H. H. Teo, and M. W. Peng. 2010. 'Formal Control and Social Control in Domestic and International Buyer-Supplier Relationships.' *Journal of Operations Management* 28 (4): 333-44.
- Lin, X., and C. L. Wang. 2008. 'Enforcement and Performance: The Role of Ownership, Legalism and Trust in International Joint Ventures.' *Journal of World Business* 43 (3): 340-51.
- Liu, Y., Y. Luo, and T. Liu. 2009. 'Governing Buyer-Supplier Relationships through Transactional and Relational Mechanisms: Evidence from China.' *Journal of Operations Management* 27 (4): 294-309.
- Luo, Y. 2002. 'Contract, Cooperation, and Performance in International Joint Ventures.' *Strategic Management Journal* 23 (10): 903-19.
- Madhok, A. 1995. 'Revisiting Multinational Firms' Tolerance for Joint Ventures: A Trust-Based Approach.' *Journal of International Business Studies* 26 (1): 117-37.
- Mahapatra, S. K., R. Narasimhan, and P. Barbieri. 2010. 'Strategic Interdependence, Governance Effectiveness and Supplier Performance.' *Journal of Operations Management* 28 (6): 537-52.
- McCutcheon, D. M., and J. R. Meredith. 1993. 'Conducting Case Study Research in Operations Management.' *Journal of Operations Management* 11 (3): 239-56.
- Mesquita, L. F., and T. H. Brush. 2008. 'Untangling Safeguard and Production Coordination Effects in Long-Term Buyer-Supplier Relationships.' *Academy of Management Journal* 51 (4): 785-807.

- Miles, M. B., and A. M. Huberman. 1984. *Qualitative Data Analysis: A Sourcebook of New Methods*. Thousand Oaks, CA: Sage.
- Muthusamy, S. K., M. A. White, and A. Carr. 2007. 'An Empirical Examination of the Role of Social Exchanges in Alliance Performance.' *Journal of Managerial Issues* 14 (1): 53-75.
- Nyaga, G. N., J. M. Whipple, and D. F. Lynch. 2010. 'Examining Supply Chain Relationships: Do Buyer and Supplier Perspectives on Collaborative Relationships Differ?' *Journal of Operations Management* 28 (2): 101-14.
- Paliszkievicz, J. O. 2011. 'Trust Management: Literature Review.' *Management* 6 (4): 315-31.
- Pfeffer, J., and G. R. Salancik. 2003. *The External Control of Organizations: A Resource Dependence Perspective*. Stanford, CA: Stanford University Press.
- Poppo, L., and T. Zenger. 2002. 'Do Formal Contracts and Relational Governance Function as Substitutes or Complements?' *Strategic Management Journal* 23 (8): 707-25.
- Ragin, C. C. 1994. *Constructing Social Research*. Thousand Oaks, CA: Pine Forge Press.
- Reuer, J. J., and A. Ariño. 2002. 'Contractual Renegotiations in Strategic Alliances.' *Journal of Management* 28 (1): 47-68.
- Roden, S., and B. Lawson. 2014. 'Developing Social Capital in Buyer-Supplier Relationships: The Contingent Effect of Relationship-Specific Adaptations.' *International Journal of Production Economics* 151:89-99.
- Sillanpää, I., and S. Sillanpää. 2014. 'Supply Chain Strategy: Empirical Case Study in Europe and Asia.' *Management* 9 (2): 95-115.
- Sillanpää, I., K. Shahzad, and E. Sillanpää. 2015. 'Supplier Development and Buyer-Supplier Relationship Strategies: A Literature Review.' *International Journal of Procurement Management* 18 (1/2): 227-50.
- Song, M., and C. A. Di Benedetto. 2008. 'Supplier's Involvement and Success of Radical New Product Development in New Ventures.' *Journal of Operations Management* 26 (1): 1-22.
- Uzzi, B. 1997. 'Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness.' *Administrative Science Quarterly* 42 (1): 35-67.
- Williamson, O. 1985. *The Economic Institutions of Capitalism*. New York: Free Press.
- Woolthuis, R. K., B. Hillebrand, and B. Nooteboom. 2005. 'Trust, Contract and Relationship Development.' *Organization Studies* 26 (6): 813-40.
- Wuyts, S., and T. Geyskens. 2005. 'The Formation of Buyer-Supplier Relationships: Detailed Contract Drafting and Close Partner Selection.' *Journal of Marketing* 69 (4): 103-17.

- Yin, R. K. 1994. *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage.
- . 2003. *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage.
- Zaheer, A., B. McEvily, and V. Perrone. 1998. 'Does Trust Matter? Exploring the Effects of Interorganizational and Interpersonal Trust on Performance.' *Organization Science* 9 (2): 141–59.
- Zhou, X., Q. Li, W. Zhao, and H. Cai. 2003. 'Embeddedness and Contractual Relationships in China's Transitional Economy.' *American Sociological Review* 68:75–102.
- Zimmermann, F., and K. Foerstl. 2014. 'A Meta-Analysis of the Purchasing and Supply Management Practice-Performance Link.' *Journal of Supply Chain Management* 50(3): 37–54.

Appendix 1: Measurement Items

BUYER'S BACKGROUND INFORMATION

1. Name of your company?
2. Type of the industry?
3. Number of employees (in 2014)?
4. Ownership: (family-owned, state-owned, local Plc. MNE)?
5. When was your company formed?

SUPPLIER'S BACKGROUND INFORMATION

1. Name of the key supplier?
2. Supplier's home country?
3. Number of employees in your supplier company approximately (in 2014)?
4. Supplier ownership type: (Family-owned, state-owned, local Plc. MNE)?
5. When did relationship start with supplier?
6. Why did your firm select this supplier?

TRANSACTIONAL CHARACTERISTICS OF RELATIONSHIP

1. What kind of resources have your firm and supplier invested in this relationship (e.g., financial, managerial, technological, physical, or others)? If yes, then what is the ownership ratio?
2. Suppose if your relationship with this supplier dissolves today, to what extent you and your supplier can recover the invested resources: (a) very low, (b) moderately low, (c) slightly low, (d) medium, (e) slightly higher, (f) moderately higher, (g) very high?
3. If your relationship with this supplier dissolves today, can your firm find another supplier for same components?
4. If your relationship with this supplier dissolves today, can your supplier find another buyer for the same components?

5. What is importance of contract in your relationship with supplier and what sort of things you have included in contract (operate and manage the relationship, resolve conflicts, terminate the relation, unanticipated contingencies, quality of resources contributed, and avoiding exploitation)? What is the impact of contract on actual dealings between companies?

RELATIONAL CHARACTERISTICS

1. Communication is very important ingredient for developing the relationship between buyers and suppliers. How do you describe the quality, frequency, and openness of communication between your firm and supplier:
 - (a) keeping informed each other about events or changes that may affect the other party,
 - (b) providing important and timely information that might help the other party,
 - (c) exchange of information in this relationship takes place frequently and informally.
2. How important is trust in your relationship with supplier? How do you describe the overall trustworthiness of supplier in this relationship? Does he fulfil his promises? Does he sometimes try to hide some important information from you?
 - (a) Cannot be trusted at times
 - (b) Is perfectly honest and truthful
 - (c) Can be trusted completely
 - (d) Can be counted on to do what is right
 - (e) Is someone I have great confidence in
 - (f) Has high integrity

RELATIONSHIP OUTCOMES

Transaction Cost

1. Developing relationship always carry some cost in terms of negotiations, combine decision making, monitoring the quality of supplied components, and sharing information. How efficiently your relationship handles these kinds of costs?
 - (a) How effective your meetings are with your suppliers in terms of time spent and making important decisions?
 - (b) Do you spend a lot of time in monitoring the quality of supplier's deliveries?
 - (c) Do you spend a lot of time together with supplier in order to solve conflicts?
 - (d) How easy it is to understand the information provided by supplier?

Buyer-Supplier Relationship Outcome

1. How do you evaluate the performance of your relationship? (Overall performance, profitability, just in time delivery, manufacturing quality, cost control, achieving goals, performance compared to

other suppliers, and relationship with supplier)? How satisfied is your firm with this relationship:

- (a) Has the relationship been satisfactory?
- (b) Has the relationship been very successful?
- (c) Has the relationship met your firm expectations?
- (d) Has your firm achieved the set objectives?



This paper is published under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (cc BY-NC-ND 4.0) License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Status of Women in Society and Life Expectancy at Birth

ANICA NOVAK

Association for Education and Sustainable Development, Slovenia
anicanovak@yahoo.co.uk

ŽIGA ČEPAR

University of Primorska, Slovenia
ziga.cepar@fm-kp.si

ALEŠ TRUNK

International School for Social and Business Studies, Slovenia
ales.trunk@yahoo.com

The purpose of this paper is to investigate the influence of the status of women in society over life expectancy at birth. Based on the data of some of the socio-economic variables for 187 countries worldwide, collected by the United Nations within United Nations Development Programme – Human Development Report, we developed a regression model of life expectancy factors. Through empirical testing of the three hypotheses which refer to different aspects of the status of women in society, we found that the employment ratio between women and men has a statistically significant negative impact on life expectancy at birth, which is, at least at first glance, unexpected. At the same time, the number of teenage births per 100 women aged 15–19 as well as gender inequality has a statistically significant negative impact on life expectancy at birth.

Key words: life expectancy at birth, population ageing, employment ratio between women and men, gender inequality, teenage pregnancy

Life Expectancy and Population Ageing

A prolonged life expectancy at birth, along with a decreasing birth rate is the main factor for our ageing population (United Nations 2009). An ageing population is one of the biggest socio-economic challenges facing 21st Europe, an issue of the whole world, as well as the EU. In 2025 more than 20% of Europeans will be aged 65 or more, in particular the number of people aged 80 or more will increase substantially (European Commission n. d.). Population ageing does not only have economic consequences, but also social, psychological, cultural, institutional and political consequences (Malačič 2008,

795) and therefore requires changes and adjustments in many different fields of certain countries' systems. Obviously, population ageing affects the living standards in certain countries, the quality of life or welfare, which are quite complex concepts (Mandič and Filipovič Hrast 2011, 16–17; Dubska 2010; Osberg and Sharpe 2011, 1–5; Watson, Pichler in Wallace 2010, 1–3).

Čepar and Bojnec (2013; 2014) prove a negative impact of population ageing on absolute demand for higher education, which confirms the earlier investigation of Campbell and Siegel (1967), Handa and Skolink (1975) and Sloan et al. (1990). Population ageing affects the labour market through an increase of expenditures for pensions, healthcare, social security and care for old people and through a decrease in the number of people who constitute the workforce (Dimovski and Žnidaršič 2007, 2–15). Population ageing might increase labour costs, outdated knowledge and competencies (Dixon 2003, 70–74; Johnson and Zimmermann 1993, 1–22) and might negatively affect economic growth (Malmberg 2011, 279).

In today's world, one tenth of the population is aged 60 and above. Experts predict that in the next forty years that percentage will increase substantially, even double, especially due to the ageing population in the developed world. The process of population ageing can be measured by the growth of the median population age, by the growth of the ageing index and by the growing percentage of old people.

The median population age is the age that divides a population into two numerically equal groups – that is, half the people are younger than this age and half are older. The growth of the median age reflects an ageing population. On a global scale, in 1995, the median population age was 25 years, and in 2010, 28.5 years (Statista n. d.). In 2010, 31 countries had a median age higher than 40 years, with Slovenia among them too, where the median age was 42.1 years (World by Map n. d.). The figure below shows the median age of the population in the EU (27) for the years 1991, 2000 and 2010. As in the rest of the world, the median age is also increasing in the EU. We can see that the median age in the EU (27) is higher than in the rest of the world. In 2010, the median age in the EU (27) was 40.9 years old.

The ageing index is the ratio between the older population (aged 65 and above) and younger population (aged 0–14), multiplied by 100 (Statistical Office of the Republic of Slovenia N. d.). The figure below shows the ageing index for the EU (27) from 1995 to 2012. The columns show the percent of the young and old population, while the curves show the ageing index. From the figure, we can see that

Status of Women in Society and Life Expectancy at Birth



FIGURE 1 The Median Age of the Population in the EU (27) for the Years 1991, 2000 and 2010 (adapted from Eurostat 2013)

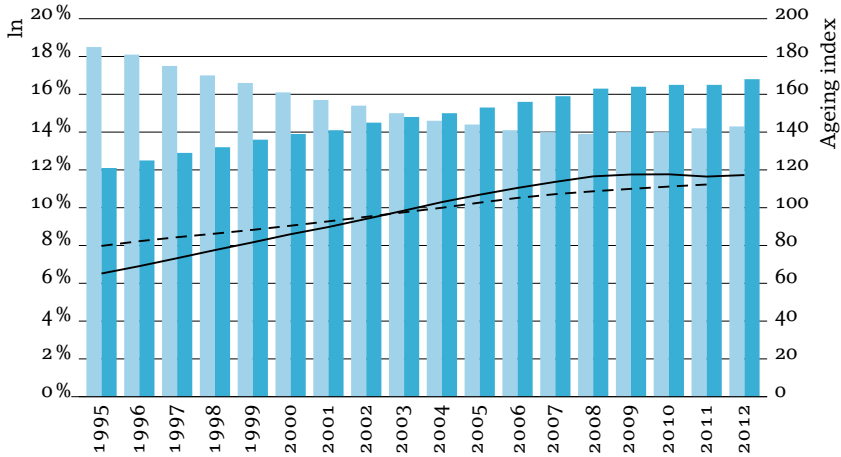


FIGURE 2 Ageing Index in Percentage of Younger and Older Populations in Slovenia in the EU (27), 1995-2012 (light columns – 0-14 years, dark columns – 65+ years, line – ageing index, dashed line – EU-27 ageing index; adapted from Institute of Macroeconomic Analysis and Development 2012)

the percent share of the population aged between 0-14 has been decreasing, and the percent share of the population aged 65 and above has been increasing. In 2003, the percent share of the population between the ages of 0-14 was the same as the percent share of the population aged 65 and above.

Percentage of older population (aged 65 and above) is steadily growing. In 2008, the number of the older population in the total population reached 77 million people or 17% of the total population. According to projections, by 2020 the older population will total 113 million or 25% of the total population (United Nations 2009).

The increasing life expectancy at birth is on one hand a key factor of the ageing population, which has numerous consequences for the economy, and on the other hand a high life expectancy at birth is a goal of every society. This is why we wanted to explore and present the causes which affect the different levels of life expectancy at birth in the different countries around the world. We were especially interested in whether the different social statuses of women in society

in different countries have an effect on the level of life expectancy at birth.

The Research Hypotheses, Methodology and Data Used

Here we present the research hypotheses and the methodology which was used to achieve the objectives of the research and to test the research hypotheses together with assumptions on which our research is based as well as its limitations in a sense of its scope, geographical limits and time frame. Finally, the most important data used in this investigation is explained.

THE RESEARCH HYPOTHESES

There are many different socio-economic factors of life expectancy at birth. In our research we wanted to find out which factors, out of those that could be measured by the United Nations Development Programme data from the Human Development Report, could sufficiently explain variations in life expectancy at birth across countries. Moreover, we wanted to statistically test whether the status of women in society has any influence on life expectancy at birth. We used the cross section data of 187 countries worldwide for the year 2010. Our main research thesis is that the status of women in society has an important influence on life expectancy at birth. In order to test the main research thesis, we set the following three hypotheses.

HYPOTHESIS 1 *Employment ratio between women and men positively impacts life expectancy at birth.*

HYPOTHESIS 2 *Number of births per 100 women aged 15–19 years negatively impacts life expectancy at birth.*

HYPOTHESIS 3 *Gender inequality negatively impacts life expectancy at birth.*

METHODOLOGY

We ran several multivariate regression models, in order to test our main research thesis and the three hypotheses. First, we collected secondary data from the United Nations' Human Development Report (United Nations 2013). The data refers to several socio-economic variables of 187 countries worldwide for the year 2010. Statistical observation units are individual countries. The cross section data enables us to exclude any time related effects from the analysis. The cross section demographic and socio-economic data were properly arranged, transformed and entered into a statistical computer package SPSS, which was used for regression analysis.

In the regression analysis, life expectancy at birth was used as a dependent variable to measure the average life span of a country's population. Several socio-economic variables were used as explanatory variables. We set the initial regression model which was tested on the available data of the 187 worldwide. We tested the following general form of the regression model:

$$\text{Life expectancy at birth} = \alpha + \beta_1 \times f_1 + \dots + \beta_n \times f_n + \mu \quad (1)$$

Using regression analysis based on the least square method we estimated parameters of different regression models and chose the best fitting models based on the standard error of the models, adjusted determination coefficient, *F*-test and *t*-tests.

Assumptions of our investigation are mostly related to the indicators which are used to measure socio-economic factors of life expectancy at birth. We assume that indicators measured and calculated within the Human Development Report to proxy life expectancy factors are methodologically adequate and correct. Life expectancy at birth is used as a dependant variable in regression analysis, measuring an average human life span by countries. In this research we measure the status of women in society by employment ratio between women and men, by the number of teenage births per 100 women aged 15–19 and by gender inequality. Methodological assumptions of regression analysis were also tested and are presented within the results of our research.

Limitations of our investigation narrow the scope of investigation and refer to some methodological problems which are mostly related to missing values for some countries' indicators. We use aggregate country data for a sample of 187 worldwide countries; we are limited to the year 2010 and are focusing on socio-economic factors only.

All secondary data was collected from the databases of the United Nations which was acquired through the United Nations Development Programme – Human Development Report (United Nations 2013). Besides data on life expectancy at birth, we used the following data for the explanatory variables in the regression analysis of life expectancy factors; public health spending (spending on public health as a percentage of GDP), gross domestic product per capita expressed in us dollars, gender inequality (a composite measure that reflects the potential loss due to inequality between females and males through three dimensions: reproductive health, empowerment and the labour market), expected years of schooling (the expected number of years of schooling from school entry onwards), employment ratio between women and men (the ratio be-

tween female and male working population (aged 15–64) who are actively involved in the labour market), ratio between men and women with at least upper secondary education (the ratio between women and men aged 25 years or older with secondary or higher education attainment), urban population (number of people living in areas classified as urban areas, according to the criteria of each particular country) and the number of births per 100 women aged 15–19 years (number of births to women aged 15–19 per 100 women).

Overview of the Data Used

Hereinafter, the factors used in the paper are presented.

Expenditure on Public Health (expressed in percentage of GDP). Funding for health systems can come for foreign or national resources which can be private or public (World Health Organisation n. d.). An increase in expenditure on health per capita means the country is using more of its resources to take care of and improve the health system. Higher expenditure on health per capita means that improvements in medical technology can be made. Higher expenditure on health per capita means that health and preserving life are important values for the country (Hall in Jones 2004).

Expected Years of Schooling (expected number of years of schooling from school entry onwards). Individuals in higher education earn more money and have better jobs. Consequently, this means that the income for their household is higher and allows them a better standard of living. People with higher education are also more aware of how to avoid the risk of illness (they have better information about health services, nutrition and hygiene) as well as how to live a longer and more comfortable life (United Nations 2010, 36).

Educational systems vary from country to country depending on the average level of education reached in the country. Gomezelj Omrzel and Trunk Širca (2008) claim that it is necessary to evaluate knowledge regardless of where the individual received it. In the case of Slovenia, where the expected years of schooling is 17 years, the most emphasis is on higher education. 70% of the Slovene population are already in tertiary education. Wiechetek and Trunk Širca (2014), Rožman et al. (2014) and Trunk Širca et al. (2006) discussed the competencies of young graduates on entering the labour market, Arzenšek et al. (2014) and Dermol et al. (2013) are thinking even deeper, saying that the knowledge gained by an individual is not enough to develop society; development of a suitable mechanism to put knowledge into practice is needed.

Gender inequality (a composite measure that reflects the potential loss due to inequality between females and males through three dimensions: reproductive health, empowerment and the labour market). Gender inequality contains three dimensions:

(a) Reproductive Health. By the definition which was accepted at the International Conference on Population and Development in 1994 in Cairo, reproductive health is defined as having good physical, mental and social being in all areas which are connected to the reproductive system, its functions and processes (UNFPA 2013a).

Problems with reproductive health are still the main causes for death and illness among women during the birthing process (UNFPA 2013b). The risk of death when giving birth is decreased through education, suitable nutrition, healthcare for pregnant women and through access to contraception (United Nations 2010, 90).

(b) Empowerment. The empowerment of women is an important aspect towards gender equality; it gives women more autonomy and means improvements in gender equality. Empowerment of women includes 5 components (United Nations n. d.):

1. feeling of self-worth,
2. right to choose,
3. right to access information and resources,
4. right to freely make life choices within the family and out of the family and
5. the opportunity to influence social changes, with the purpose for creating a more righteous social and economic society.

(c) Employment. Access to full and decent employment poses a challenge for types of women who must work in insecure and badly paid jobs. Particularly in developing countries, a large portion of women are employed in informal activities. In Sub-Saharan Africa, the level of employment among women is high (around 55%); however out of those employed, 82% work in hard (indecent) conditions. Women from Arabic countries have increased their participation in employment from 9% in 1980 to 27% in 2008, which is still only half of the global average (United Nations 2010, 77–91).

The advancement towards equality is still limited in poorer countries, among poor women and those which suffer because of different forms of exclusion (e.g. because of nationality, remoteness, disability, ...) (World Bank 2012, 73).

Gross Domestic Product per Capita (gross domestic product, expressed in us dollars). There is a strong link between gross domestic

product and life expectancy at birth (in countries where there is a high gross domestic product there is also a higher life expectancy).

From 1970 to 2010, the gross domestic product of developing countries rose by 2.3% annually, while the development of the country rose by 1.5% a year. An increasing GDP means higher income per capita, which individuals can use. An individual can afford a higher standard of living, healthcare and medicine, which impacts on higher life expectancy at birth. However there are also deviations. Some countries with low GDPs have high life expectancies at birth, because their governments value the needs of the people highly. A good example is Cuba, which has a low GDP, but a life expectancy of 77. Another reason for a low GDP and relatively high life expectancy at birth is the level of non-marketable activities. In cases where there is a lot of self-sufficient farming, people have enough food for themselves, however will not contribute to the GDP; they will not buy food and/or sell it, so there will not be an exchange of money, (Statistical Consultants n. d.).

Urban Population (number of people living in areas classified as urban areas, according to the criteria of each particular country). The increased share of urban population is connected with the natural growth of the population as well as the migration of the population from rural areas into urban environments. The main causes for migration into urban environments are the services and jobs which an urban environment offers (UNEP 2001, 240). Life in an urban environment allows for easier water supply, and thus better hygiene conditions. It also gives larger access to education, health and social services.

By 2050, it is predicted that the urban population will have reached 72% (specifically 3.6 billion in 2011 will increase to 6.3 billion by 2050). The rural population in less developed countries will continue to rise until 2021, and then it will begin to fall (United Nations 2012, 1–2).

The Number of Births per 100 Women Aged 15–19 (number of births to women aged 15–19 per 100 women). Pregnancy among young women has important consequences on a global level as well as on a social and personal level. Globally speaking the growth rate is larger when women have their first child in their teenage years; giving birth when young prolongs the reproductive period and increases fertility. On a social level, there is a strong link between teenage pregnancy and a low level of education in young girls. Girls who become mothers at a young age often stop their education. Stopping and interrupt-

ing education means that these girls have a lower level of education which is reflected in a loss of possible earnings. These girls are often financially dependent on their families (Singh and Darroch 1999; Rafalimanana 2006).

Employment Ratio between Women and Men (the ratio between female and male working population (aged 15–64) who are actively involved in the labour market). The difference between the male and female working population has decreased in the last ten years in all regions. Despite this, the female working population is smaller than the male working population in nearly all regions. The smallest share of actively working women and at the same time biggest difference between the female and male working population can be found in the countries of Western Africa and the Middle East. The largest share of the female working population and at the same time smallest difference between the female and male working population can be found in Sub-Saharan Africa (International Labour Organisation 2013).

In developed countries in the previous century, the male was the one who financially took care of the family. This has changed in modern times, where women are increasingly equal to men and are being employed in positions which were once thought to be exclusively for men. We notice that in less developed countries, the inclusion of women in the labour market is increasing (and is in a lot of places comparable to men), however the work is particularly physically demanding and badly paid. We notice that in less developed countries, despite high representation of women on the labour market, life expectancy at birth is a lot lower in comparison with developed countries, where similarly more women are being employed year after year.

Ratio between Men and Women with at Least Upper Secondary Education (the ratio between women and men aged 25 years or older with secondary or higher education attainment). The education of girls helps better reproductive health, better status in the family, community and society. Better education leads to a lower number of births (women with at least upper secondary education have less children than those women who are uneducated), the possibility of unplanned pregnancy and their risk of HIV (for girls who have finished upper secondary education, there is 4 times more chance that they will use contraception in comparison to girls who are uneducated) (Measure Evaluation Population and Reproductive Health 2013; Bloom 2006, 94).

TABLE 1 Final Linear Multivariate Regression Model Results, Year 2010

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Const.	67.890	4.534		14.974	0.000				
EYS	1.087	0.274	0.330	3.967	0.000	0.771	0.330	0.277	3.606
UP	0.070	0.027	0.163	2.547	0.012	0.656	0.219	0.470	2.129
GI	-0.136	0.041	-0.260	-3.285	0.001	-0.715	-0.278	0.305	3.275
ER	-0.113	0.024	-0.229	-4.658	0.000	-0.192	-0.379	0.791	1.265
NB	-0.527	0.160	-0.226	-3.301	0.001	-0.716	-0.279	0.410	2.441

NOTES Column headings are as follows: (1) variables; unstandardised coefficients: (2) B , (3) standard error; standardised coefficients: (4) β ; (5) T , (6) exact significance level (p); correlation coefficients: (7) bivariate, (8) partial; multicollinearity; (9) tolerance, (10) VIF . $R^2 = 0.753$, adjusted $R^2 = 0.743$, F -statistics = 78,533 (exact significance level = 0.000), $N = 187$. Own calculations based on data from the United Nations (United Nations 2013).

Results of the Regression Analysis

We run several multivariate linear regression models in order to test each of the three hypotheses and our main thesis. In all the regression models we analysed the explanatory power of the independent socio-economic variables as well as the strength and the direction of the association between the dependent variable (life expectancy at birth) and independent variables (socio-economic variables). Using regression coefficients we tested the existence and the direction (positive/negative) of the association and impact that was assumed for each factor in each hypothesis. Using adjusted determination coefficient we tested the share of the variance that was explained by the independent variables. Using t -tests we tested the statistical significance of each individual explanatory variable, while using F -test to determine the statistical significance of the regression models as a whole. During regression analysis we ran many different models, however only one which was statistically significant and with the highest explanatory power was selected for interpretation in this paper.

All the initially collected independent socio-economic variables were included into the initial regression analysis. After we excluded statistically insignificant explanatory variables and those which were too correlated with each other we came to the following final multivariate regression model.

All the regression coefficients in the final models for both years are highly statistically significant ($p < 0.05$ for all betas) and there is no multicollinearity among the factor included in the model, since the tolerance is always greater than 0.1 and VIF is less than 10 for all the

variables. Statistically significant factors of life expectancy at birth with a positive impact are expected years of schooling and urban population, with a negative impact are gender inequality, employment ratio between women and men and number of births per 100 women aged 15–19 years (table 1).

If the expected years of schooling are increased by 1 year, life expectancy at birth is increased by 1.087 years, holding other factors/variables constant. If the urban population is increased by 1 percentage point, life expectancy at birth is increased by 0.070 years, holding other factors/variables constant. If the gender inequality is increased by 1 percentage point (measuring the relative potential loss due to the gender inequality), life expectancy at birth is decreased by 0.136 years, holding other factors/variables constant. If the employment ratio between women and men is increased by 1 woman per 100 men, life expectancy at birth is decreased by 0.113 years, holding other factors/variables constant. If the number of births per 100 women aged 15–19 years is increased by 1 birth, life expectancy at birth is decreased by 0.527 years, holding other factors/variables constant. The fair strength and direction of the association between life expectancy at birth and each explanatory variable is additionally confirmed by the bivariate and partial correlation coefficients (table 1).

We may conclude that the explanatory power of the regression model is relatively high. Adjusted determination coefficient for the regression model ($\text{adj. } R^2 = 0.0743$) tells us that the variation of all the factors included in the model together explain 74.3% of the variability of life expectancy at birth. *F*-test additionally confirms the statistical significance of the model as a whole.

Additionally, we also tested general methodological assumptions of the regression, to ensure the validity of the regression model results. We found out that the distribution of all variables included in the analysis is close enough to normal distribution, and so is the distribution of regression errors with average close to zero. The scatter diagram shows that regression errors exhibit no particular pattern and are evenly and randomly distributed over the area. There is no heteroscedasticity since constant variance of the errors is observed (homoscedasticity). All the necessary assumptions are fulfilled, so we may conclude that the regression model is efficient and unbiased.

Findings of the Research

Based on the regression analysis results, we found five socio-economic factors of life expectancy at birth, which explain quite well the

variations in life expectancy among countries. Higher expected years of schooling and higher share of urban population increase life expectancy at birth, whereas, higher gender inequality, higher employment ratio between women and men and higher number of teenage births per 100 women aged 15–19 years decrease life expectancy at birth.

The employment ratio between women and men, which is the ratio between the female and male working population aged 15–64, who are actively involved in the labour market, has a negative impact on life expectancy at birth. That means that we may reject the first hypothesis, which says that that impact is positive.

The number of births to women aged 15–19 per 100 women aged between 15–19 years is found to have a negative impact on life expectancy at birth, which *confirms our second hypothesis*.

Since gender inequality is also found as one of the statistically significant factors of life expectancy at birth, which decreases life expectancy at birth, we may also *confirm our third hypothesis*.

The three variables corresponding to the three hypotheses all describe the position and status of women in society. According to the unstandardised and standardised regression coefficients beta, we can see that these variables are maybe not the most important for the life expectancy variation; however they are also not the least important. The expected years of schooling variable is to be found in first place, however right after it, there are variables describing status of women in society.

Based on the results of our empirical investigation, we may therefore *confirm our main research thesis* that the status of women in society has an important influence on life expectancy at birth. Obviously, the better the status of women in society, the higher the life expectancy is at birth. Because from the first hypothesis, this conclusion is not as obvious as it is from the second and the third hypotheses, let us show our reasoning in the last section of the paper.

Conclusion

The originality of this research is demonstrated through our findings regarding the factors of life expectancy, which were obtained on the basis of our own empirical study. The regression model implies the original findings which are related to the type of the factors, direction of the impact of each individual factor and its power of influence and importance for life expectancy, with emphasis on the findings related to the role of the status of women in society.

The expected years of schooling is most certainly an important

factor of economic development. It is understandable that higher education gives individuals an opportunity to get a better job and better income thus a better standard of living, which positively impacts life expectancy at birth.

Urban population is prevailing in developed countries. Life in an urban environment allows for larger access to education, health and social services, more employment opportunities, easier water supply and better hygiene conditions, which again has a positive impact on life expectancy at birth.

The three indicators used to measure status of women in society negatively impact life expectancy at birth.

The employment ratio between women and men negatively impacts life expectancy at birth. The higher is the ratio, the lower the life expectancy at birth, which is unexpected at least at a first sight. How can that be explained? The employment ratio has higher values not only if the number of employed women is higher (the effect of the nominator) but also if the number of employed men is lower (the effect of the denominator). If we have look at the nominator first, it is somehow expected that in countries where more women are employed, life expectancy at birth is higher than in countries where less women are employed holding other conditions constant. However that is not supported by the signs of this factor (employment ratio) in our analysis. Maybe that is because in our case higher number of employed women means predominantly higher number of women being employed in low paid physical jobs, like in production, which is more typical for less developed countries with expectedly lower life expectancy at birth. In more developed countries, some women stay at home (reducing the nominator of the ratio) not because they have no equal opportunities in labour market, but because they can afford it, because the living standard in many household in developed countries allows women not to work, if they choose so. On the other hand, if we have a look at the denominator, the higher indicator can also be a result of a smaller number of employed men. Smaller number of employed men could be indicating general problems in the labour market, higher general level of unemployment and worse economic conditions in a country, which logically results in a lower life expectancy at birth, which in this case is supported by the sign of our employment ratio factor. To sum up, it is obviously quite possible that higher values for that indicator do not reflect better status of women in society, which might have been expected at a first sight, but in fact the opposite. Status of women in society might be better, when employment of women is somehow balanced with employment

of men, resulting in more constant and not higher employment ratio. For example, no one believes that a disproportionately high number of employed women and low number of employed men (which would result in higher employment ratio) reflects ideal society with high living standard and life expectancy at birth, but just the opposite. There might even exist some theoretically ideal or optimal value for that ratio, which could represent an interesting challenge for our further investigation. In the future it would definitely be worth researching the background of this indicator, since it might indirectly reflect some other indicators which were not included in this model.

A higher share of births to teenage mothers expectedly negatively impacts life expectancy, since that worsens life conditions of and potentials for these teenagers as well as for their children. Girls who become mothers as teenagers often give up their schooling, which leads them to lower level of education which is later on reflected in lower employment possibilities, lower salaries and lower living standard. So countries with higher share of births teenage mothers reflect and lead into some conditions which are typical for countries with lower life expectancy at birth.

Gender inequality as composite measure reflects the potential loss due to inequality between the female and male through three dimensions: reproductive health, empowerment and labour market. Problems with reproductive health are still the main causes for death and illness among women during the birth giving. The empowerment of women is an important aspect of gender equality; it gives women more autonomy and means improvements in gender equality. Equal opportunities for women in labour market are a challenge especially for women who work in insecure and badly paid jobs. All three dimensions of gender inequality negatively impact life expectancy. The higher is the gender inequality, the lower the life expectancy.

It is generally believed that life expectancy at birth is increasing. However it is not entirely true, especially in some undeveloped countries where life expectancy is even decreasing. From the results of this research it is clear how very important is the status of women in society for quality of life which is reflected also in life expectancy at birth. So we need to do more to further encourage gender equality, responsible motherhood and parenthood, education and equal opportunities in labour market.

References

- Arzenšek, A., K. Košmrlj, and N. Trunk Širca. 2014. 'Slovenian Young Researchers' Motivation for Knowledge Transfer.' *Higher Education* 68 (2): 185–206.

- Bloom, E. D. 2006. 'Education in a Globalized World.' *World Economics* 7 (4): 87–109.
- Campbell, R., and B. Siegel. 1967. 'The Demand for Higher Education in the United States, 1919–1964.' *American Economic Review* 57 (3): 482–94.
- Čepar, Ž., and Š. Bojnec. 2013. 'Macro-Level Determinants of Relative Participation in Undergraduate Higher Education in Slovenia.' *Eastern European Economics* 51 (6): 77–95.
- . 2014. 'Does Higher Relative Participation in Higher Education Also Mean a Higher Absolute Number of Students? The Case of Slovenia.' *Eastern European Economics* 52 (2): 85–100.
- Dermol, V., N. Trunk Širca, K. Babnik, and K. Breznik, K. 2013. 'Connecting Research, Higher Education and Business: Implication for Innovation.' *International Journal of Euro-Mediterranean Studies* 6 (1): 65–80.
- Dimovski, V., and J. Žnidaršič. 2007. 'Ekonomski vidiki staranja prebivalstva Slovenije: kako ublažiti posledice s pristopom aktivnega staranja.' *Kakovostna starost* 10 (1): 2–15.
- Dixon, S. 2003. 'Implications of Population Ageing for the Labour Market.' *Labour Market Trends* February, 67–76.***
- Dubska, D. 2010. 'The New Paradigm – Why Is It Important to Measure the Progress of Societies?' Paper presented at 20th Statistical Days. http://www.stat.si/StatisticniDnevi/Docs/Radenci%202010/Dubska_New%20paradigm-prispevek.pdf
- European Commission. N. d. 'Staranje prebivalstva.' http://ec.europa.eu/health/ageing/policy/index_sl.htm
- Eurostat. 2013. 'Median Age of Population, EU-27, 1991–2011.' Http://epp.eurostat.ec.europa.eu/statistics_explained/images/a/ao/Median_age_of_population%2C_EU-27%2C_1991-2011_%281%29_%28years%29.png
- Gomezelj Omrzel, D., N. and Trunk Širca. 2008. 'The Validation of Different Kinds of Knowledge at the Higher Education Level.' *Higher Education in Europe* 33 (4): 423–36.
- Hall, E. R., and C. I. Jones. 2004. *The Value of Life and the Rise in Health Spending*. Cambridge, MA: National Bureau of Economic Research.
- Handa, M. L., and M. L. Skolink. 1975. 'Unemployment, Expected Returns, and the Demand for University Education in Ontario: Some Empirical Results.' *Higher Education* 4 (1): 27–44.
- Institute of Macroeconomic Analysis and Development. 2012. 'Indeks staranja.' http://www.umar.gov.si/fileadmin/user_upload/publikacije/dr/13/Va/A5_9.xls
- International Labour Organization. 2013. 'Labour Force Participation Rate.' <http://kilm.ilo.org/manuscript/kilmo1.asp>
- Johnson, P. A., and K. F. Zimmermann. 1993. 'Aging and the European Labor Market: Public Policy Issues.' In *Labor Markets in an Aging*

- Europe*, edited by P. A. Johnson and K. F. Zimmermann, 1–22. Cambridge: Cambridge University Press.
- Malačič, J. 2008. 'Socialno ekonomske posledice staranja prebivalstva.' *Zdravniški vestnik* 77:793–8.
- Malmberg, B. 2011. 'Age Structure Effects on Economic Growth – Swedish Evidence.' *Scandinavian Economic History Review* 42 (3): 179–295.
- Mandič, S., and M. Filipovič Hrast. 2011. 'Blaginja v starajoči se družbi: analitična izhodišča.' In *Blaginja pod pritiski demografskih sprememb*, edited by S. Mandič and M. Filipovič Hrast, 7–25. Ljubljana: Fakulteta za družbene vede.
- Measure Evaluation Population and Reproductive Health. 2013. 'Family Planning and Reproductive Health Indicators Database.' http://www.cpc.unc.edu/measure/prh/rh_indicators
- Osberg, L., and A. Sharpe. 2011. 'Comparisons of Trends in GDP and Economic Well-being – the Impact of Social Capital.' <http://www.oecd.org/dataoecd/5/32/1824740.pdf>
- Rafalimanana, H. 2006. 'Adolescent Fertility in the Developing World: Levels and Trends in the 1990s and Early 2000s.' <http://paa2006.princeton.edu/papers/60711>
- Rožman, L., V. Jošt Lešer, N. Trunk Širca, V. Dermol, and V. Skrbinek. 2014. 'Assessing Student Workload: Tough Nut to Crack.' In *human capital without Borders: Knowledge and Learning for Quality of Life; Proceedings of the Management, Knowledge and Learning International Conference 2014*, 1411–6. Bangkok; Celje; Lublin: ToKnow-Press.
- Singh, S., in J. E. Darroch. 1999. 'Adolescent Pregnancy and Childbearing: Levels and Trends in Developed Countries.' *Family Planning Perspectives* 32 (1): 14–23.
- Sloan, J., M. Baker, R. Blandy, F. Robertson and W. Brummitt. 1990. *Study of the Labour Market for Academics*. Canberra: Australian Government Publishing Service Press.
- Statista. N. d. 'Median age of the world population from 1990 to 2010 and a forecast until 2100.' <http://www.statista.com/statistics/268766/median-age-of-the-world-population/>
- Statistical Consultants. N. d. 'Life Expectancy at Birth Versus GDP per Capita.' <http://www.statisticalconsultants.co.nz/weeklyfeatures/WF6.html>
- Statistical Office of the Republic of Slovenia. N. d. 'Indeks staranja.' http://www.stat.si/doc/pub/rr816-2004/IZRACUNI_SLO.htm
- Trunk Širca, N., B. Nastav, D. Lesjak, and V. Florjančič. 2006. 'The Labour Market, Graduate Competences and Study Programme Development: A Case Study.' *Higher Education in Europe* 31 (1): 53–64.
- UNEP. 2001. *State of the Environment and Policy Retrospective: 1971–2002*. London: Earthscan.

- UNFPA. 2013a. 'Master Plans for Development.' <http://www.unfpa.org/public/home/sitemap/icpd/International-Conference-on-Population-and-Development/ICPD-Summary>
- . 2013b. 'Improving Reproductive Health.' <https://www.unfpa.org/rh/>
- United Nations. 2009. 'World Population Ageing 2009.' ESA/P/WP/212, United Nations, New York. http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf
- . 2010. *Human Development Report 2010*. New York: United Nations Development Programme. http://hdr.undp.org/sitesdefault/files/reports/270/hdr_2010_en_complete_reprint.pdf
- . 2012. 'World Urbanization Prospects: The 2011 Revision.' http://esa.un.org/unup/pdf/WUP2011_Highlights.pdf
- . 2013. 'Human Development Report 2013, Complete.' http://hdr.undp.org/en/media/HDR_2013_EN_complete.pdf
- . N. d. 'Guidelines on Women's Empowerment.' <http://www.un.org/popin/unfpa/taskforce/guide/iatfwemp.gdl.html>
- Watson, D., F. Pichler, and C. Waallace. 2010. *Subjective Well-being in Europe: Secound European Quality of Life Survey*. Luxemburg: Office for Offical Publications of European Communities.
- Wiechetek, L., and N. Trunk Širca. 2014. 'Enterpreneurs' Expectations and Students' Competencies According to the First Stage of the Synergy Project Evaluation.' *International Journal of Management, Knowledge and Learning* 3 (1): 101–123.
- World Bank. 2012. *Gender Equality and Development*. Washington, DC: World Bank. <Http://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/7786210-1315936222006/Complete-Report.pdf>
- World by Map. N. d. 'Median Age.' <http://world.bymap.org/MedianAge.html>
- World Health Organisation. N. d. 'Health Financing.' <http://www.who.int/trade/glossary/storyo47/en/>



This paper is published under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (cc BY-NC-ND 4.0) License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

From Knowledge Management to Ecosystems of Innovation: A Scoping Review

EVA GATARIK

*Masaryk University, Czech Republic
eva.gatarik@econ.muni.cz*

LENKA JANOŠOVÁ

*Masaryk University, Czech Republic
lenka.janosova@econ.muni.cz*

MICHAL JIRÁSEK

*Masaryk University, Czech Republic
mijirasek@mail.muni.cz*

VIKTOR KULHAVÝ

*Masaryk University, Czech Republic
kulhavy@econ.muni.cz*

MARTIN ŠTĚRBA

*Masaryk University, Czech Republic
martin.sterba@mail.muni.cz*

The ways in which organizations construct, process and justify knowledge differ, with persisting effects upon their relative performance. The field of knowledge management has expanded into different, although intertwined, strands of research, demonstrating the power of knowledge in the success of organizational performance. However, a meta-theory consolidating these approaches, as well as explaining and allowing for predictions of organizational performance with respect to the modes of dealing with knowledge within an organization, still seems to be lacking. This scoping review investigates the regularities by which *ecosystems of innovation* construct, process and justify their knowledge. The aim is to screen the landscape of research in support of the value of the idea that combining knowledge management with research into commons can lead to the construction of a meta-theory, allowing effective approaches to the original task of knowledge management, i.e. supporting the success of organizational performance in the long term.

Key words: knowledge management, organizational epistemology, commons, ecosystems of innovation, scoping review

Introduction

Much of human development has centred on attempts to cope with the future, either by acquiring knowledge about the world to adapt or

adjust oneself to the environment, or by changing the environment to bring it into line with one's interests and possibilities. Where does knowledge management lie between these extremes? It appears to fit somewhere between them or, to take up a suggestion by Hess and Ostrom (2007) with respect to the management of commons, somewhere between decentralized and centralized forms of organization. However, this indicates that the plainly cognitive approach to knowledge management so currently prevalent must be reconsidered either, as Senge et al. (2008) suggests, through investigation of the interplay between individuals and organizations via an ecological path or, as Hess and Ostrom (2007) maintain, via the study of knowledge as a commons.

Investigations into knowledge as a primary source of sustainable economic success in business organizations are now commonplace, together with analyses of the obvious drive towards knowledge that provides competitive advantage (Vogel 2012). The first of these that may be classified as *scientific* date to the 1990s (Nonaka and Takeuchi 1995; Davenport and Prusak 1998; Wiig 1997), but they are not without parallels and predecessors. These may be found in approaches addressing the management of commons, as per Ostrom (1990; 2010), i.e. approaches attempting to bridge the gap between market and state. The bulk of research results suggest that these approaches may support creativity, innovation and flexibility (Hess and Ostrom 2007) as the original targets of knowledge management.

This contribution seeks answers to the following research questions:

- What can we learn from contemporary *knowledge management* literature about ways of constructing, processing and justifying knowledge within organizations? How, and why, do these influence organizational performance in the long run?
- How do organizations sustainably managing commons construct process and justify their knowledge? What is it about the design of these organizations that supports knowledge sharing and knowledge creation?
- In what ways may the concept of *ecosystems of innovation* be used? How does it address the problems of knowledge sharing and knowledge creation?

Method

A scoping review approach (Jesson, Matheson, and Lacey 2011) appears best-suited the purposes of this inquiry, in this case: (1) to

carry out a time-efficient but comprehensive review of a highly diverse body of literature; (2) to determine lacunae in research and thus areas for future work; and (3) to establish potential areas for further deep investigation by means of systematic literature review.

The work started with a sample of keywords derived from previous studies. The starting set was considered incomplete from the outset (Arksey and O'Malley 2005), not subject to completion until the very end. Members of the research team conducted their own literature search in a domain defined by keywords. All were involved in source selection at mid-process. Inclusion criteria covered research question fit, author credibility, new perspective added and keyword match. The study prioritized theoretical concepts over empirical findings, although practical implications were far from ignored.

A variety of literature sources were examined, including research studies in peer-reviewed journals from electronic databases (EBSCO, JSTOR, WOS) and professional monographs as well as 'grey' information such as project reports, web pages, blogs, presentations, and professional network forums. The time frame encompassed mainly the years 1990 to 2014, primary language English. In total 88 references, 33 monographs, 34 research articles and 21 other sources were examined.

The Problem of Knowledge Sharing and Knowledge Creation in Organized Contexts

Organizations differ in their knowledge bases and these differences have persisting and significant effects on their relative performance. Why? How do organizations know what they know? How can their knowledge sharing and knowledge creation be managed?

THE POWER OF KNOWLEDGE IN ORGANIZATIONAL PERFORMANCE

While manual work, according to Mládková (2005), is characterized by the direct assignment of tasks from a designated superior and brings immediate, visible and measurable results (cf. Ford production), knowledge work is characterized by low visibility, an indirect link with the result, requirements for individual decisions and the ever-present possibility of misguided calculation through measurement of performance in terms of input.

Much of the world may now be termed an *information society* in which, according to Vymětal, Diačiková, and Váchová (2005), the quality of life and economic development depend increasingly on information and knowledge and how they are employed. Raw ma-

terials and economic resources, traditional grist to the mill of global competitiveness, now take second place to knowledge and information. Directly associated with this trend is the need for changes from strictly hierarchical structures to more flexible ones.

Nag and Gioia (2012), Drucker (1993), and Reich (1991) identify knowledge within an organization as its main strategic resource, the basis for the long-term sustainability of competitive advantage, not only for individual companies but also for states and nations. Knowledge unique to a given company accumulates, and continues to do so over the course of its development, in the context of its interaction with the surroundings and historical background from which its – largely tacit – form is implied. The competition is unable legitimately to copy such intrinsic knowledge, as might be possible for knowledge that is more explicit. Petříková (2010) further adds that if we consider company knowledge as a key competitive advantage and seek to use it as such through knowledge management, such knowledge management must be integrated into all managerial activities across all levels, redirecting interest away from structural capital towards the intellectual.

Barták (2008) notes that markets remaining uninfluenced by the competitive struggle are becoming increasingly rare. It is therefore essential to act proactively, to take advantage of new opportunities before others in order to maintain market position. The main prerequisite for the effective use of new waves of innovation is improvement of innovative company strategy through recognition of the creative ideas of employees. However, creativity does not necessarily equal innovation; the latter is the result of transforming ideas into new products of high added value.

HOW DO ORGANIZATIONS KNOW WHAT THEY KNOW?

Thanks to the high expectations put on knowledge management, the need for a more developed definition of the concept of emergent knowledge is becoming quite pressing. According to Veber (2009), knowledge is a dynamic, involving interaction between experience, skills, social relations, values, and thought processes. Částoral (2010) connects knowledge with information transformed into usable form, either through human agents or by technical means (information held in information systems). This concept parallels the division of knowledge into tacit and explicit, mentioned, for example, by Collison (2005).

Mládková (2005) draws attention to access to knowledge from the ecological and the technical perspective, which corresponds to the

enactivist (Varela, Thompson, and Rosch 1992) and the representational approach to organizational epistemology, i.e. studies of how organizations construct, process and justify their knowledge (Tsoukas 2005). A technical or representational view perceives knowledge only in explicit terms, separating it strictly from people's thinking and tracking the methods or procedures through which innovative solutions emerge. This approach is widely perceived as American (e.g. Davenport and Prusak 1998). An ecological or enactivist approach tackles knowledge dynamically, as a process, constantly developing, integrating with the knowledge of the surroundings and context, which allows the system to respond to changes. In practice, this means awareness of the organization as an ever-changing system in constant interaction with its surroundings – for example, competitors, customers, and employees. Efforts should be made to create space for maximum interaction that can subsequently increase transfer and sharing of knowledge, allowing exposure of that which is obsolete and making space for the new (Barták 2008). The enactivist approach is more typical of Japanese and European firms.

Zhu (2004) develops the idea of the perception of knowledge through culture (cf. also Andriessen 2008). He differentiates between four main styles: the American, European, Japanese and Chinese.

The American style adheres to the technical approach, building databases (through IT technologies) containing knowledge derived from all the individuals in a company. The position of *Chief Knowledge Officer* (CKO) has been brought into being, a person tasked with managing existing knowledge and selecting a few individuals to execute knowledge management initiatives (Takeuchi 1998).

The Japanese style uses an ecological approach, in which emphasis is laid upon tacit knowledge considered as part of the human character and experience. The knowledge network is created by everyone, not only the manager or CKO; it arises out of interaction between all levels – company-individual, group and organisational (Takeuchi 2001).

The European style lies between. Knowledge is perceived not only as a static and human mental skill, but also as a work in progress, its final shape subject to historical, sociological and cultural environments. Swan and Scarbrough (2001) attribute a suggestive, controversial, and collective nature to knowledge; it is not enough to establish a database, implement a supporting culture or order employees to act in a given way. Knowledge workers have to combine their own knowledge and experience with superiors' requirements,

at the same time as being limited by rules, company procedures and available equipment.

The Chinese style owes much to the national religious and historical background. In the footsteps of Confucian thought, a framework they term *Wuli-Shili-Renli* (wsr) has emerged. In rough translation, *Wuli* is regularities in objective existence, *Shili* is ways of seeing and doing and *Renli* encompasses the patterns underlying human relations (Gu and Zhu 2000).

A methodical approach to identification and description of the enactment of organizational knowledge in successful organizational performance requires a holistic approach to knowledge, involving enquiries into organizational *practice and thinking* (Toulmin 1990; Tsoukas 2005). Among such approaches, the following concepts, centring on flexible practice and innovative thinking, are worthy of note.

Weick's concept of *sense-making* (Weick 1969; 1995; Weick, Sutcliffe, and Obstfeld 2005) draws attention to the *collective mind* (Weick and Roberts 1993), which may be defined as the pattern of interrelations of actions taking place in a social system. Members of the system in a company are employees, their actions regulated by their own decisions, the actions of their colleagues and system reaction. With increasing harmony between these three components, mistakes made in a decision-making process become more valued. Compared with other authors (Hutchins 1991; Sandelands and Stablein 1987), Weick favours the form of mind connection and mind activity over connection strength or mind as entity.

Tsoukas (2009) introduces a dialogical approach. Dialogue enables at least two speech partners to exchange a verbal message. If partners respond to each other (double interacting), each partner thinks while considering the restrictions of his/her utterance, and a productive dialogue ensues, using self-detachment (*self-distanciation* is the term used by Tsoukas) to establish the distinctions through which new knowledge can be created. Such self-detachment can lead to creating new knowledge, through making new distinctions by the processes of *conceptual combination*, *conceptual expansion* and *conceptual reframing*. Conceptual combination uses already-known concepts and combines them to create a new category or change our current cognition. Conceptual expansion develops present concept signification, at best by using conventional forms such as analogies. Conceptual reframing, in which a new view of the concept arises out of object reclassification, means that emphasis is shifted between different classes.

Hess and Ostrom (2005) identify knowledge as a shared resource, including factors from the fields of technology, politics, psychology, economics, sociology and intellectual function to explore various subjects, where human behaviour and decision-making are regulated by rules and norms. They introduce what they term the *Institutional Analysis and Development* framework (IAD), which has the advantage of its adaptability to dynamic states of affairs, in which individuals have to cope with novel restrictions, norms and technologies. Because, as Gibson, McKean, and Ostrom (2000) point out, it is impossible to focus on just one part of system complexity, e.g. storing knowledge, the users of the physical form of knowledge, the specific conditions and relationships within the knowledge community and the unwritten rules in use must be known. The IAD framework specifies three groups of variables that influence required outputs. In the context of knowledge commons, biophysical characteristics (facilities, artefacts, ideas), attributes of the community (Who are the users/providers? Are values shared between participants?), and using rules as a first group of variables, must all be considered. The second group of variables takes in the decision-makers, who make use of the first group elements to set the rules or pinpoint directions for action.

Table 1 (p. 86) summarizes the approaches discussed so far.

LIMITS AND IMPLICATIONS FOR FURTHER RESEARCH

Research related to knowledge management has expanded in recent years (Vogel 2012), making room in the representational approach to accommodate the enactivist (or process-oriented). Weick's concept of sense-making is perhaps the best-known enactivist approach in this field.

However, although much is known of *how* particular knowledge is created within an organization, significantly less is established of *how*, and why, certain regularities of processing, constructing and justification of knowledge within an organization affect organizational performance (Danneels 2010; Sandberg and Targama 2007; Tsoukas and Vladimirou 2001).

Emerging lines of research have begun to address this shortcoming by conceptualizing knowledge not as an entity but as a performative realization. Such a reconceptualization has opened up several new discussions and inquiry spaces about *how* e.g. expertise (Collins and Evans 2007; Dreyfus 2005; Dreyfus and Dreyfus 1986), competence (Fauré and Rouleau 2011; Rouleau and Balogun 2011; Sandberg and Pinnington 2009) and dynamic capabilities (Danneels

TABLE 1 Comparison of Selected Approaches to the Creation of Organizational Knowledge

Item	Approach			
	Enactivist			Representational
Author	Weick	Ostrom	Tsoukas	Vymětal et al.
Aim of approach	People who act as if they are a group.	To create an adaptable environment for sharing and thinking up new knowledge within an entire community.	To create new knowledge by reframing existing experience(s).	To collect and store all knowledge into a database and find an automatic algorithm for the creation of new knowledge.
Form of knowledge	Tacit	Tacit/explicit	Tacit/explicit	Explicit
Creators of knowledge	People's minds	Community	Individual	Knowledge worker
Process	Connecting	Creation	Reframing	Collecting
Year of publication	1993	2005	2009	2005
Knowledge definition	Knowledge is based on connections of symbols not on separated symbols; uniqueness.	Shared-resource, including various factors.	Individual ability to draw distinctions, within a domain of action, based on an appreciation of context or theory, or both.	Information widened by previous knowledge, skills, experiences, mental models.

2010) are realized in the performance of individuals, groups, and organizations. These new discussions are also enhanced by a renewed attention to skills (Attewell 1990; Ingold 2000; Sennett 2008) and the modes of handling knowledge within organizations (Brown and Duguid 1991; Gherardi 2006; Nicolini et al. 2003; Tsoukas 2005).

Much research remains to be done. Process perspective is likely to be beneficial in several important ways. For example, it has the potential to identify and describe activities through which knowledge is enacted in organizational performance. However, also needed is a theoretical (representational) explanation for, and justification of, the reasons *why* these processes in social and individual experience, as well as activities within an organization, are successful – espe-

cially in the long run. Such a theoretical extension and explanation would facilitate understanding and controlled reproducibility of those events that are considered and accepted as examples of organizational success.

Sharing and Creation of Knowledge as a Commons: The Missing Link to Organizational Performance?

COMMONS

The term *commons* is intrinsic to much that follows and it is therefore relevant to expand briefly upon its origins, use and analysis. The word finds its roots in meanings that centre upon that which is shared – *held in common* – rather than owned. For hundreds of years (even thousands if one accepts certain translations from ancient Rome), *commons* has referred to shared, non-owned land and goods, or to a stratum of society or community that possesses nothing or very little. Hence, in the English language, *short commons* means a lack of communally supplied food; a *common* is (or rather was) land available for community use with no particular owner; the House of Commons is Britain's third estate, the lower level of parliament intended to represent those people *not enabled*. In modern socio-economic terms, commons is expanded to include the natural environment, the air, the habitable land, and the waters of the earth. For the digital world, Fuster Morell (2010, 5) defines the digital commons as 'information and knowledge resources that are collectively owned or shared between or among a community and that tend to be non-exclusive, that is be [freely, generally] available to third parties.'

Some of the terminology and assumptions commonly associated with commons have picked up a certain bias from the political history of the British Isles. A revolution took place in British agricultural production from the mid-seventeenth to the nineteenth centuries. Although domestic production increased enormously, such success came at the expense of the loss of common land, as old manorial holdings fell into complete private ownership, robbing communities of their shared allotments of ground. This gave wide currency to *the tragedy of the commons*, a term made famous by an eponymous article by Garrett Hardin (1968), but first used by the British economist William F. Lloyd in 1833. It posited various disadvantages of commonly-held land, largely arising out of irresponsible and self-interested over-use. However, on Continental Europe, especially in Germany, Austria and Switzerland, such pessimism was far from justified in small-scale agriculture. A couple of centuries later, the dis-

interested observer may well consider many of the British objections to commons as pseudo-scientific justification for simple commercial greed, although some of the points made remain worthy of consideration. There can be no doubt that, as Hardin pointed out, in the absence of appropriate managerial leadership of the creation and consumption of commons, focusing on their development or at least maintenance or non-overuse, disaster may result.

Managing the commons

Problems of commons may be addressed by measures that prevent waste and overuse of such resources. The Austrian school of economics, represented mainly by Friedrich Hayek and Ludwig von Mises, offers a solution that is here referred to as the *privatization of resources*. This is the transfer of ownership into private hands on the basis that a private owner has an interest in the long-term conservation of the resource. Furthermore, it is possible to take advantage of *state regulation*, which, in the form of quotas or other restrictions, specifies maximum consumption so that the source is preserved. There is a need to take care of commons in the long term and use their collective stewardship (that no one has the right of ownership; there are only administrators) (O’Riordan 2014). Elinor Ostrom, the first woman to be awarded the Nobel Prize for Economics, proposes that the intervention of state power or privatization is not necessary, assuming that people can manage the goods together and that their solutions may work well over time. Ostrom’s work emphasises that direct communication between the entities that have an influence on the goods is the most important factor, and further claims that people can cooperate in their negotiations, which leads to optimization of administration. She also proposed eight widely accepted principles for the management of the commons that should help with their use (Ostrom 1990; Ostrom 2010).

FROM KNOWLEDGE MANAGEMENT TO MANAGING KNOWLEDGE AS A COMMONS?

Commons may be, under certain circumstances, accessible and available to all. This may be both their blessing and their curse, and is the reason proper management of them is essential. When, for example, information commons and protected intellectual property (copyright, industrial design, patents, utility models, etc.) are placed into contrast, it becomes clear that information commons will be (in this case through price) available for subsequent research or more favourable use.

TABLE 2 Comparison of Approaches to the Management of Commons

Item	Models		
	Centralized	Decentralized	Polycentric
Schools/ examples	Hardin (1968)	Austrian school (1940s)	Ostrom (1990), Hess and Ostrom (2007), Pisano and Shih (2009), Frischmann, Madison, and Strandburg (2014)
Characteristics	Historically, the first approach to manag- ing commons	Emphasis on private property, and justifi- cation for it	State-of-the-art ap- proach to managing commons
Focus	Overharvesting of commons leading to the <i>tragedy of the commons</i>	Problems arising from unclear owner- ship	Empirical analysis of the management of long-lasting and ro- bust commons
Solution	Regulation	Privatization	Design principles for managing commons
Result	Prevention of the overuse of commons; prone to failure	Tragedy of the <i>an- ticommons</i> (Heller 1998)	Growth and robust- ness of commons

Michael Heller (1998) introduced the concept of *the tragedy of the anticommons*, which describes the kind of market failure that occurs when ownership is so fragmented that its use becomes problematical. Typically, this takes the form of a blockage of innovation, a kind of gridlock arising out of excessive patent protection, which in turn leads to a phenomenon that may be termed underuse of resources. James McGill Buchanan, Nobel Laureate in Economics, also sees a useful metaphor in the term *anticommons*, in that it draws attention to the problem of under-use, directly comparable with overuse, of resources.

Business organizations cannot expect to use the protected intellectual property of others in the near future. They therefore have to dig deeper into their own structures, right to the level of departments and employees. Such entities are ineluctably faced with the realities and problems of daily function. Every day, new, sophisticated or improvisational solutions to existing problems must be assessed. These solutions may be considered as new and available information or knowledge commons. Business organizations can sustainably benefit from these solutions, no doubt, but there is no escape from a re-instantiation of the principles of their appropriate management within the organization (Ostrom 1990; Hess and Ostrom 2007; Ostrom 2010; Frischmann, Madison, and Strandburg 2014).

Sharing and Creation of Knowledge as a Commons: The Core of Ecosystems of Innovation

ECOSYSTEM AND INNOVATION: SOME DEFINITIONS

The term *ecosystem* originally came from the natural sciences (Tansley 1935) and there are some differences in its interpretation between the natural and socio-economic sciences; however, there is also a great deal in common (Vermeij and Leigh 2011), definitely enough to justify its use in the latter context.

The natural sciences view an ecosystem as a network of all the organisms within a defined unit of space, which interact with, and affect, each other and their surroundings, having all the components necessary for survival. From another point of view, it is a dynamic, unpredictable *ad hoc* open-system analysable by scientists (Arms 1990; Chiras 1990; Odum and Barrett 2005; Warren and Robbins 2007; Wright and Nebel 2002).

For the purposes of this contribution, a definition of innovation coined by Baregheh, Rowley, and Sambrook (2009, 12) was selected for its robust meaning: 'Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.'

ECOSYSTEMS OF INNOVATION: APPROACHES

Increasing globalization leading to increasing competition, shortening life cycles of products, excess of supply in many industries and/or rapidly changing conditions are just some of the environmental factors putting pressure on the *ecosystems of organizations*. Adaptation to ever-changing environments is essential to long-term survival, in human and societal networks as in the natural world. *Innovation* is viewed as a key to success and prosperity (Kotzier and Alon 2013). As conditions change, so must organizations – and innovation is the key.

Synthesizing various other definitions of innovation ecosystems, Gobbles' (2014, 1) definition is used in this work: 'Innovation ecosystems are dynamic, purposive communities with complex, interlocking relationships built on collaboration, trust, and co-creation of value and specializing in exploitation of a shared set of complementary technologies or competencies.'

This work classifies Ecosystems of Innovation from an organization-environment perspective. Three major approaches to Ecosystems of Innovation are identified:

- A Single-organization ecosystem – an ecosystem within an organization
- B Networks of organizations – inter-organizational relationships
- C Regional innovation networks – a whole region as an ecosystem

It is worth noting that, while sub-approaches in category B are somewhat self-contained, lone theories A and C are used as a blend of different sub-approaches with only the underlying aspect of common perspective.

Single-Organization Ecosystem

Approach A is probably the least developed in the current contribution, despite a great deal of interest from the academic and non-academic worlds (e.g. Trifilova and von Stamm 2009; Koetzier and Alon 2013).

In this field, there is little consensus about what constitutes a single-company ecosystem of innovation, i.e. an innovative ecosystem within a company's boundaries. Yet, only partial aspects of this perspective have attracted research attention. Actual case studies of companies trying to establish an ecosystem of innovation for their own purposes (e.g. Thompson et al. 2012) are of especial interest. However, these organizations employ a somewhat *ad hoc* approach to a number of innovation concepts, rather than a single structured technique, to establish their innovation ecosystems.

Some identified sub-approaches:

1. Stanford's Innovation Ecosystem Network (Russell et al. 2011; Still et al. 2012) – data-driven study of relations within the network as a source of sustained value co-creation.
2. Chinese schools of Innovation Ecosystems – Emerging interest among Chinese academics in this field has led to the creation of several approaches toward Ecosystems of Innovation, of which probably the most promising is Total Innovation Management (Xu et al. 2007; Xu 2012), which has been put forward as a paradigm for management of an innovation value network.
3. High Reliability Organizations (e.g. Weick and Roberts 1993) – studies of systems within organizations that have avoided failures in high-risk environments.
4. Naïve simplification (e.g. Tidd and Bessant 2009) – usually in the form of guidelines for the establishment of better innovation climates; however, without proposal of any system for understanding underlying factors.

Networks of Organizations

Theories of inter-organizational ecosystems of innovation have received far more attention than those outlined as approach A. Two in particular are worthy of mention – Open Innovation and Clusters – together with some less-developed sub-approaches:

1. Open Innovation – introduced by Chesbrough (2003), as the opposite of old-fashioned closed innovation and defined as ‘a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology’ (Chesbrough 2006, xxiv). According to Remneland Wikhamn and Wikhamn (2013), open innovation theory may be divided into *firm perspective* and *ecosystem perspective*. The former is represented by initial work on the part of Chesbrough (2003), who co-developed it, into (open) business strategy (Chesbrough and Appleyard 2007). The latter is more concerned with the entire ecosystem beyond the boundaries of the given firm. Von Hippel’s work (1986) on user innovation preceded the establishment of this theory.
2. Clusters – based on Porter, who defined them as groups of physically close and inter-supporting industries creating ‘competitive advantage in a range of interconnected industries that are all internationally competitive’ (Porter 1990, 86). A cluster is the natural result of vertical and horizontal relationships between a nation’s regional, successful industries. They support each other’s development in a mutually reinforcing process (Porter 2011). According to Matei (2013), general cluster theory can now be divided into two themes: clusters and competitive poles.

Other important sub-approaches:

3. Innovation Interdependence (Adner 2006; Adner and Kapoor 2010) – a view of Ecosystems of Innovation as a source that may collectively offer of a network of organizations to a customer. The contribution of each network member is essential to the final result.
4. Ecosystem Lifecycle (Moore 1993) – proposes different kinds of organizational innovation behaviour depending on the maturity of an ecosystem (viewed as a parallel to natural ecosystems).

Regional Innovation Networks

Concepts of Regional Innovation Networks constitute an *ad hoc* category comprising countless theories together with, most importantly,

their practical deployment by regional governments. These concepts differ from the previous approaches in two dimensions – overall goal (i.e., the economic success of a region) and extent (mostly, all the organizations in a region).

Approach C is more concerned with supporting the competitive advantage of a whole region rather than a single industry (or group of closely related industries). This definition tends to confine matters to local governments, since the grasp of other organizations rarely extends so widely.

The theoretical basics of this approach are very loose. The configuration of these networks is subject to very fundamental differences in economic, political and other theory, from libertarianism to centralism.

Promoting economic success, which is an overall goal of this approach, in a region is actually the subject of works of traditional economic authors from Antiquity and recent history (e.g. Aristotle, mercantilism, Adam Smith) and remains important in modern times (e.g., Paul Krugman and his economic geography 1991, or competitive advantage, Michael Porter 2011).

LIMITS AND IMPLICATIONS FOR FURTHER RESEARCH

Some more general concepts have been excluded from this review, although they touch this field partially or could be used for better understanding of some of its aspects (e.g. theories about strategic alliances or Supply Chain Management).

The results of this review pinpoint important differences in the development of theories arising out of individual approaches. Although there are dominant and self-sufficient concepts for networks of organizations (Approach B) and Regional Innovation Networks (Approach C), such coverage is absent from a single-organization perspective, despite an undeniable need for such concepts among organizational leaders. In Accenture's 2012 Innovation Survey, only 28% of 519 executives expressed belief that their organizations were achieving consistent innovation performance (Koetzier and Alon 2013).

Conclusion and Some Research Imperatives

The general intention of this contribution is to assist understanding of, and improve, the evolutionary processes that efficiently influence organizational performance.

Starting with the central task of organizations, i.e. to simplify and systematize production processes, it emerges that the knowledge of

TABLE 3 Comparison of Approaches to Ecosystems of Innovation

	Single-organization Ecosystem	Networks of Organizations (in general)	Open Innovation	Clusters	Regional Innovation Networks
Scope	Inside organization	Network of mutually connected organizations	Network of organizations and individuals	Network of mutually connected organizations in a certain industry in a selected region	Network of all organizations in a selected region
Source of innovation	Inside	Inside	Outside	Inside	Inside
Primary goals	Promoting success of an organization (through better innovation)	Promoting success of individual members	Contact with innovation talent beyond a given organization; promoting progress in a selected field	Promoting success of individual members and their region	Promoting development of a region (employment, taxes, business success)
Major stakeholders	Shareholders, management, employees	Organizations	Stakeholders in general	Organizations	Government, organizations, inhabitants
Approach to intellectual property	Closed	Mixed	Open	Mixed	Mixed
Relations among members	Medium-tight	Loose-medium	Loose	Loose	Loose
General preconditions	Suitable organizational culture; management and employee support	Mixed	Openness, fair behaviour and meritocracy	Concentration of organizations in a similar industry	Government support
Duplicability and imitability	Difficult	Easy-medium	Medium	Easy	Easy

the members of an organization has an important function. This depends on either individual knowledge or organizational knowledge (an organization can produce knowledge by itself, which is more than the sum of the individual knowledge contributions).

The topic of *organizational epistemology* arises out of this, concentrating on the emergence of knowledge in both the individual and the organizational realms in order to explain success in organizational performance and find out how one can influence the other in a positive way. Thus, knowledge is understood as a causal factor for both the functioning and the success of organizations.

In attempts to analyse the causal influence of knowledge upon decisions and creation within organizations, the beginning of research in the field of *knowledge management* was strongly influenced by cognitivist or representational analysis of knowledge, primarily orientated towards explanation of success in organizational performance. In the context of application, presuppositions of local operationalisation – put differently, enactment of knowledge – were not taken into account.

In parallel, research addressing the sustainable management of *commons* was in process to address the problem of their overexploitation (Rose 1986; Ostrom 1990), finally leading to the idea of considering knowledge itself as a commons as well (Hess and Ostrom 2007; Frischmann, Madison, and Strandburg 2014). Von Krogh (2003) condensed the point of research into commons to *communal knowledge* in association with the *enactment* of knowledge as investigated from the very outset by Weick, Tsoukas and others.

Returning to the first research question, these two lines of development, the representational and the enactivist approaches, develop an understanding of how knowledge can be constructed, processed and justified within an organization. In summary, it could be said that the cognitivist approach concentrates primarily on sharing knowledge, whereas the enactivist approach addresses the sharing of resources, in which knowledge itself is considered a resource to be handled as a commons.

A constructive combination of the two approaches, establishing a bridge between the cognitivist trend on the one hand and considering knowledge a resource on the other, will lead to model-theoretic ideas that allow for the emergence, promotion and support of knowledge-intensive environments built around communal knowledge as per von Krogh (2003) and the core of research on commons as per Ostrom (1990; 2010) and Hess and Ostrom (2007). Such knowledge-intensive environments are the backbone of sustainable



FIGURE 1 Organizational Epistemology of Ecosystems of Innovation

management of commons and, furthermore, establish the ecosystems essential to innovative adaptation to changes in the world.

The third research question leads to the conclusion that innovation ecosystems are not sufficiently analysed in the literature; the term has more currency as a *buzzword* than as a concrete cognitive tool. The existence of Ecosystems of Innovation needs to be supported by knowledge-intensive environments resting upon what appears above. At the same time, this supplies answers to the second research question concerning the design of organizations that support knowledge sharing and knowledge creation.

This scoping review was intended to uncover the innovative status of our own research (Born and Gatarik 2013; Gatarik, Born, and Kulhavý, forthcoming) by revealing the solid line of development that leads through both knowledge management and research into commons with respect to organizational epistemology.

It is worth reiterating that, in the commons research of Ostrom, it is suggested that factors influencing knowledge sharing in communities be involved, insofar as they support innovations, as well as into

knowledge management. There is a strong assumption that the combination of classical knowledge management and commons can lead to the construction of a new kind of meta-theory with ecosystems of innovation as core element. This meta-theory is expected to lead to new and effective ways of addressing the original task of knowledge management discussed at the beginning of this contribution. Such a theory could contribute greatly to a deeper understanding of the field of ecosystems of innovation in its intention to support organizational epistemology, and thus organizational performance.

Acknowledgements

This contribution owes a great debt to Prof. Dr. Rainer Born of the University of Linz and Vienna, in terms of both inspiration and execution. We would also like to extend our sincere thanks to both the anonymous reviewers; their comments were constructive and immensely helpful. Dr. Tony Long helped work up the English. Without all of them, it simply could not have happened.

References

- Adner, R. 2006. 'Match Your Innovation Strategy to Your Innovation Ecosystem.' *Harvard Business Review* 84 (4): 98–107.
- Adner, R., and R. Kapoor. 2010. 'Value Creation in Innovation Ecosystems: How the Structure of Technological Interdependence Affects Firm Performance in New Technology Generations.' *Strategic Management Journal* 31 (3): 306–33.
- Andriessen, D. 2008. 'Stuff or Love? How Metaphors Direct Our Efforts to Manage Knowledge in Organisations.' *Knowledge Management Research & Practice* 6 (1): 5–12.
- Arksey, H., and L. O'Malley. 2005. 'Scoping Studies: Towards a Methodological Framework.' *International Journal of Social Research Methodology* 8 (1): 19–32.
- Arms, K. 1990. *Environmental Science*. Philadelphia: Saunders College Publishing.
- Attewell, P. 1990. 'What Is Skill?' *Work and Occupations* 17 (4): 422–48.
- Baregheh, A., J. Rowley, and S. Sambrook. 2009. 'Towards a Multidisciplinary Definition of Innovation.' *Management Decision* 47 (8): 1323–39.
- Barták, J. 2008. *Od znalostí k inovacím*. Prague: Alfa.
- Born, R., and E. Gatarik. 2013. 'Knowledge Management and Cognitive Science: Reflecting the Limits of Decision Making.' In *Cognition and Motivation: Forging an Interdisciplinary Perspective*, edited by S. Kreitler, 321–51. Cambridge: Cambridge University Press.
- Brown, J. S., and P. Duguid. 1991. 'Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation.' *Organization Science* 2 (1): 40–57.

- Chesbrough, H. W. 2003. 'The Era of Open Innovation.' *MIT Sloan Management Review* 44 (3): 35–41.
- . 2006. *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Boston, MA: Harvard Business School Press.
- Chesbrough, H. W., and M. M. Appleyard. 2007. 'Open Innovation and Strategy.' *California Management Review* 50 (1): 57–76.
- Chiras, D. D. 1990. *Environmental Science: Action for a Sustainable Future*. Redwood City, CA: Benjamin Cummings.
- Collins, H., and R. Evans. 2007. *Rethinking Expertise*. Chicago: Chicago University Press.
- Collison, C. 2005. *Knowledge management: praktický management znalostí z prostředí předních světových učících se organizací*. Brno: Computer Press.
- Častorál, Z. 2010. *Strategický management změn a znalostí*. Prague: Univerzita Jana Amose Komenského.
- Danneels, E. 2010. 'Trying to Become a Different Type of Company: Dynamic Capability at Smith Corona.' *Strategic Management Journal* 32 (1): 1–31.
- Davenport, T. H., and D. J. Patil. 1998. *Working Knowledge: How Organizations Manage What They Know*. Boston, MA: Harvard Business School Press.
- Dreyfus, H. L. 2005. 'Overcoming the Myth of the Mental: How Philosophers Can Profit from the Phenomenology of Everyday Expertise.' *Proceedings and Addresses of the American Philosophical Association* 79:47–65.
- Dreyfus, H. L., and S. E. Dreyfus. 1986. *Mind over Machine: The Power of Human Intuition and Expertise in the Era of the Computer*. New York: Free Press.
- Drucker, P. F. 1993. *Managing in Turbulent Times*. New York: Routledge.
- Fauré, B., and L. Rouleau. 2011. 'The Strategic Competence of Accountants and Middle Managers in Budget Making.' *Accounting, Organizations and Society* 36 (3): 167–82.
- Frischmann, B. M., M. J. Madison, and K. J. Strandburg. 2014. *Governing Knowledge Commons*. Oxford: Oxford University Press.
- Fuster Morell, M. 2010. 'Governance of Online Creation Communities: Provision of Infrastructure for the Building of Digital Commons.' Doctoral dissertation, European University Institute, Florence.
- Gatarik, E., R. Born, and V. Kulhavý. Forthcoming. 'Managing Network Economies: The Competitive Advantage of Commons as Ecosystems of Innovation.' *Journal of Organizational Transformation and Social Change*.
- Gherardi, S. 2009. *Organizational Knowledge: The Texture of Workplace Learning*. Oxford: Blackwell.
- Gibson, C. C., M. A. McKean, and E. Ostrom. 2000. *People and Forests: Communities, Institutions, and Governance*. Cambridge, MA: MIT Press.

- Gobble, M. M. 2014. 'Charting the Innovation Ecosystem.' *Research Technology Management* 57 (4): 55-7.
- Gu, J., and Z. Zhu. 2000. 'Knowing Wuli, Sensing Shili, Caring for Renli: Methodology of the wsr Approach.' *Systemic Practice and Action Research* 13 (1): 11-20.
- Hardin, G. 1968. 'The Tragedy of the Commons.' *Science* 162 (3859): 1243-8.
- Heller, M. A. 1998. 'The Tragedy of the Anticommons: Property in the Transition from Marx to Markets.' *Harvard Law Review* 3:621-88.
- Hess, C., and E. Ostrom. 2005. 'A Framework for Analyzing the Knowledge Commons: A Chapter from Understanding Knowledge as a Commons; From Theory to Practice.' *Libraries' and Librarians' Publications* 21, Syracuse University, Syracuse, NY.
- . 2007. *Understanding Knowledge as a Commons*. Cambridge, MA: MIT Press.
- Hutchins, E. 1991. 'The Social Organization of Distributed Cognition.' In *Perspectives on Socially Shared Cognition*, edited by L. B. Resnick, J. M. Levine, and S. D. Teasley, 283-307. Washington, DC: American Psychological Association.
- Ingold, T. 2000. *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London: Psychology Press.
- Jesson, J., L. Matheson, and F. M. Lacey. 2011. *Doing Your Literature Review: Traditional and Systematic Techniques*. Thousand Oaks, CA: Sage.
- Koetzier, W., and A. Alon. 2013. 'Innovation Survey: Why Low-Risk Innovation Is Costly' <http://www.accenture.com/us-en/Pages/insight-low-risk-innovation-costly.aspx>
- Krugman, P. R. 1991. *Geography and Trade*. Leuven: Leuven University Press.
- Matei, R.-M. 2013. 'Creating Competitive Poles: The Sustainable Model for Obtaining the Competitive Advantage.' *Theoretical & Applied Economics* 20 (8): 47-58.
- Mládková, L. 2005. *Moderní přístupy k managementu: tacitní znalost a jak ji řídit*. Prague: Beck.
- Moore, J. F. 1993. 'Predators and Prey: A New Ecology of Competition.' *Harvard Business Review* 71 (3): 75-86.
- Nag, R., and D. A. Gioia. 2012. 'From Common to Uncommon Knowledge: Foundations of Firm-Specific Use of Knowledge as a Resource.' *Academy of Management Journal* 55 (2): 421-57.
- Nicolini, D., S. Gherardi, and D. Yanow. 2003. *Knowing in Organizations: A Practice-Based Approach*. New York: ME Sharpe.
- Nonaka, I., and H. Takeuchi. 1995. *The Knowledge Creation Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.

- Odum, E. P., and G. W. Barrett. 2005. *Fundamentals of Ecology*. Belmont, CA: Thomson.
- O’Riordan, T. 2014. *Environmental Science for Environmental Management*. New York: Routledge.
- . *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Ostrom, E. 2010. ‘Beyond Markets and States: Polycentric Governance of Complex Economic Systems.’ *The American Economic Review* 100 (3): 641–72.
- Petříková, R. 2010. *Moderní management znalostí: principy, procesy, příklady dobré praxe*. Příbram: Professional Publishing.
- Pisano, G. P., and W. C. Shih. 2009. ‘Restoring American Competitiveness.’ *Harvard Business Review* 87 (7–8): 114–25.
- Porter, M. E. 1990. ‘The Competitive Advantage of Nations.’ *Harvard Business Review* 68 (2): 73–93.
- . 2011. *Competitive Advantage of Nations: Creating and Sustaining Superior Performance*. New York: Free Press.
- Reich, R. 1991. *The Work of Nations: Preparing Ourselves for Twenty-First Century Capitalism*. New York: Alfred Knopf.
- Remneland Wikhamn, B., and W. Wikhamn. 2013. ‘Structuring of the Open Innovation Field.’ *Journal of Technology Management & Innovation* 8 (3): 173–85.
- Rose, C. 1986. ‘The Comedy of the Commons: Custom, Commerce, and Inherently Public Property.’ *The University of Chicago Law Review* 53 (3): 711–81.
- Rouleau, L., and J. Balogun. 2011. ‘Middle Managers, Strategic Sense-making, and Discursive Competence.’ *Journal of Management Studies* 48 (5): 953–83.
- Russell, M. G., K. Still, J. Huhtamäki, C. Yu, and N. Rubens. 2011. ‘Transforming Innovation Ecosystems through Shared Vision and Network Orchestration.’ Paper presented at the Triple Helix 9 International Conference, 11–14 July, Stanford, CA.
- Sandberg, J., and A. H. Pinnington. 2009. ‘Professional Competence as Ways of Being: An Existential Ontological Perspective.’ *Journal of Management Studies* 46 (7): 1138–70.
- Sandberg, J., and A. Targama. 2007. *Managing Understanding in Organizations*. London: Sage.
- Sandelands, L. E., and R. E. Stablein. 1987. ‘The Concept of Organization Mind.’ *Research in the Sociology of Organizations* 5:135–61.
- Senge, P. M., B. Smith, N. Kruschwitz, J. Laur, and S. Schley. 2008. *The Necessary Revolution: How Individuals and Organizations Are Working Together to Create a Sustainable World*. New York: Crown Business.
- Sennett, R. 2008. *The Craftsman*. New Haven, CT: Yale University Press.

- Still, K., J. Huhtamäki, M. G. Russell, and N. Rubens. 2012. 'Transforming Innovation Ecosystems Through Network Orchestration: Case EIT ICT Labs.' Paper presented at the 23rd ISFIM Conference, Barcelona, 17–20 June.
- Swan, J., and H. Scarbrough. 2001. 'Knowledge Management: Concepts and Controversies.' *Journal of Management Studies* 38 (7): 913–21.
- Takeuchi, H. 1998. 'Beyond Knowledge Management: Lessons from Japan.' *Monash Mt Eliza Business Review* 1 (1): 21–9.
- Takeuchi, H. 2001. 'Towards a Universal Management Concept of Knowledge.' In *Managing Industrial Knowledge: Creation, Transfer and Utilization*, edited by I. Nonaka and D. Teece, 315–35. Thousand Oaks, CA: Sage.
- Tansley, A. G. 1935. 'The Use and Abuse of Vegetational Concepts and Terms.' *Ecology* 16 (3): 284–307.
- Thompson, V., B. Decker, J. A. C. Hardash, and R. O. Summers. 2012. 'NASA (In)novation Ecosystem: Taking Technology Innovation from Buzz to Reality.' Paper presented at the 2012 IEEE Aerospace Conference, Big Sky, MT, 3–10 March.
- Tidd, J., and J. Bessant. 2009. *Managing Innovation: Integrating Technological, Market and Organizational Change*. Chichester: Wiley.
- Toulmin, S. 1990. *Cosmopolis: The Hidden Agenda of Modernity*. Chicago: The University of Chicago Press.
- Trifilova, A., and B. Von Stamm. 2009. *The Future of Innovation*. Farnham: Gower.
- Tsoukas, H. 2005. *Complex Knowledge: Studies in Organizational Epistemology*. Oxford: Oxford University Press.
- . 2009. 'A Dialogical Approach to the Creation of New Knowledge in Organizations.' *Organization Science* 20 (6): 941–57.
- Tsoukas, H., and E. Vladimirov. 2001. 'What Is Organizational Knowledge?' *Journal of Management Studies* 38 (7): 973–93.
- Varela, F., E. Thompson, and E. Rosch. 1992. *The Embodied Mind*. Cambridge, MA: MIT Press.
- Veber, J. 2009. *Management: základy, moderní manažerské přístupy, výkonnost a prosperita*. Prague: Management Press.
- Vermeij, G. J., and E. G. Leigh. 2011. 'Natural and Human Economies Compared.' *Ecosphere* 2 (4): 1–16.
- Vogel, R. 2012. 'The Visible Colleges of Management and Organization Studies: A Bibliometric Analysis of Academic Journals.' *Organization Studies* 33:1015–1043.
- Von Hippel, E. 1986. 'Lead Users: A Source of Novel Product Concepts.' *Management Science* 32 (7): 791–805.
- Von Krogh, G. 2003. 'Knowledge Sharing and the Communal Resource.' In *The Blackwell Handbook of Organizational Learning and Knowledge Management*, edited by M. Easterby-Smith and M. A. Lyles, 372–92. Chichester: Wiley.

- Vymětal, J., A. Diačiková, and M. Váchová. 2006. *Informační a znalostní management v praxi*. Prague: LexisNexis.
- Warren, W. A. 2007. 'Ecosystem.' In *Encyclopedia of Environment and Society*, edited by P. Robbins, 529–33. Thousand Oaks, CA: Sage.
- Weick, K. E. 1969. *The Social Psychology of Organizing*. Reading, MA: Addison-Wesley.
- . 1995. *Sensemaking in Organizations*. Thousand Oaks, CA: Sage.
- Weick, K. E., and K. H. Roberts. 1993. 'Collective Mind in Organizations: Heedful Interrelating on Flight Decks.' *Administrative Science Quarterly* 38 (3): 357–81.
- Weick, K. E., K. M. Sutcliffe, and D. Obstfeld. 2005. 'Organizing and the Process of Sensemaking.' *Organization Science* 16 (4): 409–21.
- Wiig, K. M. 1997. 'Knowledge Management: An Introduction and Perspective.' *Journal of Knowledge Management* 1 (1): 6–14.
- Wright, R. T., and B. J. Nebel. 2002. *Environmental Science*. Upper Saddle River, NJ: Pearson.
- Xu, Q. 2012. *Leverage Innovation Capability? Application of Total Innovation Management in China's Smes' Study*. Singapore: World Scientific Publishing Company.
- Xu, Q., J. Chen, Z. Xie, J. Liu, G. Zheng, and Y. Wang. 2007. 'Total Innovation Management: A Novel Paradigm of Innovation Management in the 21st Century.' *The Journal of Technology Transfer* 32 (1–2): 9–25.
- Zhu, Z. 2004. 'Knowledge Management: Towards a Universal Concept or Cross-Cultural Contexts?' *Knowledge Management Research & Practice* 2 (2): 67–79.



This paper is published under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Abstracts in Slovene

Dvojna kotacija avstrijskih podjetij na Dunaju in v Frankfurtu: analiza odvisnosti

Lukasz Gurgul, Sanela Omerovic in Robert Syrek

Mednarodni tokovi kapitala se srečujejo z različnimi ovirami, kot so transakcijski stroški, stroški informiranja in zakonske omejitve. Rešitev v tem primeru je lahko dvojna kotacija. Okvir predstavljenе raziskave predpostavlja, da domači vrednostni papirji dvojno kotirajo na tujem kapitalskem trgu, medtem ko pa tuji vrednostni papirji ne kotirajo dvojno na domačem kapitalskem trgu. Članek se ukvarja z analizo donosa avstrijskih delnic, ki kotirajo v Frankfurtu in na Dunaju. Tu je pomembna dinamično linearna in nelinearne vzročnost med donosnostjo ter indeksi ATX in DAX . Znotraj tega konteksta najdemo pomembne smeri vzročnosti, skupaj s stopnjo odnosov izbranih vrst vzročnosti.

Ključne besede: dvojna kotacija, linearna in nelinearna vzročnost, sointegracija

Management 10 (1): 3–15

Primerjalna študija o zadovoljstvu pri delu predavateljev managementa na šolah MBA v južnem Radžastanu

Anil K. Bhatt in Thomas Remigius

Poučevanje managemente je plemenit poklic, stalen proces in kazalnik gospodarskega in družbenega razvoja. Predavatelji managementa so predpogoj uspeha programov managementa, njihova vloga v družbi se povečuje s hitro rastjo trgovine in financ po celem svetu. Družba nenehno opazuje predavatelje managementa, medtem ko obstajajo pri njih različni pomisleki, kar zadeva njihovo vlogo in zadovoljstvo. Le zadovoljni in dobro prilagojeni predavatelji managementa lahko mislijo na dobrobit prihodnjih vodij. Glavni vir zadovoljstva predavateljev managementa izhaja iz institucije, kjer poučujejo, čemur pravimo tudi higienski dejavniki. Glede na povedano, je cilj študije analizirati stopnjo zadovoljstva pri delu med predavatelji MBA v izbranih šolah v južnem Radžastanu. V ta namen so bili opredeljeni higienski dejavniki zadovoljstva pri delu, nato pa je bilo v različnih obsegih preverjeno zadovoljstvo 220 učiteljev. Analiza je pokazala, da trije dejavniki, in sicer pogoj fizičnega poučevanja, gibljiv delovni čas in okolje, ki zagotavlja varnost zaposlitve, razkrivajo zadovoljstvo pri delu predavateljev managementa v južnem Radžastanu.

Ključne besede: predavatelji managementa, zadovoljstvo pri delu, higienski dejavniki, multipla regresija, ANOVA, južni Radžastan

Management 10 (1): 17–33

Upravljanje za uspeh: Vloga transakcijskih in relacijskih mehanizmov v odnosih med kupcem in dobaviteljem

Khuram Shahzad, Josu Takala, Tahir Ali in Ilkka Sillanpää

Podjetja vedno bolj sodelujejo znotraj mreže oskrbovalne verige in ugotavljajo pomen poslovnih odnosov. Ideja je bila že v prejšnjem desetletju sprejeta s strani akademskega in empiričnega raziskovanja upravljanja poslovanja. Namen te študije je torej razviti celovit integriran konceptualni in empirični okvir, ki preučuje vlogo transakcijskih in relacijskih dejavnikov, da bi izpostavil pomembnost odnosa med kupcem in dobaviteljem. Omejene študije, ki pa so te dejavnike raziskovale posamezno, ne zagotavljajo dinamično interaktivne vloge transakcijskih in relacijskih dejavnikov v integriranem okviru. Skozi več študij primerov so ugotovitve pokazale, da učinek relacijskih dejavnikov zaupanja in komuniciranja konstruktivno vpliva na zmanjševanje transakcijskih stroškov in izboljševanje odnosov. Študija prispeva k razpravi o upravljanju kompleksnih odnosov poslovnega omrežja z zagotavljanjem kombiniranega teoretičnega (ekonomika transakcijskih stroškov in teorija družbene izmenjave) in empirično dokazanega integriranega modela. Vodstva lahko izboljšajo uspešnost poslovanja z izbiro najprimernejših struktur.

Ključne besede: odnos med kupcem in dobaviteljem, transakcijski mehanizem, relacijski mehanizem, študija primera, uspešnost poslovanja, transakcijski stroški

Management 10 (1): 35–59

Položaj žensk v družbi in pričakovano trajanje življenjske dobe ob rojstvu

Anica Novak, Žiga Čepar in Aleš Trunk

Namen tega članka je raziskati vpliv položaja žensk v družbi na pričakovano trajanje življenjske dobe ob rojstvu. Na podlagi podatkov nekaterih socialno-ekonomskih spremenljivk za 187 državah po vsem svetu, ki jih zbirajo Združeni narodi v okviru United Nations Development Programme – Human Development Report, smo razvili regresijski model dejavnikov za pričakovano življenjsko dobo. Skozi empirično testiranje treh hipotez, ki se nanašajo na različne vidike položaja žensk v družbi, smo ugotovili, da razmerje stopnje zaposlenosti med ženskami in moškimi statistično pomembno negativno vpliva na pričakovano življenjsko dobo ob rojstvu, kar je, vsaj na prvi pogled, nepričakovano. Hkrati število najstniških rojstev na 100 žensk v starosti 15–19 let, kot tudi neenakost med spoloma statistično pomembno negativno vpliva na pričakovano življenjsko dobo ob rojstvu.

Ključne besede: pričakovano trajanje življenjske dobe ob rojstvu, staranje prebivalstva, zaposlitveno razmerje med ženskami in moškimi, neenakost med spoloma, najstniška nosečnost

Management 10 (1): 61–77

**Od managementa znanja do inovacijskih ekosistemov:
pregled raziskav**

*Eva Gatarik, Lenka Janošová, Michal Jirásek, Viktor Kulhavý
in Martin Štěrba*

Načini, na katere ustvarjajo, obdelujejo in uravnavajo znanje, se razlikujejo, kar ima trajen vpliv na njihovo uspešnost. Področje managementa znanja se je razvilo v različne, čeprav prepletene raziskovalne smeri, kar tudi dokazuje pomen, ki ga ima znanje za uspešnost organizacije. Kljub temu pa se zdi, da še ni bila postavljena metateorija, ki bi združevala različne pristope ter pojasnjevala in napovedovala uspešnost organizacij glede na način upravljanja z znanjem v teh organizacijah. V tem pregledu raziskujemo zakonitosti, po katerih inovacijski ekosistemi ustvarjajo, obdelujejo in uravnavajo znanje. Namen raziskave je pregledati dosedanje raziskave na tem področju, da bi lahko prek združitve managementa znanja in raziskav skupnih virov postavili metateorijo, ki bi omogočala učinkovit pristop k izvirni nalogi managementa znanja, tj. dolgoročni podpori doseganja uspešnosti organizacije.

Ključne besede: management znanja, organizacijska epistemologija, skupni viri, inovacijski ekosistemi, pregled raziskav

Management 10 (1): 79–102